

prime



USER GUIDE 6.0

Author

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First Edition

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About the Author

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1. Introduction

1.1 What is PrimeFaces?

PrimeFaces is an open source JSF component suite with various extensions.

- Rich set of components (HtmlEditor, Dialog, AutoComplete, Charts and many more).
- Built-in Ajax based on standard JSF Ajax APIs.
- Lightweight, one jar, zero-configuration and no required dependencies.
- Push support via Atmosphere Framework.
- Mobile UI kit to create mobile web applications.
- Skinning Framework with 35+ built-in themes and support for visual theme designer tool.
- Premium themes and layouts
- Extensive documentation.
- Large, vibrant and active user community.
- Developed with "passion" from application developers to application developers.

2. Setup

2.1 Download

PrimeFaces has a single jar called **primefaces-`{version}`.jar**. There are two ways to download this jar, you can either download from PrimeFaces homepage or if you are a maven user you can define it as a dependency.

Download Manually

Manual downloads are actually links to the maven repository, for more information please visit;

<http://www.primefaces.org/downloads>

Download with Maven

Group id is *org.primefaces* and artifact id is *primefaces*.

```
<dependency>
  <groupId>org.primefaces</groupId>
  <artifactId>primefaces</artifactId>
  <version>6.0</version>
</dependency>
```

2.2 Dependencies

PrimeFaces only requires a JAVA 5+ runtime and a JSF 2.x implementation as mandatory dependencies. There're some optional libraries for certain features. Licenses of all dependencies and any 3rd part work incorporated are compatible with the PrimeFaces Licenses.

| Dependency | Version * | Type | Description |
|--------------------|-----------------|----------|----------------------------------|
| JSF runtime | 2.0, 2.1 or 2.2 | Required | Apache MyFaces or Oracle Mojarra |
| itext | 2.1.7 | Optional | DataExporter (PDF) |
| apache poi | 3.13 | Optional | DataExporter (Excel) |
| rome | 1.0 | Optional | FeedReader |
| commons-fileupload | 1.3 | Optional | FileUpload |
| commons-io | 2.2 | Optional | FileUpload |
| atmosphere | 2.4.3 | Optional | PrimeFaces Push |
| barcode4j-light | 2.1 | Optional | Barcode |
| qrgen | 1.4 | Optional | QR Code support for Barcode |

* Listed versions are tested and known to be working with PrimeFaces, other versions of these dependencies may also work but not tested.

JSF Runtime

PrimeFaces supports JSF 2.0, 2.1 and 2.2 runtimes at the same time using feature detection and by not having compile time dependency to a specific version. As a result some features are only available depending on the runtime.

A good example for runtime compatibility is the passthrough attributes, a JSF 2.2 specific feature to display dynamic attributes. In following page, pass through attribute placeholder only gets rendered if the runtime is JSF 2.2.

```
<!DOCTYPE html>
<html xmlns="http://www.w3c.org/1999/xhtml"
      xmlns:h="http://java.sun.com/jsf/html"
      xmlns:p="http://primefaces.org/ui"
      xmlns:pt="http://xmlns.jcp.org/jsf/passthrough">

  <h:head>
  </h:head>

  <h:body>
    <p:inputText value="{bean.value}" pt:placeholder="Watermark here"/>
  </h:body>

</html>
```

2.3 Configuration

PrimeFaces does not require any mandatory configuration and follows configuration by exception pattern of JavaEE. Here is the list of all configuration options defined with a context-param such as;

```
<context-param>
  <param-name>primefaces.THEME</param-name>
  <param-value>aristo</param-value>
</context-param>
```

| Name | Default | Description |
|-------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| THEME | omega | Theme of the application. |
| mobile.THEME | null | Theme of the mobile application. |
| PUSH_SERVER_URL | null | Custom server url for PrimeFaces Push. |
| SUBMIT | full | Defines ajax submit mode, <i>full</i> or <i>partial</i> . |
| DIR | ltr | Defines orientation, <i>ltr</i> or <i>rtl</i> . |
| RESET_VALUES | false | When enabled, ajax updated inputs are reset. |
| SECRET | primefaces | Secret key to encrypt-decrypt value expressions exposed in rendering StreamedContents. |
| CLIENT_SIDE_VALIDATION | false | Controls client side validation. |
| UPLOADER | auto | Defines uploader mode; <i>auto</i> , <i>native</i> or <i>commons</i> . |
| TRANSFORM_METADATA | false | Transforms bean validation metadata to html attributes. |
| LEGACY_WIDGET_NAMESPACE | false | Enables window scope so that widgets can be accessed using <i>widgetVar.method()</i> in addition to default PF namespace approach like <i>PF('widgetVar').method()</i> . |
| FONT_AWESOME | false | Enabled font-awesome icons. |

2.4 Hello World

Once you have added the primefaces jar to your classpath, you need to add the PrimeFaces namespace to your page to begin using the components. Here is a simple page like test.xhtml;

```
<!DOCTYPE html>
<html xmlns="http://www.w3c.org/1999/xhtml"
      xmlns:h="http://xmlns.jcp.org/jsf/html"
      xmlns:p="http://primefaces.org/ui">

  <h:head></h:head>
  <h:body>
    <p:editor />
  </h:body>
</html>
```


When you run this page through Faces Servlet mapping e.g. *.jsf, you should see a rich text editor when you run the page with test.jsf.

3. Component Suite

3.1 AccordionPanel

AccordionPanel is a container component that displays content in stacked format.

▼ **Godfather Part I**



The story begins as Don Vito Corleone, the head of a New York Mafia family, oversees his daughter's wedding. His beloved son Michael has just come home from the war, but does not intend to become part of his father's business. Through Michael's life the nature of the family business becomes clear. The business of the family is just like the head of the family, kind and benevolent to those who give respect, but given to ruthless violence whenever anything stands against the good of the family.

▶ **Godfather Part II**

▶ **Godfather Part III**

Info

| | |
|------------------|-----------------------------------------------------------------------|
| Tag | accordionPanel |
| Component Class | org.primefaces.component.accordionpanel.Accordionpanel |
| Component Type | org.primefaces.component.AccordionPanel |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.AccordionPanelRenderer |
| Renderer Class | org.primefaces.component.accordionpanel.AccordionPanelRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | boolean | Boolean value to specify the rendering of the component. |
| binding | null | Object | An EL expression that maps to a server side UIComponent instance in a backing bean. |
| activeIndex | false | String | Index of the active tab or a comma separated string of indexes when multiple mode is on. |

| Name | Default | Type | Description |
|---------------|---------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| style | null | String | Inline style of the container element. |
| styleClass | null | String | Style class of the container element. |
| onTabChange | null | String | Client side callback to invoke when an inactive tab is clicked. |
| onTabShow | null | String | Client side callback to invoke when a tab gets activated. |
| onTabClose | null | String | Client side callback to invoke when a tab is closed. |
| dynamic | false | Boolean | Defines the toggle mode. |
| cache | true | Boolean | Defines if activating a dynamic tab should load the contents from server again. |
| value | null | List | List to iterate to display dynamic number of tabs. |
| var | null | String | Name of iterator to use in a dynamic number of tabs. |
| multiple | false | Boolean | Controls multiple selection. |
| dir | ltr | String | Defines text direction, valid values are <i>ltr</i> and <i>rtl</i> . |
| prependId | true | Boolean | AccordionPanel is a naming container thus prepends its id to its children by default, a false value turns this behavior off except for dynamic tabs. |
| widgetVar | null | String | Name of the client side widget. |
| tabindex | 0 | String | Position of the headers in the tabbing order. |
| tabController | null | MethodExpr | Server side listener to decide whether a tab change or tab close should be allowed. |

Getting Started with Accordion Panel

Accordion panel consists of one or more tabs and each tab can group any content. Titles can also be defined with “title” facet.

```
<p:accordionPanel>
  <p:tab title="First Tab Title">
    <h:outputText value= "Lorem"/>
    ...More content for first tab
  </p:tab>
  <p:tab title="Second Tab Title">
    <h:outputText value="Ipsum" />
  </p:tab>
  //any number of tabs
</p:accordionPanel>
```

Dynamic Content Loading

AccordionPanel supports lazy loading of tab content, when dynamic option is set true, only active tab contents will be rendered to the client side and clicking an inactive tab header will do an ajax request to load the tab contents.

This feature is useful to reduce bandwidth and speed up page loading time. By default activating a previously loaded dynamic tab does not initiate a request to load the contents again as tab is cached. To control this behavior use *cache* option.

```
<p:accordionPanel dynamic="true">
    //..tabs
</p:accordionPanel>
```

Client Side Callbacks

onTabChange is called before a tab is shown and *onTabShow* is called after. Both receive container element of the tab to show as the parameter.

```
<p:accordionPanel onTabChange="handleChange(panel)">
    //..tabs
</p:accordionPanel>

<script type="text/javascript">
    function handleChange(panel) {
        //panel: new tab content container
    }
</script>
```

Ajax Behavior Events

tabChange and *tabClose* are the ajax behavior events of accordion panel. An example with *tabChange* would be;

```
<p:accordionPanel>
    <p:ajax event="tabChange" listener="#{bean.onChange}" />
</p:accordionPanel>
```

```
public void onChange(TabChangeEvent event) {
    //Tab activeTab = event.getTab();
    //...
}
```

Your listener(if defined) will be invoked with an *org.primefaces.event.TabChangeEvent* instance that contains a reference to the new active tab and the accordion panel itself. Similarly *org.primefaces.event.TabCloseEvent* is passed to the listener of *tabClose* event when an active tab is closed.

Dynamic Number of Tabs

When the tabs to display are not static, use the built-in iteration feature similar to *ui:repeat*.


```
<p:accordionPanel value="#{bean.list}" var="listItem">
  <p:tab title="#{listItem.propertyA}">
    <h:outputText value= "#{listItem.propertyB}"/>
    ...More content
  </p:tab>
</p:accordionPanel>
```

Disabled Tabs

A tab can be disabled by setting disabled attribute to true.

```
<p:accordionPanel>
  <p:tab title="First Tab Title" disabled="true">
    <h:outputText value= "Lorem"/>
    ...More content for first tab
  </p:tab>
  <p:tab title="Second Tab Title">
    <h:outputText value="Ipsum" />
  </p:tab>
  //any number of tabs
</p:accordionPanel>
```

Multiple Selection

By default, only one tab at a time can be active, enable *multiple* mode to activate multiple tabs.

```
<p:accordionPanel multiple="true">
  //tabs
</p:accordionPanel>
```

TabController

TabController is a server side listener that can be utilized to decide if a client side tab change or tab close action is allowed. When one of these two events occur, an ajax call is made to invoke the tab controller, then the boolean return value of this controller is sent back to click to decide if the event should be performed. An example use case is disallowing tab change if current tab has invalid inputs.

Client Side API

Widget: *PrimeFaces.widget.AccordionPanel*

| Method | Params | Return Type | Description |
|-----------------|---------------------|-------------|-----------------------------------|
| select(index) | index: Index of tab | void | Activates tab with given index. |
| unselect(index) | index: Index of tab | void | Deactivates tab with given index. |

Skinning

AccordionPanel resides in a main container element which *style* and *styleClass* options apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Class | Applies |
|-----------------------|------------------------|
| .ui-accordion | Main container element |
| .ui-accordion-header | Tab header |
| .ui-accordion-content | Tab content |

3.2 AjaxBehavior

AjaxBehavior is an extension to standard f:ajax.

Info

| | |
|----------------|------------------------------------------------------------|
| Tag | ajax |
| Behavior Id | org.primefaces.component.AjaxBehavior |
| Behavior Class | org.primefaces.component.behavior.ajax.AjaxBehavior |

Attributes

| Name | Default | Type | Description |
|---------------------|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listener | null | Method Expr | Method to process in partial request. |
| immediate | false | boolean | Boolean value that determines the phaseId, when true actions are processed at apply_request_values, when false at invoke_application phase. |
| async | false | Boolean | When set to true, ajax requests are not queued. |
| process | null | String | Component(s) to process in partial request. |
| update | null | String | Component(s) to update with ajax. |
| onstart | null | String | Callback to execute before ajax request is begins. |
| oncomplete | null | String | Callback to execute when ajax request is completed. |
| onsuccess | null | String | Callback to execute when ajax request succeeds. |
| onerror | null | String | Callback to execute when ajax request fails. |
| global | true | Boolean | Global ajax requests are listened by ajaxStatus component, setting global to false will not trigger ajaxStatus. |
| delay | null | String | If less than <i>delay</i> milliseconds elapses between calls to <i>request()</i> only the most recent one is sent and all other requests are discarded. If this option is not specified, or if the value of <i>delay</i> is the literal string 'none' without the quotes, no delay is used. |
| partialSubmit | false | Boolean | Enables serialization of values belonging to the partially processed components only. |
| partialSubmitFilter | null | String | Selector to use when partial submit is on, default is ":input" to select all descendant inputs of a partially processed components. |
| disabled | false | Boolean | Disables ajax behavior. |

| Name | Default | Type | Description |
|------------------|---------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| event | null | String | Client side event to trigger ajax request. |
| resetValues | false | Boolean | If true, local values of input components to be updated within the ajax request would be reset. |
| ignoreAutoUpdate | false | Boolean | If true, components which autoUpdate="true" will not be updated for this request. If not specified, or the value is false, no such indication is made. |
| form | null | String | Form to serialize for an ajax request. Default is the enclosing form. |
| skipChildren | true | Boolean | Containers components like, datatable, panel, tabview skip their children if the request owner is them. For example, sort, page event of a datatable. As children are skipped, input values get lost, assume a case with a datatable and inputs components in a column. Sorting the column discards the changes and data is sorted according to original value. Setting skipChildren to false, enabled input values to update the value and sorting to be happened with user values. |

Getting Started with AjaxBehavior

AjaxBehavior is attached to the component to ajaxify.

```
<h:inputText value="#{bean.text}">
  <p:ajax update="out" />
</h:inputText>
<h:outputText id="out" value="#{bean.text}" />
```

In the example above, each time the input changes, an ajax request is sent to the server. When the response is received output text with id "out" is updated with value of the input.

Listener

In case you need to execute a method on a backing bean, define a listener;

```
<h:inputText id="counter">
  <p:ajax update="out" listener="#{counterBean.increment}"/>
</h:inputText>
<h:outputText id="out" value="#{counterBean.count}" />
```

```
public class CounterBean {  
  
    private int count;  
  
    //getter setter  
  
    public void increment() {  
        count++;  
    }  
}
```

Events

Default client side events are defined by components that support client behaviors, for input components it is *onchange* and for command components it is *onclick*. In order to override the dom event to trigger the ajax request use *event* option. In following example, ajax request is triggered when key is up on input field.

```
<h:inputText id="firstname" value="#{bean.text}">  
    <p:ajax update="out" event="keyup"/>  
</h:inputText>  
<h:outputText id="out" value="#{bean.text}" />
```

3.3 AjaxExceptionHandler

AjaxExceptionHandler is a utility component for the built-in ExceptionHandler.

Info

| | |
|------------------|---------------------------------------------------------------------------|
| Tag | ajaxExceptionHandler |
| Component Class | org.primefaces.component.ajaxexceptionhandler.AjaxExceptionHandler |
| Component Type | org.primefaces.component.AjaxExceptionHandler |
| Component Family | org.primefaces.component |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| onexception | null | String | Client side callback to execute after a exception with this type occurred. |
| update | null | String | Components to update after a exception with this type occurred. |
| type | null | String | Exception type to handle. |

Getting Started with AjaxExceptionHandler

Please find the detailed information about this component at ExceptionHandler section at Utilities chapter.

3.4 AjaxStatus

AjaxStatus is a global notifier for ajax requests.



Info

| | |
|------------------|---------------------------------------------------------------|
| Tag | ajaxStatus |
| Component Class | org.primefaces.component.ajaxstatus.AjaxStatus |
| Component Type | org.primefaces.component.AjaxStatus |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.AjaxStatusRenderer |
| Renderer Class | org.primefaces.component.ajaxstatus.AjaxStatusRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component. |
| binding | null | Object | An el expression that maps to a server side UICoMponent instance in a backing bean |
| onstart | null | String | Client side callback to execute after ajax requests start. |
| oncomplete | null | String | Client side callback to execute after ajax requests complete. |
| onsuccess | null | String | Client side callback to execute after ajax requests completed succesfully. |
| onerror | null | String | Client side callback to execute when an ajax request fails. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| widgetVar | null | String | Name of the client side widget. |

Getting Started with AjaxStatus

AjaxStatus uses facets to represent the request status. Most common used facets are *start* and *complete*. Start facet will be visible once ajax request begins and stay visible until it's completed. Once the ajax response is received and page is updated, start facet gets hidden and complete facet shows up.

```
<p:ajaxStatus>
  <f:facet name="start">
    <p:graphicImage value="ajaxloading.gif" />
  </f:facet>
  <f:facet name="complete">
    <h:outputText value="Done!" />
  </f:facet>
</p:ajaxStatus>
```

Events

Here is the full list of available event names;

default: Initially visible when page is loaded.

start: Before ajax request begins.

success: When ajax response is received without error.

error: When ajax response is received with an http error.

complete: When everything finishes.

```
<p:ajaxStatus>
  <f:facet name="error">
    <h:outputText value="Error" />
  </f:facet>

  <f:facet name="success">
    <h:outputText value="Success" />
  </f:facet>

  <f:facet name="default">
    <h:outputText value="Idle" />
  </f:facet>

  <f:facet name="start">
    <h:outputText value="Sending" />
  </f:facet>

  <f:facet name="complete">
    <h:outputText value="Done" />
  </f:facet>
</p:ajaxStatus>
```

Custom Events

Facets are the declarative way to use, if you'd like to implement advanced cases with scripting you can take advantage of on* callbacks which are the event handler counterparts of the facets.

```
<p:ajaxStatus onstart="alert('Start')" oncomplete="alert('End')"/>
```


A common usage of programmatic approach is to implement a custom status dialog;

```
<p:ajaxStatus onstart="PF('status').show()" oncomplete="PF('status').hide()"/>
  <p:dialog widgetVar="status" modal="true" closable="false">
    Please Wait
  </p:dialog>
```

Client Side API

Widget: *PrimeFaces.widget.AjaxStatus*

| Method | Params | Return Type | Description |
|----------------|-----------------------|-------------|-----------------------|
| trigger(event) | event: Name of event. | void | Triggers given event. |

Skinning

AjaxStatus is equipped with *style* and *styleClass*. Styling directly applies to a container element which contains the facets.

```
<p:ajaxStatus style="width:32px;height:32px" ... />
```

Tips

- Avoid updating *ajaxStatus* itself to prevent duplicate facet/callback bindings.
- Provide a fixed width/height to an inline *ajaxStatus* to prevent page layout from changing.
- Components like *commandButton* has an attribute (*global*) to control triggering of *AjaxStatus*.
- *AjaxStatus* also supports core JSF ajax requests of *f:ajax* as well.

3.5 AutoComplete

AutoComplete provides live suggestions while an input is being typed.



Info

| | |
|------------------|-------------------------------------------------------------------|
| Tag | autoComplete |
| Component Class | org.primefaces.component.autocomplete.AutoComplete |
| Component Type | org.primefaces.component.AutoComplete |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.AutoCompleteRenderer |
| Renderer Class | org.primefaces.component.autocomplete.AutoCompleteRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| value | null | Object | Value of the component than can be either an EL expression of a literal text. |
| converter | null | Object | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id. |

| Name | Default | Type | Description |
|---------------------|-----------|-------------|--------------------------------------------------------------------------------------------------------|
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required. |
| validator | null | Method Expr | A method expression that refers to a method validationg the input. |
| valueChangeListener | null | Method Expr | A method expression that refers to a method for handling a valuchangeevent. |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fails. |
| widgetVar | null | String | Name of the client side widget. |
| completeMethod | null | Method Expr | Method providing suggestions. |
| var | null | String | Name of the iterator used in pojo based suggestion. |
| itemLabel | null | String | Label of the item. |
| itemValue | null | String | Value of the item. |
| maxResults | unlimited | Integer | Maximum number of results to be displayed. |
| minQueryLength | true | Integer | Number of characters to be typed before starting to query. |
| queryDelay | 300 | Integer | Delay to wait in milliseconds before sending each query to the server. |
| forceSelection | false | Boolean | When enabled, autoComplete only accepts input from the selection list. |
| scrollHeight | null | Integer | Defines the height of the items viewport. |
| effect | null | String | Effect to use when showing/hiding suggestions. |
| effectDuration | 400 | Integer | Duration of effect in milliseconds. |
| dropdown | false | Boolean | Enables dropdown mode when set true. |
| panelStyle | null | String | Inline style of the items container element. |
| panelStyleClass | null | String | Style class of the items container element. |
| multiple | null | Boolean | When true, enables multiple selection. |
| accesskey | null | String | Access key that when pressed transfers focus to the input element. |
| alt | null | String | Alternate textual description of the input field. |

| Name | Default | Type | Description |
|--------------|---------|---------|---------------------------------------------------------------------------------------------------------------------|
| autocomplete | null | String | Controls browser autocomplete behavior. |
| dir | null | String | Direction indication for text that does not inherit directionality. Valid values are LTR and RTL. |
| disabled | false | Boolean | Disables input field |
| label | null | String | A localized user presentable name. |
| lang | null | String | Code describing the language used in the generated markup for this component. |
| maxlength | null | Integer | Maximum number of characters that may be entered in this field. |
| onblur | null | String | Client side callback to execute when input element loses focus. |
| onchange | null | String | Client side callback to execute when input element loses focus and its value has been modified since gaining focus. |
| onclick | null | String | Client side callback to execute when input element is clicked. |
| ondblclick | null | String | Client side callback to execute when input element is double clicked. |
| onfocus | null | String | Client side callback to execute when input element receives focus. |
| onkeydown | null | String | Client side callback to execute when a key is pressed down over input element. |
| onkeypress | null | String | Client side callback to execute when a key is pressed and released over input element. |
| onkeyup | null | String | Client side callback to execute when a key is released over input element. |
| onmousedown | null | String | Client side callback to execute when a pointer button is pressed down over input element |
| onmousemove | null | String | Client side callback to execute when a pointer button is moved within input element. |
| onmouseout | null | String | Client side callback to execute when a pointer button is moved away from input element. |
| onmouseover | null | String | Client side callback to execute when a pointer button is moved onto input element. |
| onmouseup | null | String | Client side callback to execute when a pointer button is released over input element. |
| onselect | null | String | Client side callback to execute when text within input element is selected by user. |

| Name | Default | Type | Description |
|-------------------|--------------|---------|------------------------------------------------------------------------------------------------------------------------------|
| placeholder | null | String | Specifies a short hint. |
| readonly | false | Boolean | Flag indicating that this component will prevent changes by the user. |
| size | null | Integer | Number of characters used to determine the width of the input element. |
| style | null | String | Inline style of the container element. |
| styleClass | null | String | Style class of the container element. |
| tabindex | null | Integer | Position of the input element in the tabbing order. |
| title | null | String | Advisory tooltip informaton. |
| itemtipMyPosition | left top | String | Position of itemtip corner relative to item. |
| itemtipAtPosition | right bottom | String | Position of item corner relative to itemtip. |
| cache | false | Boolean | When enabled autocomplete caches the searched result list. |
| cacheTimeout | 300000 | Integer | Timeout value for cached results. |
| emptyMessage | null | String | Text to display when there is no data to display. |
| appendTo | null | String | Appends the overlay to the element defined by search expression. Defaults to document body. |
| resultsMessage | null | String | Hint text for screen readers to provide information about the search results. |
| groupBy | null | Object | Value to group items in categories. |
| queryEvent | keyup | String | Event to initiate the query, valid options are "keyup" and "enter". |
| dropdownMode | blank | String | Specifies the behavior dropdown button. Default "blank" mode sends an empty string and "current" mode sends the input value. |
| autoHighlight | true | Boolean | Highlights the first suggested item automatically. |
| selectLimit | null | Integer | Limits the multiple selection. Default is unlimited. |
| inputStyle | null | String | Inline style of the input element. |
| inputStyleClass | null | String | Style class of the input element. |
| groupByTooltip | null | String | Tooltip to display on group headers. |
| my | left top | String | Position of panel with respect to input. |
| at | left bottom | String | Position of input with respect to panel. |
| active | true | Boolean | Defines if autocomplete functionality is enabled. |
| type | text | String | Input field type. |

| Name | Default | Type | Description |
|----------|---------|--------|-----------------------------------------------------------------------------|
| moreText | ... | String | The text shown in panel when the suggested list is greater than maxResults. |

Getting Started with AutoComplete

AutoComplete is an input component so it requires a value as usual. Suggestions are loaded by calling a server side completeMethod that takes a single string parameter which is the text entered.

```
<p:autoComplete value="#{bean.text}" completeMethod="#{bean.complete}" />
```

```
public class Bean {
    private String text;
    public List<String> complete(String query) {
        List<String> results = new ArrayList<String>();
        for (int i = 0; i < 10; i++)
            results.add(query + i);

        return results;
    }
    //getter setter
}
```

Pojo Support

Most of the time, instead of simple strings you would need work with your domain objects, autoComplete supports this common use case with the use of a converter and data iterator. Following example loads a list of players, itemLabel is the label displayed as a suggestion and itemValue is the submitted value. Note that when working with pojos, you need to plug-in your own converter.

```
<p:autoComplete value="#{playerBean.selectedPlayer}"
    completeMethod="#{playerBean.completePlayer}"
    var="player"
    itemLabel="#{player.name}"
    itemValue="#{player}"
    converter="playerConverter"/>
```

```
public class PlayerBean {

    private Player selectedPlayer;

    public Player getSelectedPlayer() {
        return selectedPlayer;
    }
    public void setSelectedPlayer(Player selectedPlayer) {
        this.selectedPlayer = selectedPlayer;
    }

    public List<Player> complete(String query) {
        List<Player> players = readPlayersFromDatasource(query);

        return players;
    }
}
```

```
public class Player {
    private String name;
    //getter setter
}
```

Limiting the Results

Number of results shown can be limited, by default there is no limit. When the suggestions exceed the number of results, a text defined by *moreText* is displayed to indicate this case. There is no default action when the *moreText* is clicked, you need to use *moreText* ajax behavior event to handle more results.

```
<p:autoComplete value="#{bean.text}"
                completeMethod="#{bean.complete}"
                maxResults="5" />
```

Minimum Query Length

By default queries are sent to the server and *completeMethod* is called as soon as users starts typing at the input text. This behavior is tuned using the *minQueryLength* attribute.

```
<p:autoComplete value="#{bean.text}" completeMethod="#{bean.complete}"
                minQueryLength="3" />
```

With this setting, suggestions will start when user types the 3rd character at the input field.

Query Delay

AutoComplete is optimized using *queryDelay* option, by default autoComplete waits for 300 milliseconds to query a suggestion request, if you'd like to tune the load balance, give a longer value. Following autoComplete waits for 1 second after user types an input.

```
<p:autoComplete value="#{bean.text}" completeMethod="#{bean.complete}"
                queryDelay="1000" />
```

Custom Content

AutoComplete can display custom content by nesting columns.

```
<p:autoComplete value="#{autoCompleteBean.selectedPlayer}"
  completeMethod="#{autoCompleteBean.completePlayer}"
  var="p" itemValue="#{p}" converter="player">

  <p:column>
    <p:graphicImage value="/images/barca/#{p.photo}" width="40" height="50"/>
  </p:column>

  <p:column>
    #{p.name} - #{p.number}
  </p:column>
</p:autoComplete>
```

Dropdown Mode

When dropdown mode is enabled, a dropdown button is displayed next to the input field. Depending on dropdownMode configuration, clicking this button will either do a search with an empty query or search with the current value in input.

```
<p:autoComplete value="#{bean.text}" completeMethod="#{bean.complete}"
  dropdown="true" />
```



Multiple Selection

AutoComplete supports multiple selection as well, to use this feature set multiple option to true and define a list as your backend model. Following example demonstrates multiple selection with custom content support.

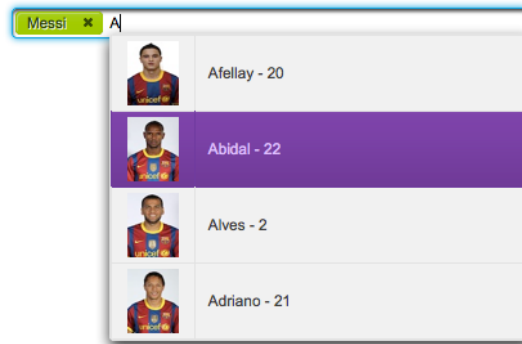
```
<p:autoComplete id="advanced" value="#{autoCompleteBean.selectedPlayers}"
  completeMethod="#{autoCompleteBean.completePlayer}"
  var="p" itemLabel="#{p.name}" itemValue="#{p}" converter="player"
  multiple="true">

  <p:column style="width:20%;text-align:center">
    <p:graphicImage value="/images/barca/#{p.photo}"/>
  </p:column>

  <p:column style="width:80%">
    #{p.name} - #{p.number}
  </p:column>
</p:autoComplete>
```



```
public class AutoCompleteBean {
    private List<Player> selectedPlayers;
    //...
}
```



Caching

Suggestions can be cached on client side so that the same query does not do a request which is likely to return same suggestions again. To enable this, set *cache* option to true. There is also a *cacheTimeout* option to configure how long it takes to clear a cache automatically.

```
<p:autoComplete value="#{bean.text}" completeMethod="#{bean.complete}"
    cache="true"/>
```

Ajax Behavior Events

Instead of waiting for user to submit the form manually to process the selected item, you can enable instant ajax selection by using the *itemSelect* ajax behavior. Example below demonstrates how to display a message about the selected item instantly.

```
<p:autoComplete value="#{bean.text}" completeMethod="#{bean.complete}">
    <p:ajax event="itemSelect" listener="bean.handleSelect" update="msg" />
</p:autoComplete>

<p:messages id="msg" />
```

```
public class Bean {
    public void handleSelect(SelectEvent event) {
        Object item = event.getObject();
        FacesMessage msg = new FacesMessage("Selected", "Item:" + item);
    }
    //...
}
```

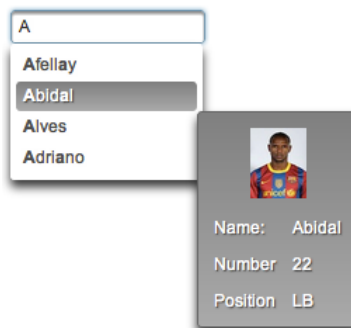
Your listener(if defined) will be invoked with an *org.primefaces.event.Select* instance that contains a reference to the selected item. Note that autoComplete also supports events inherited from regular input text such as blur, focus, mouseover in addition to *itemSelect*. Similarly, *itemUnselect* event is

provided for multiple autocomplete when an item is removed by clicking the remove icon. In this case *org.primefaces.event.Unselect* instance is passed to a listener if defined.

| Event | Listener Parameter | Fired |
|--------------|------------------------------------|---------------------------|
| itemSelect | org.primefaces.event.SelectEvent | On item selection. |
| itemUnselect | org.primefaces.event.UnselectEvent | On item unselection. |
| query | - | On query. |
| moreText | - | When moreText is clicked. |

ItemTip

Itemtip is an advanced built-in tooltip when mouse is over on suggested items. Content of the tooltip is defined via the *itemtip* facet.



```

<p:autoComplete value="#{autocompleteBean.selectedPlayer1}" id="basicPojo"
  completeMethod="#{autocompleteBean.completePlayer}"
  var="p" itemLabel="#{p.name}" itemValue="#{p}" converter="player">
  <f:facet name="itemtip">
    <h:panelGrid columns="2" cellpadding="5">
      <f:facet name="header">
        <p:graphicImage value="/images/barca/#{p.photo}" />
      </f:facet>

      <h:outputText value="Name: " />
      <h:outputText id="modelName" value="#{p.name}" />

      <h:outputText value="Number " />
      <h:outputText id="year" value="#{p.number}" />

      <h:outputText value="Position " />
      <h:outputText value="#{p.position}" />
    </h:panelGrid>
  </f:facet>
</p:autoComplete>

```

Client Side API

Widget: *PrimeFaces.widget.AutoComplete*

| Method | Params | Return Type | Description |
|---------------|---------------------------|-------------|-------------------------------------|
| search(value) | value: keyword for search | void | Initiates a search with given value |
| close() | - | void | Hides suggested items menu |
| disable() | - | void | Disables the input field |
| enable() | - | void | Enables the input field |
| deactivate() | - | void | Deactivates search behavior |
| activate() | - | void | Activates search behavior |

Skinning

Following is the list of structural style classes;

| Class | Applies |
|------------------------|----------------------------------|
| .ui-autocomplete | Container element. |
| .ui-autocomplete-input | Input field. |
| .ui-autocomplete-panel | Container of suggestions list. |
| .ui-autocomplete-items | List of items |
| .ui-autocomplete-item | Each item in the list. |
| .ui-autocomplete-query | Highlighted part in suggestions. |

As skinning style classes are global, see the main theming section for more information.

Tips

- Do not forget to use a converter when working with pojos.
- Enable forceSelection if you would like to accept values only from suggested list.
- Increase query delay to avoid unnecessary load to server as a result of user typing fast.
- Use emptyMessage option to provide feedback to the users that there are no suggestions.
- Enable caching to avoid duplicate queries.

3.6 Barcode

Barcode component is used to display various barcode formats.



Info

| | |
|------------------|---------------------------------------------------------|
| Tag | barcode |
| Component Class | org.primefaces.component.barcode.Barcode |
| Component Type | org.primefaces.component.Barcode |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.BarcodeRenderer |
| Renderer Class | org.primefaces.component.barcode.BarcodeRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Binary data to stream or context relative path. |
| type | null | String | Type of the barcode. |
| cache | true | Boolean | Controls browser caching mode of the resources. |
| format | svg | String | Format of the generated barcode, valid values are "svg" (default) and "png". |
| orientation | 0 | Integer | Orientation in terms of angle. (0, 90, 180, 270) |
| alt | null | String | Alternate text for the image |
| url | null | String | Alias to value attribute |

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------|
| width | null | String | Width of the image |
| height | null | String | Height of the image |
| title | null | String | Title of the image |
| dir | null | String | Direction of the text displayed |
| lang | null | String | Language code |
| ismap | false | Boolean | Specifies to use a server-side image map |
| usemap | null | String | Name of the client side map |
| style | null | String | Style of the image |
| styleClass | null | String | Style class of the image |
| onclick | null | String | onclick dom event handler |
| ondblclick | null | String | ondblclick dom event handler |
| onkeydown | null | String | onkeydown dom event handler |
| onkeypress | null | String | onkeypress dom event handler |
| onkeyup | null | String | onkeyup dom event handler |
| onmousedown | null | String | onmousedown dom event handler |
| onmousemove | null | String | onmousemove dom event handler |
| onmouseout | null | String | onmouseout dom event handler |
| onmouseover | null | String | onmouseover dom event handler |
| onmouseup | null | String | onmouseup dom event handler |

Getting started with Barcode

Barcode type should be provided along with the value to display. Supported formats are;

- int2of5
- codabar
- code39
- code128
- ean8
- ean13
- upca
- postnet
- pdf417
- datamatrix
- qr

```
<p:barcode value="0123456789" type="int2of5" />
```

Value can also be retrieved from a backend value.

```
<p:barcode value="#{bean.barcodeValue}" type="int2of5" />
```

Format

Default display format is *svg* and other possible option is *png*. In case the client browser does not support *svg* e.g. IE8, barcode automatically chooses *png* format.

```
<p:barcode value="#{bean.barcodeValue}" type="int2of5" format="png" />
```

Orientation

In order to change the orientation, choose the angle from the 4 pre-defined values.

```
<p:barcode value="#{bean.barcodeValue}" type="int2of5" orientation="90"/>
```

Dependencies

Barcode component uses **barcode4j** library underneath except QR code support, which is handled by **qrgen** library. Following versions are supported officially.

```
<dependency>
  <groupId>net.glxn</groupId>
  <artifactId>qrgen</artifactId>
  <version>1.4</version>
</dependency>

<dependency>
  <groupId>net.sf.barcode4j</groupId>
  <artifactId>barcode4j-light</artifactId>
  <version>2.1</version>
</dependency>
```

* barcode4j 2.1 does not exist in maven central repository so manual installation is necessary for maven users.

3.7 BlockUI

BlockUI is used to block interactivity of JSF components with optional ajax integration.

| Ajax Pagination | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------|--------|
| <div style="text-align: center;"> ⏪ ⏩ 1 2 3 4 5 ⏪ ⏩ </div> | | | |
| Model | Year | Manufacturer | Color |
| 9816c1c9 | 2001 | Opel | Yellow |
| 43fb87ae | 1993 | Renault | White |
| e2cb6c1a | 1998 | Mercedes | White |
| aac257b5 | 1984 | | Green |
| 7aa229b6 | 1990 | | White |
| 65d3dc85 | 1960 | BMW | Silver |
| 61752724 | 2009 | Opel | Red |
| c620f632 | 1983 | Volkswagen | White |
| 3066aea8 | 1998 | Audi | Black |
| 3fd09492 | 1991 | Renault | Black |
| <div style="text-align: center;"> ⏪ ⏩ 1 2 3 4 5 ⏪ ⏩ </div> | | | |

Info

| | |
|------------------|---------------------------------------------------------|
| Tag | blockUI |
| Component Class | org.primefaces.component.blockui.BlockUI |
| Component Type | org.primefaces.component.BlockUI |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.BlockUIRenderer |
| Renderer Class | org.primefaces.component.blockui.BlockUIRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|---------|------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component. |
| binding | null | Object | An el expression that maps to a server side UICoMponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| trigger | null | String | Identifier of the component(s) to bind. |

| Name | Default | Type | Description |
|------------|---------|---------|---------------------------------------------------------|
| block | null | String | Search expression for block targets. |
| blocked | false | Boolean | Blocks the UI by default when enabled. |
| animate | true | Boolean | When disabled, displays block without animation effect. |
| styleClass | null | String | Style class of the component. |

Getting Started with BlockUI

BlockUI requires *trigger* and *block* attributes to be defined. With the special ajax integration, ajax requests whose source are the trigger components will block the ui onstart and unblock oncomplete. Example below blocks the ui of the panel when saveBtn is clicked and unblock when ajax response is received.

```
<p:panel id="pnl" header="My Panel">
  //content

  <p:commandButton id="saveBtn" value="Save" />
</p:panel>

<p:blockUI block="pnl" trigger="saveBtn" />
```

Multiple triggers are defined as a comma separated list. Multiple block targets are also possible using a search expression.

```
<p:blockUI block="pnl" trigger="saveBtn,deleteBtn,updateBtn" />
```

Custom Content

In order to display custom content like a loading text and animation, place the content inside the blockUI.

```
<p:dataTable id="dataTable" var="car" value="#{tableBean.cars}"
  paginator="true" rows="10">
  <p:column>
    <f:facet name="header">
      <h:outputText value="Model" />
    </f:facet>
    <h:outputText value="#{car.model}" />
  </p:column>

  //more columns
</p:dataTable>

<p:blockUI block="dataTable" trigger="dataTable">
  LOADING<br />
  <p:graphicImage value="/images/ajax-loader.gif"/>
</p:blockUI>
```


Client Side API

Widget: *PrimeFaces.widget.BlockUI*

| Method | Params | Return Type | Description |
|--------|--------|-------------|-----------------|
| show() | - | void | Blocks the UI. |
| hide() | - | void | Unblocks the UI |

Skinning

Following is the list of structural style classes;

| Class | Applies |
|---------------------|-------------------------------|
| .ui-blockui | Container element. |
| .ui-blockui-content | Container for custom content. |

As skinning style classes are global, see the main theming section for more information.

Tips

- BlockUI does not support absolute or fixed positioned components. e.g. dialog.

3.8 BreadCrumb

Breadcrumb is a navigation component that provides contextual information about page hierarchy in the workflow.

🏠 > Sports > Football > Countries > Spain > F.C. Barcelona > Squad > Lionel Messi

Info

| | |
|------------------|---------------------------------------------------------------|
| Tag | breadCrumb |
| Component Class | org.primefaces.component.breadcrumb.BreadCrumb |
| Component Type | org.primefaces.component.BreadCrumb |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.BreadCrumbRenderer |
| Renderer Class | org.primefaces.component.breadcrumb.BreadCrumbRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|-----------|------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component. |
| binding | null | Object | An el expression that maps to a server side UICoMponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| model | null | MenuModel | MenuModel instance to create menus programmatically |
| style | null | String | Style of main container element. |
| styleClass | null | String | Style class of main container |
| homeDisplay | icon | String | Defines display mode of root link, valid values are "icon" default and "text". |

Getting Started with BreadCrumb

Steps are defined as child menuitem components in breadcrumb.

```
<p:breadcrumb>
  <p:menuitem label="Categories" url="#" />
  <p:menuitem label="Sports" url="#" />
  //more menuitems
</p:breadcrumb>
```

Dynamic Menus

Menus can be created programmatically as well, see the dynamic menus part in menu component section for more information and an example.

Options Facet

In order to place custom content inside breadcrumb, options facet is provided. Options facet content is aligned right by default.

Skinning

Breadcrumb resides in a container element that *style* and *styleClass* options apply. Following is the list of structural style classes;

| Style Class | Applies |
|-----------------------------------|------------------------------------|
| .ui-breadcrumb | Main breadcrumb container element. |
| .ui-breadcrumb .ui-menu-item-link | Each menuitem. |
| .ui-breadcrumb .ui-menu-item-text | Each menuitem label. |
| .ui-breadcrumb-chevron | Seperator of menuitems. |

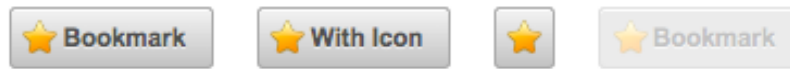
As skinning style classes are global, see the main theming section for more information.

Tips

- If there is a dynamic flow, use model option instead of creating declarative p:menuitem components and bind your MenuModel representing the state of the flow.
- Breadcrumb can do ajax/non-ajax action requests as well since p:menuitem has this option. In this case, breadcrumb must be nested in a form.
- url option is the key for a menuitem, if it is defined, it will work as a simple link. If you'd like to use menuitem to execute command with or without ajax, do not define the url option.

3.9 Button

Button is an extension to the standard h:button component with skinning capabilities.



Info

| | |
|------------------|-------------------------------------------------------|
| Tag | button |
| Component Class | org.primefaces.component.button.Button |
| Component Type | org.primefaces.component.Button |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ButtonRenderer |
| Renderer Class | org.primefaces.component.button.ButtonRenderer |

Attributes

| Name | Default | Type | Description |
|-------------------|---------|---------|---------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| widgetVar | null | String | Name of the client side widget. |
| value | null | Object | Value of the component than can be either an EL expression of a literal text. |
| outcome | null | String | Used to resolve a navigation case. |
| includeViewParams | false | Boolean | Whether to include page parameters in target URI |
| fragment | null | String | Identifier of the target page which should be scrolled to. |
| disabled | false | Boolean | Disables button. |
| accesskey | null | String | Access key that when pressed transfers focus to button. |
| alt | null | String | Alternate textual description. |
| dir | null | String | Direction indication for text that does not inherit directionality. Valid values are LTR and RTL. |
| image | null | String | Style class for the button icon. (deprecated: use icon) |
| lang | null | String | Code describing the language used in the generated markup |

| Name | Default | Type | Description |
|---------------------|---------|---------|--------------------------------------------------------------------------------------------------------------|
| | | | for this component. |
| onblur | null | String | Client side callback to execute when button loses focus. |
| onchange | null | String | Client side callback to execute when button loses focus and its value has been modified since gaining focus. |
| onclick | null | String | Client side callback to execute when button is clicked. |
| ondblclick | null | String | Client side callback to execute when button is double clicked. |
| onfocus | null | String | Client side callback to execute when button receives focus. |
| onkeydown | null | String | Client side callback to execute when a key is pressed down over button. |
| onkeypress | null | String | Client side callback to execute when a key is pressed and released over button. |
| onkeyup | null | String | Client side callback to execute when a key is released over button. |
| onmousedown | null | String | Client side callback to execute when a pointer button is pressed down over button. |
| onmousemove | null | String | Client side callback to execute when a pointer button is moved within button |
| onmouseout | null | String | Client side callback to execute when a pointer button is moved away from button. |
| onmouseover | null | String | Client side callback to execute when a pointer button is moved onto button. |
| onmouseup | null | String | Client side callback to execute when a pointer button is released over button. |
| style | null | String | Inline style of the button. |
| styleClass | null | String | Style class of the button. |
| tabindex | null | Integer | Position in the tabbing order. |
| title | null | String | Advisory tooltip informaton. |
| href | null | String | Resource to link directly to implement anchor behavior. |
| icon | null | String | Icon of the button. |
| iconPos | left | String | Position of the button icon. |
| target | _self | String | The window target. |
| escape | true | Boolean | Defines whether label would be escaped or not. |
| inline | false | String | Displays as inline instead of 100% width, mobile only. |
| disableClientWindow | false | Boolean | Disable appending the ClientWindow |

| Name | Default | Type | Description |
|------|---------|------|-----------------------------------|
| | | | on the rendering of this element. |

Getting Started with Button

`p:button` usage is same as standard `h:button`, an outcome is necessary to navigate using GET requests. Assume you are at `source.xhtml` and need to navigate `target.xhtml`.

```
<p:button outcome="target" value="Navigate"/>
```

Parameters

Parameters in URI are defined with nested `<f:param />` tags.

```
<p:button outcome="target" value="Navigate">
  <f:param name="id" value="10" />
</p:button>
```

Icons

Icons for button are defined via `css` and `icon` attribute, if you use `title` instead of `value`, only icon will be displayed and title text will be displayed as tooltip on mouseover. You can also use icons from PrimeFaces themes such `ui-icon-check`.

```
<p:button outcome="target" icon="star" value="With Icon"/>
<p:button outcome="target" icon="star" title="With Icon"/>
```

```
.star {
  background-image: url("images/star.png");
}
```

Skinning

Button renders a `button` tag which `style` and `styleClass` applies. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|-----------------------------------|--------------------------------------|
| <code>.ui-button</code> | Button element |
| <code>.ui-button-text-only</code> | Button element when icon is not used |
| <code>.ui-button-text</code> | Label of button |

3.10 Cache

Cache component is used to reduce page load time by caching the content after initial rendering.

Info

| | |
|------------------|-------------------------------------------------------|
| Tag | cache |
| Component Class | org.primefaces.component.cache.UICache |
| Component Type | org.primefaces.component.Cache |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.UICacheRenderer |
| Renderer Class | org.primefaces.component.cache.UICacheRenderer |

Attributes

| Name | Default | Type | Description |
|---------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| disabled | false | Boolean | Disables caching. |
| region | View Id | String | Unique id of the cache region, defaults to view id. |
| key | null | String | Unique id of the cache entry in region, defaults to client id of component. |
| processEvents | false | Boolean | When enabled, lifecycle events such as button actions are executed. |

Getting Started with Cache

A cache store is required to use the cache component, two different providers are supported as cache implementation; EHCACHE and Hazelcast. Provider is configured via a context-param.

```
<context-param>
  <param-name>primefaces.CACHE_PROVIDER</param-name>
  <param-value>org.primefaces.cache.EHCacheProvider</param-value>
</context-param>
```

Here is a sample ehcache.xml to configure cache regions, there are two regions in this configuration.

```
<?xml version="1.0" encoding="UTF-8"?>
<ehcache xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="ehcache.xsd"
  updateCheck="true" monitoring="autodetect"
  dynamicConfig="true">
  <diskStore path="java.io.tmpdir"/>
  <defaultCache
    maxEntriesLocalHeap="10000"
    eternal="false"
    timeToIdleSeconds="120"
    timeToLiveSeconds="120"
    diskSpoolBufferSizeMB="30"
    maxEntriesLocalDisk="10000000"
    diskExpiryThreadIntervalSeconds="120"
    memoryStoreEvictionPolicy="LRU">
    <persistence strategy="localTempSwap"/>
  </defaultCache>
  <cache name="testcache"
    maxEntriesLocalHeap="10000"
    eternal="false"
    timeToIdleSeconds="120"
    timeToLiveSeconds="120"
    diskSpoolBufferSizeMB="30"
    maxEntriesLocalDisk="10000000"
    diskExpiryThreadIntervalSeconds="120"
    memoryStoreEvictionPolicy="LRU">
    <persistence strategy="localTempSwap"/>
  </cache>
```

After the configuration, at UI side, the cached part needs to be wrapped inside the `p:cache` component.

```
<p:cache>
  //content to cache
</p:cache>
```

Once the page is loaded initially, content inside `p:cache` component is cached inside the cache region of the cache provider. Postbacks on the same page or reopening the page retrieve the output from cache instead of rendering the content regularly.

Cache Provider API

CacheProvider can be accessed via;

```
RequestContext.getCurrentInstance().getApplicationContext().getCacheProvider()
```

For example using this API, all cache regions can be cleaned using `clear()` method. Refer to javadoc of CacheProvider for the full list of available methods.

3.11 Calendar

Calendar is an input component used to select a date featuring display modes, paging, localization, ajax selection and more.



Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | calendar |
| Component Class | org.primefaces.component.calendar.Calendar |
| Component Type | org.primefaces.component.Calendar |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.CalendarRenderer |
| Renderer Class | org.primefaces.component.calendar.CalendarRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | java.util.Date | Value of the component |
| converter | null | Converter/String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |

| Name | Default | Type | Description |
|---------------------|------------|----------------|-----------------------------------------------------------------------------------------------------------------------------|
| validator | null | Method Expr | A method expression that refers to a method validating the input |
| valueChangeListener | null | Method Expr | A method expression that refers to a method for handling a valuechange event |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fails. |
| widgetVar | null | String | Name of the client side widget. |
| mindate | null | Date or String | Sets calendar's minimum visible date |
| maxdate | null | Date or String | Sets calendar's maximum visible date |
| pages | 1 | Integer | Enables multiple page rendering. |
| disabled | false | Boolean | Disables the calendar when set to true. |
| mode | popup | String | Defines how the calendar will be displayed. |
| pattern | MM/dd/yyyy | String | DateFormat pattern for localization |
| locale | null | Object | Locale to be used for labels and conversion. |
| navigator | false | Boolean | Enables month/year navigator |
| timeZone | null | Time Zone | String or a java.util.TimeZone instance to specify the timezone used for date conversion, defaults to TimeZone.getDefault() |
| readonlyInput | false | Boolean | Makes input text of a popup calendar readonly. |
| showButtonPanel | false | Boolean | Visibility of button panel containing today and done buttons. |
| effect | null | String | Effect to use when displaying and showing the popup calendar. |
| effectDuration | normal | String | Duration of the effect. |
| showOn | both | String | Client side event that displays the popup calendar. |
| showWeek | false | Boolean | Displays the week number next to each week. |
| disabledWeekends | false | Boolean | Disables weekend columns. |
| showOtherMonths | false | Boolean | Displays days belonging to other months. |
| selectOtherMonths | false | Boolean | Enables selection of days belonging to other months. |
| yearRange | null | String | Year range for the navigator, default "c-10:c+10" |

| Name | Default | Type | Description |
|--------------|---------|---------|---------------------------------------------------------------------------------------------------------------------|
| timeOnly | false | Boolean | Shows only timepicker without date. |
| stepHour | 1 | Integer | Hour steps. |
| stepMinute | 1 | Integer | Minute steps. |
| stepSecond | 1 | Integer | Second steps. |
| minHour | 0 | Integer | Minimum boundary for hour selection. |
| maxHour | 23 | Integer | Maximum boundary for hour selection. |
| minMinute | 0 | Integer | Minimum boundary for minute selection. |
| maxMinute | 59 | Integer | Maximum boundary for hour selection. |
| minSecond | 0 | Integer | Minimum boundary for second selection. |
| maxSecond | 59 | Integer | Maximum boundary for second selection. |
| pagedate | null | Object | Initial date to display if value is null. |
| accesskey | null | String | Access key that when pressed transfers focus to the input element. |
| alt | null | String | Alternate textual description of the input field. |
| autocomplete | null | String | Controls browser autocomplete behavior. |
| dir | null | String | Direction indication for text that does not inherit directionality. Valid values are LTR and RTL. |
| label | null | String | A localized user presentable name. |
| lang | null | String | Code describing the language used in the generated markup for this component. |
| maxlength | null | Integer | Maximum number of characters that may be entered in this field. |
| onblur | null | String | Client side callback to execute when input element loses focus. |
| onchange | null | String | Client side callback to execute when input element loses focus and its value has been modified since gaining focus. |
| onclick | null | String | Client side callback to execute onclick event. |
| ondblclick | null | String | Client side callback to execute when input element is double clicked. |
| onfocus | null | String | Client side callback to execute when input element receives focus. |
| onkeydown | null | String | Client side callback to execute when a key is pressed down over input element. |
| onkeypress | null | String | Client side callback to execute when a key is |

| Name | Default | Type | Description |
|-----------------|---------|---------|--------------------------------------------------------------------------------------------------------|
| | | | pressed and released over input element. |
| onkeyup | null | String | Client side callback to execute when a key is released over input element. |
| onmousedown | null | String | Client side callback to execute when a pointer button is pressed down over input element |
| onmousemove | null | String | Client side callback to execute when a pointer button is moved within input element. |
| onmouseout | null | String | Client side callback to execute when a pointer button is moved away from input element. |
| onmouseover | null | String | Client side callback to execute when a pointer button is moved onto input element. |
| onmouseup | null | String | Client side callback to execute when a pointer button is released over input element. |
| onselect | null | String | Client side callback to execute when text within input element is selected by user. |
| placeholder | null | String | Specifies a short hint. |
| readonly | false | Boolean | Flag indicating that this component will prevent changes by the user. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| size | null | Integer | Number of characters used to determine the width of the input element. |
| tabindex | null | Integer | Position of the input element in the tabbing order. |
| title | null | String | Advisory tooltip informaton. |
| beforeShowDay | null | String | Client side callback to execute before displaying a date, used to customize date display. |
| mask | null | String | Applies a mask using the pattern. |
| timeControlType | slider | String | Defines the type of element to use for time picker, valid values are "slider" and "select". |
| beforeShow | null | String | Callback to execute before displaying calendar, element and calendar instance are passed as parameters |
| maskSlotChar | null | String | Placeholder in mask template. |
| maskAutoClear | true | Boolean | Clears the field on blur when incomplete input is entered |

| Name | Default | Type | Description |
|-------------------|---------|---------|---------------------------------------------------------------------------|
| timeControlObject | null | String | Client side object to use in custom timeControlType. |
| timeInput | false | Boolean | Allows direct input in time field. |
| showHour | null | String | Whether to show the hour control. |
| shiwMinute | null | String | Whether to show the minute control. |
| showSecond | null | String | Whether to show the second control. |
| showMillisec | null | String | Whether to show the millisec control |
| showTodayButton | true | Boolean | Whether to show the "Current Date" button if showButtonPanel is rendered. |

Getting Started with Calendar

Value of the calendar should be a java.util.Date.

```
<p:calendar value="#{dateBean.date}"/>
```

```
public class DateBean {
    private Date date;
    //Getter and Setter
}
```

Display Modes

Calendar has two main display modes, *popup* (default) and *inline*.

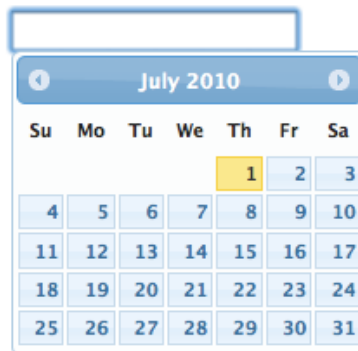
Inline

```
<p:calendar value="#{dateBean.date}" mode="inline" />
```



Popup

```
<p:calendar value="#{dateBean.date}" mode="popup" />
```

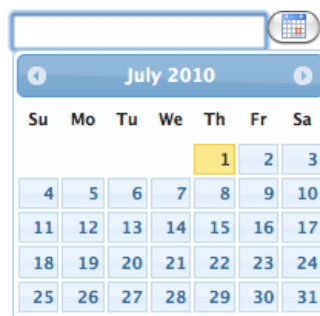


showOn option defines the client side event to display the calendar. Valid values are;

- *focus*: When input field receives focus
- *button*: When popup button is clicked
- *both*: Both *focus* and *button* cases

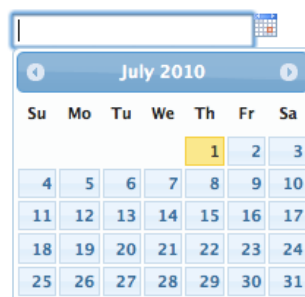
Popup Button

```
<p:calendar value="#{dateBean.date}" mode="popup" showOn="button" />
```



Popup Icon Only

```
<p:calendar value="#{dateBean.date}" mode="popup"
  showOn="button" popupIconOnly="true" />
```



Paging

Calendar can also be rendered in multiple pages where each page corresponds to one month. This feature is tuned with the *pages* attribute.

```
<p:calendar value="#{dateController.date}" pages="3"/>
```



Localization

By default locale information is retrieved from the view's locale and can be overridden by the locale attribute. Locale attribute can take a locale key as a String or a `java.util.Locale` instance. Default language of labels are English and you need to add the necessary translations to your page manually as PrimeFaces does not include language translations. PrimeFaces Wiki Page for PrimeFacesLocales is a community driven page where you may find the translations you need. Please contribute to this wiki with your own translations.

<https://code.google.com/p/primefaces/wiki/PrimeFacesLocales>

Translation is a simple javascript object, we suggest adding the code to a javascript file and include in your application. Following is a Turkish calendar.

```
<h:outputScript name="path_to_your_translations.js" />
<p:calendar value="#{dateController.date}" locale="tr" navigator="true"
            showButtonPanel="true"/>
```



To override calculated pattern from locale, use the pattern option;

```
<p:calendar value="#{dateController.date1}" pattern="dd.MM.yyyy"/>
<p:calendar value="#{dateController.date2}" pattern="yy, M, d"/>
<p:calendar value="#{dateController.date3}" pattern="EEE, dd MMM, yyyy"/>
```

dd.MM.yyyy

06.07.2010

yy, M, d

10, 7, 13

EEE, dd MMM, yyyy

Fri, 23 Jul, 2010

Effects

Various effects can be used when showing and hiding the popup calendar, options are; show, slideDown, fadeIn, blind, bounce, clip, drop, fold and slide.

Ajax Behavior Events

Calendar provides a *dateSelect* ajax behavior event to execute an instant ajax selection whenever a date is selected. If you define a method as a listener, it will be invoked by passing an *org.primefaces.event.SelectEvent* instance.

```
<p:calendar value="#{calendarBean.date}">
    <p:ajax event="dateSelect" listener="#{bean.handleDateSelect}" update="msg" />
</p:calendar>

<p:messages id="msg" />
```

```
public void handleDateSelect(SelectEvent event) {
    Date date = (Date) event.getObject();
    //Add facesmessage
}
```

In popup mode, calendar also supports regular ajax behavior events like blur, keyup and more.

Another handy event is the *viewChange* that is fired when month and year changes. An instance of *org.primefaces.event.DateViewChangeEvent* is passed to the event listener providing the current month and year information.

Date Ranges

Using *mindate* and *maxdate* options, selectable dates can be restricted. Values for these attributes can either be a string or a *java.util.Date*.

```
<p:calendar value="#{dateBean.date}" mode="inline"
    mindate="07/10/2010" maxdate="07/15/2010"/>
```



Navigator

Navigator is an easy way to jump between months/years quickly.

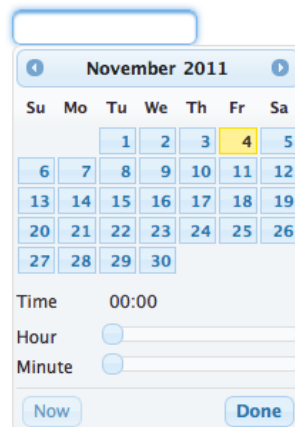
```
<p:calendar value="#{dateBean.date}" mode="inline" navigator="true" />
```



TimePicker

TimePicker functionality is enabled by adding time format to your pattern.

```
<p:calendar value="#{dateBean.date}" pattern="MM/dd/yyyy HH:mm" />
```



Advanced Customization

Use `beforeShowDay` javascript callback to customize the look of each date. The function returns an array with two values, first one is flag to indicate if date would be displayed as enabled and second parameter is the optional style class to add to date cell. Following example disabled tuesdays and fridays.

```
<p:calendar value="#{dateBean.date}" beforeShowDay="tuesdaysAndFridaysOnly" />
```

```
Function tuesdaysAndFridaysDisabled(date) {
    var day = date.getDay();
    return [(day != 2 && day != 5), '']
}
```

Mask

Calendar has a built-in mask feature similar to the `InputMask` component. Set `mask` option to true to enable mask support.

Client Side API

Widget: *PrimeFaces.widget.Calendar*

| Method | Params | Return Type | Description |
|---------------|-----------------------|-------------|----------------------|
| getDate() | - | Date | Return selected date |
| setDate(date) | date: Date to display | void | Sets display date |
| disable() | - | void | Disables calendar |
| enable() | - | void | Enables calendar |

Skinning

Calendar resides in a container element which *style* and *styleClass* options apply.

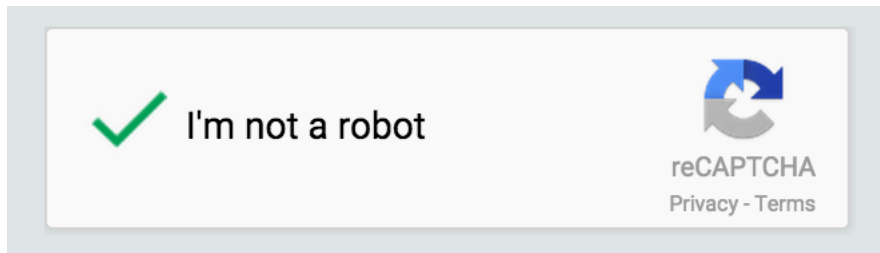
Following is the list of structural style classes;

| Style Class | Applies |
|----------------------------|---------------------------------|
| .ui-datepicker | Main container |
| .ui-datepicker-header | Header container |
| .ui-datepicker-prev | Previous month navigator |
| .ui-datepicker-next | Next month navigator |
| .ui-datepicker-title | Title |
| .ui-datepicker-month | Month display |
| .ui-datepicker-table | Date table |
| .ui-datepicker-week-end | Label of weekends |
| .ui-datepicker-other-month | Dates belonging to other months |
| .ui-datepicker td | Each cell date |
| .ui-datepicker-buttonpane | Button panel |
| .ui-datepicker-current | Today button |
| .ui-datepicker-close | Close button |

As skinning style classes are global, see the main theming section for more information.

3.12 Captcha

Captcha is a form validation component based on Recaptcha API V2.



Info

| | |
|------------------|---------------------------------------------------------|
| Tag | captcha |
| Component Class | org.primefaces.component.captcha.Captcha |
| Component Type | org.primefaces.component.Captcha |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.CaptchaRenderer |
| Renderer Class | org.primefaces.component.captcha.CaptchaRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| value | null | Object | Value of the component than can be either an EL expression of a literal text. |
| converter | null | Converter/String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id. |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required. |

| Name | Default | Type | Description |
|---------------------|---------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| validator | null | MethodExpr | A method binding expression that refers to a method validationg the input. |
| valueChangeListener | null | ValueChange Listener | A method binding expression that refers to a method for handling a valuchangeevent. |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| publicKey | null | String | Public recaptcha key for a specific domain (deprecated) |
| theme | red | String | Theme of the captcha. |
| language | en | String | Key of the supported languages. |
| tabindex | null | Integer | Position of the input element in the tabbing order. |
| label | null | String | User presentable field name. |
| callback | null | String | The name of your callback function to be executed when the user submits a successful CAPTCHA response. The user's response, g-recaptcha-response, will be the input for your callback function. |
| expired | null | String | Callback executed when the captcha response expires and the user needs to solve a new captcha. |

Getting Started with Captcha

Catpcha is implemented as an input component with a built-in validator that is integrated with reCaptcha. First thing to do is to sign up to reCaptcha to get public&private keys. Once you have the keys for your domain, add them to web.xml as follows;

```
<context-param>
  <param-name>primefaces.PRIVATE_CAPTCHA_KEY</param-name>
  <param-value>YOUR_PRIVATE_KEY</param-value>
</context-param>

<context-param>
  <param-name>primefaces.PUBLIC_CAPTCHA_KEY</param-name>
  <param-value>YOUR_PUBLIC_KEY</param-value>
</context-param>
```

That is it, now you can use captcha as follows;

```
<p:captcha />
```

Themes

Captcha features light and dark modes for theme, light is the default one.

```
<p:captcha theme="dark"/>
```

Languages

Text instructions displayed on captcha is customized with the *language* attribute. Below is a captcha with Turkish text.

```
<p:captcha language="tr"/>
```

Overriding Validation Messages

By default captcha displays it's own validation messages, this can be easily overridden by the JSF message bundle mechanism. Corresponding keys are;

| | |
|---------|-----------------------------------|
| Summary | primefaces.captcha.INVALID |
| Detail | primefaces.captcha.INVALID_detail |

Tips

- Use label option to provide readable error messages in case validation fails.
- Enable *secure* option to support https otherwise browsers will give warnings.
- See <http://www.google.com/recaptcha/learnmore> to learn more about how reCaptcha works.

3.13 Carousel

Carousel is a multi purpose component to display a set of data or general content with slide effects.



Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | carousel |
| Component Class | org.primefaces.component.carousel.Carousel |
| Component Type | org.primefaces.component.Carousel |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.CarouselRenderer |
| Renderer Class | org.primefaces.component.carousel.CarouselRenderer |

Attributes

| Name | Default | Type | Description |
|------------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | A value expression that refers to a collection |
| var | null | String | Name of the request scoped iterator |
| numVisible | 3 | Integer | Number of visible items per page |
| firstVisible | 0 | Integer | Index of the first element to be displayed |
| widgetVar | null | String | Name of the client side widget. |
| circular | false | Boolean | Sets continuous scrolling |
| vertical | false | Boolean | Sets vertical scrolling |
| autoPlayInterval | 0 | Integer | Sets the time in milliseconds to have Carousel start |

| Name | Default | Type | Description |
|-------------------|---------------|---------|------------------------------------------------------------------------|
| | | | scrolling automatically after being initialized |
| pageLinks | 3 | Integer | Defines the number of page links of paginator. |
| effect | slide | String | Name of the animation, could be “fade” or “slide”. |
| easing | easeInOutCirc | String | Name of the easing animation. |
| effectDuration | 500 | Integer | Duration of the animation in milliseconds. |
| dropdownTemplate. | {page} | String | Template string for dropdown of paginator. |
| style | null | String | Inline style of the component.. |
| styleClass | null | String | Style class of the component.. |
| itemStyle | null | String | Inline style of each item. |
| itemStyleClass | null | String | Style class of each item. |
| headerText | null | String | Label for header. |
| footerText | null | String | Label for footer. |
| responsive | false | Boolean | In responsive mode, carousel adjusts its content based on screen size. |
| breakpoint | 560 | Integer | Breakpoint value in pixels to switch between small and large viewport. |

Getting Started with Carousel

Carousel has two main use-cases; data and general content display. To begin with data iteration let's use a list of cars to display with carousel.

```
public class Car {
    private String model;
    private int year;
    private String manufacturer;
    private String color;
    ...
}
```

```

public class CarBean {

    private List<Car> cars;

    public CarListController() {
        cars = new ArrayList<Car>();
        cars.add(new Car("myModel", 2005, "ManufacturerX", "blue"));
        //add more cars
    }

    //getter setter
}

```

```

<p:carousel value="#{carBean.cars}" var="car">
    <p:graphicImage value="/images/cars/#{car.manufacturer}.jpg"/>
    <h:outputText value="Model: #{car.model}" />
    <h:outputText value="Year: #{car.year}" />
    <h:outputText value="Color: #{car.color}" />
</p:carousel>

```

Carousel iterates through the cars collection and renders it's children for each car.

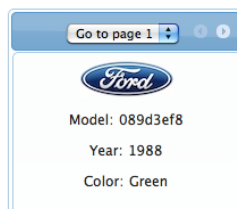
Limiting Visible Items

By default carousel lists its items in pages with size 3. This is customizable with the rows attribute.

```

<p:carousel value="#{carBean.cars}" var="car" numVisible="1"
    itemStyle="width:200px" >
    ...
</p:carousel>

```



Effects

Paging happens with a slider effect by default and following easing options are supported.

- backBoth
- backIn
- backOut
- bounceBoth
- bounceIn
- bounceOut
- easeBoth
- easeBothStrong
- easeIn
- easeInStrong

- easeNone
- easeOut
- easeInOutCirc
- easeOutStrong
- elasticBoth
- elasticIn
- elasticOut

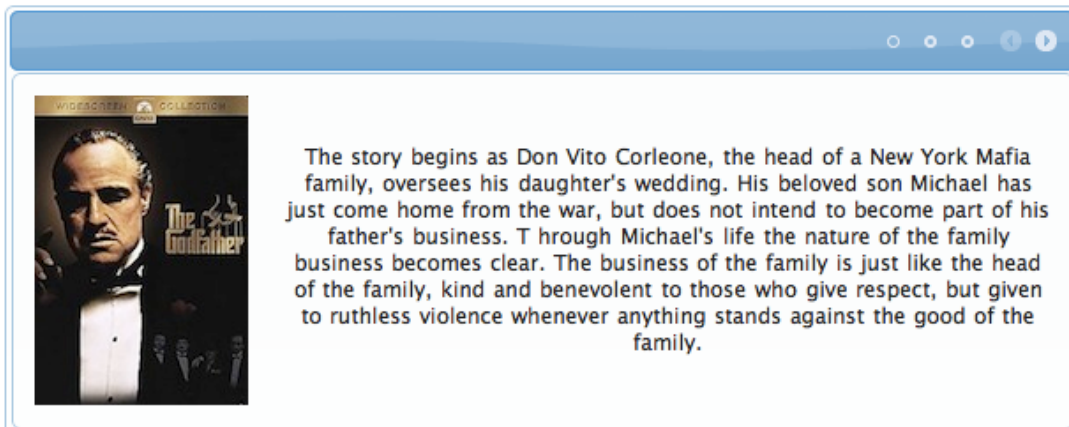
SlideShow

Carousel can display the contents in a slideshow, for this purpose *autoPlayInterval* and *circular* attributes are used. Following carousel displays a collection of images as a slideshow.

```
<p:carousel autoPlayInterval="2000" rows="1" effect="easeInStrong" circular="true"
  itemStyle="width:200px">
  <p:graphicImage value="/images/nature1.jpg"/>
  <p:graphicImage value="/images/nature2.jpg"/>
  <p:graphicImage value="/images/nature3.jpg"/>
  <p:graphicImage value="/images/nature4.jpg"/>
</p:carousel>
```

Content Display

Another use case of carousel is tab based content display.



```

<p:carousel rows="1" itemStyle="height:200px;width:600px;">
  <p:tab title="Godfather Part I">
    <h:panelGrid columns="2" cellpadding="10">
      <p:graphicImage value="/images/godfather/godfather1.jpg" />
      <h:outputText value="The story begins as Don Vito ..." />
    </h:panelGrid>
  </p:tab>
  <p:tab title="Godfather Part II">
    <h:panelGrid columns="2" cellpadding="10">
      <p:graphicImage value="/images/godfather/godfather2.jpg" />
      <h:outputText value="Francis Ford Coppola's ..." />
    </h:panelGrid>
  </p:tab>
  <p:tab title="Godfather Part III">
    <h:panelGrid columns="2" cellpadding="10">
      <p:graphicImage value="/images/godfather/godfather3.jpg" />
      <h:outputText value="After a break of ..." />
    </h:panelGrid>
  </p:tab>
</p:carousel>

```

Item Selection

Sample below selects an item from the carousel and displays details within a dialog.

```

<h:form id="form">
  <p:carousel value="#{carBean.cars}" var="car" itemStyle="width:200px" >
    <p:graphicImage value="/images/cars/#{car.manufacturer}.jpg"/>
    <p:commandLink update=":form:detail" oncomplete="PF('dlg').show()">
      <h:outputText value="Model: #{car.model}" />
      <f:setPropertyActionListener value="#{car}" target="#{carBean.selected}" />
    </p:commandLink>
  </p:carousel>

  <p:dialog widgetVar="dlg">
    <h:outputText id="detail" value="#{carBean.selected}" />
  </p:dialog>
</h:form>

```

```

public class CarBean {

    private List<Car> cars;

    private Car selected;

    //getters and setters
}

```

Header and Footer

Header and Footer of carousel can be defined in two ways either, using *headerText* and *footerText* options that take simple strings as labels or by *header* and *footer* facets that can take any custom content.

Responsive

When responsive mode is enabled via setting responsive option to true, carousel switches between small and large viewport depending on the breakpoint value which is 560 by default.

Client Side API

Widget: *PrimeFaces.widget.Carousel*

| Method | Params | Return Type | Description |
|-----------------|--------|-------------|---------------------------------|
| next() | - | void | Displays next page. |
| prev() | - | void | Displays previous page. |
| setPage() | index | void | Displays page with given index. |
| startAutoplay() | - | void | Starts slideshow. |
| stopAutoplay() | - | void | Stops slideshow. |

Skinning

Carousel resides in a container element which *style* and *styleClass* options apply. *itemStyle* and *itemStyleClass* attributes apply to each item displayed by carousel. Following is the list of structural style classes;

| Style Class | Applies |
|---------------------------|-------------------------------------|
| .ui-carousel | Main container |
| .ui-carousel-header | Header container |
| .ui-carousel-header-title | Header content |
| .ui-carousel-viewport | Content container |
| .ui-carousel-button | Navigation buttons |
| .ui-carousel-next-button | Next navigation button of paginator |
| .ui-carousel-prev-button | Prev navigation button of paginator |
| .ui-carousel-page-links | Page links of paginator. |
| .ui-carousel-page-link | Each page link of paginator. |
| .ui-carousel-item | Each item. |

As skinning style classes are global, see the main theming section for more information.

3.14 CellEditor

CellEditor is a helper component of datatable used for incell editing.

Info

| | |
|------------------|---------------------------------------------------------------|
| Tag | cellEditor |
| Component Class | org.primefaces.component.celleditor.CellEditor |
| Component Type | org.primefaces.component.CellEditor |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.CellEditorRenderer |
| Renderer Class | org.primefaces.component.celleditor.CellEditorRenderer |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |

Getting Started with CellEditor

See inline editing section in datatable documentation for more information about usage.

3.15 Chart

Chart component is a generic graph component to create various types of charts using jqplot library. Each chart type has its own subsection with code examples and section 3.12.10 documents the full charting API.

Info

| | |
|------------------|-----------------------------------------------------|
| Tag | chart |
| Component Class | org.primefaces.component.chart.Chart |
| Component Type | org.primefaces.component.Chart |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ChartRenderer |
| Renderer Class | org.primefaces.component.chart.ChartRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|------------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| type | null | String | Type of the chart. |
| model | null | ChartModel | Model object of data and settings. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| widgetVar | null | String | Name of the client side widget. |
| responsive | false | Boolean | In responsive mode, chart is redrawn when window is resized. |

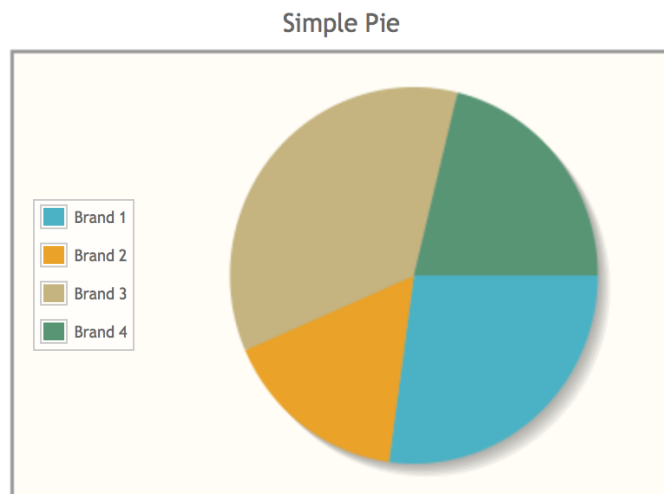
3.15.1 PieChart

PieChart is created with PieChartModel.

Basic

```
<p:chart type="pie" model="#{bean.model}" />
```

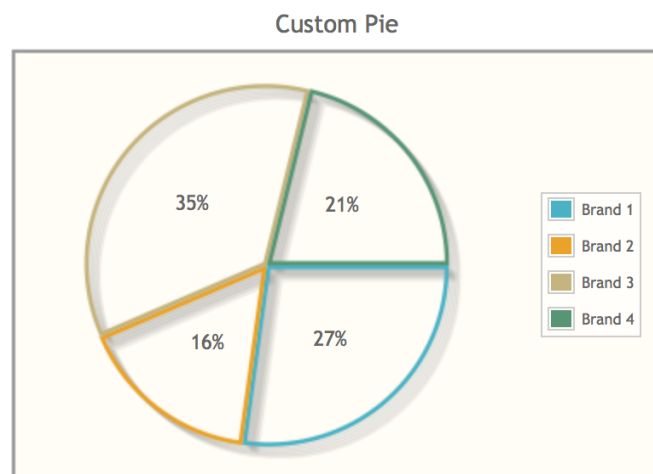
```
public class Bean {  
  
    private PieChartModel model;  
  
    public Bean() {  
        model = new PieChartModel();  
        model.set("Brand 1", 540);  
        model.set("Brand 2", 325);  
        model.set("Brand 3", 702);  
        model.set("Brand 4", 421);  
        model.setTitle("Simple Pie");  
        model.setLegendPosition("w");  
    }  
  
    public PieChartModel getModel() {  
        return model;  
    }  
}
```



Customized

```
<p:chart type="pie" model="#{bean.model}" />
```

```
public class Bean {  
  
    private PieChartModel model;  
  
    public Bean() {  
        model = new PieChartModel();  
        model.set("Brand 1", 540);  
        model.set("Brand 2", 325);  
        model.set("Brand 3", 702);  
        model.set("Brand 4", 421);  
  
        model.setTitle("Custom Pie");  
        model.setLegendPosition("e");  
        model.setFill(false);  
        model.setShowDataLabels(true);  
        model.setDiameter(150);  
    }  
  
    public PieChartModel getModel() {  
        return model;  
    }  
}
```



3.15.2 LineChart

LineChartModel is used to create a line chart.

Basic

```
<p:chart type="line" model="#{bean.model}" />
```

```
public class Bean {

    private LineChartModel model;

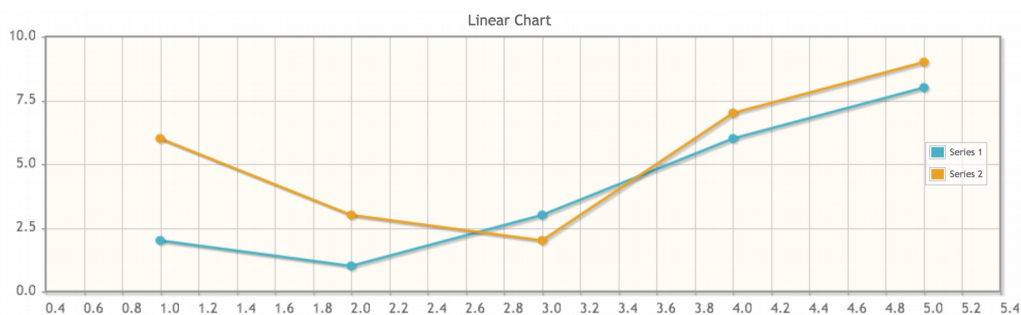
    public Bean() {
        model = new LineChartModel();

        LineChartSeries series1 = new LineChartSeries();
        series1.setLabel("Series 1");
        series1.set(1, 2);
        series1.set(2, 1);
        series1.set(3, 3);
        series1.set(4, 6);
        series1.set(5, 8);

        LineChartSeries series2 = new LineChartSeries();
        series2.setLabel("Series 2");
        series2.set(1, 6);
        series2.set(2, 3);
        series2.set(3, 2);
        series2.set(4, 7);
        series2.set(5, 9);

        model.addSeries(series1);
        model.addSeries(series2);
        model.setTitle("Linear Chart");
        model.setLegendPosition("e");
        Axis yAxis = model.getAxis(AxisType.Y);
        yAxis.setMin(0);
        yAxis.setMax(10);
    }

    public LineChartModel getModel() {
        return model;
    }
}
```



Customized

```
<p:chart type="line" model="#{bean.model}" />
```

```
public class Bean {

    private LineChartModel model;

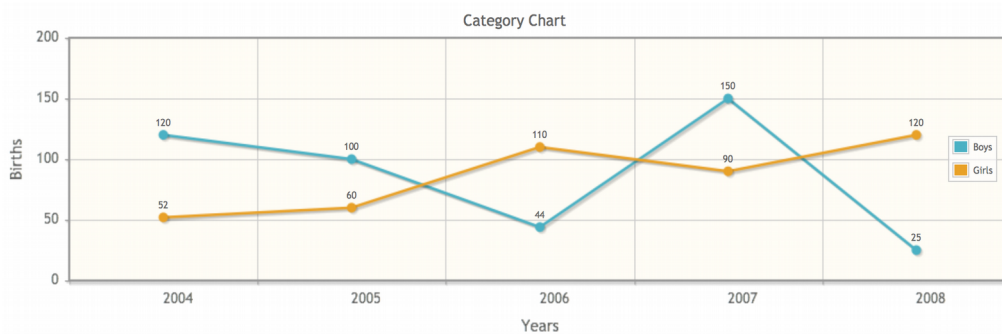
    public Bean() {
        model = new LineChartModel();

        ChartSeries boys = new ChartSeries();
        boys.setLabel("Boys");
        boys.set("2004", 120);
        boys.set("2005", 100);
        boys.set("2006", 44);
        boys.set("2007", 150);
        boys.set("2008", 25);

        ChartSeries girls = new ChartSeries();
        girls.setLabel("Girls");
        girls.set("2004", 52);
        girls.set("2005", 60);
        girls.set("2006", 110);
        girls.set("2007", 90);
        girls.set("2008", 120);

        model.addSeries(boys);
        model.addSeries(girls);
        model.setTitle("Category Chart");
        model.setLegendPosition("e");
        model.setShowPointLabels(true);
        model.getAxes().put(AxisType.X, new CategoryAxis("Years"));
        Axis yAxis = model.getAxis(AxisType.Y);
        yAxis.setLabel("Births");
        yAxis.setMin(0);
        yAxis.setMax(200);
    }

    public LineChartModel getModel() {
        return model;
    }
}
```



Area

```
<p:chart type="line" model="#{bean.model}" />
```

```
public class Bean {

    private LineChartModel model;

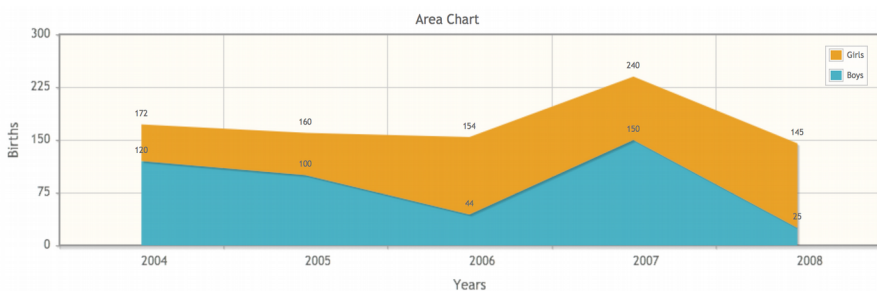
    public Bean() {
        model = new LineChartModel();

        LineChartSeries boys = new LineChartSeries();
        boys.setFill(true);
        boys.setLabel("Boys");
        boys.set("2004", 120);
        boys.set("2005", 100);
        boys.set("2006", 44);
        boys.set("2007", 150);
        boys.set("2008", 25);

        LineChartSeries girls = new LineChartSeries();
        girls.setFill(true);
        girls.setLabel("Girls");
        girls.set("2004", 52);
        girls.set("2005", 60);
        girls.set("2006", 110);
        girls.set("2007", 90);
        girls.set("2008", 120);

        model.addSeries(boys);
        model.addSeries(girls);
        model.setTitle("Area Chart");
        model.setLegendPosition("ne");
        model.setStacked(true);
        model.setShowPointLabels(true);
        model.getAxis(AxisType.X).setLabel("Years");
        Axis yAxis = model.getAxis(AxisType.Y);
        yAxis.setLabel("Births");
        yAxis.setMin(0);
        yAxis.setMax(300);
    }

    public CartesianChartModel getModel() {
        return model;
    }
}
```



3.15.3 BarChart

BarChartModel is used to created a BarChart.

Basic

```
<p:chart type="bar" model="#{bean.model}" />
```

```
public class Bean {
    private BarChartModel model;

    public ChartBean() {
        model = new BarChartModel();

        ChartSeries boys = new ChartSeries();
        boys.setLabel("Boys");
        boys.set("2004", 120);
        boys.set("2005", 100);
        boys.set("2006", 44);
        boys.set("2007", 150);
        boys.set("2008", 25);

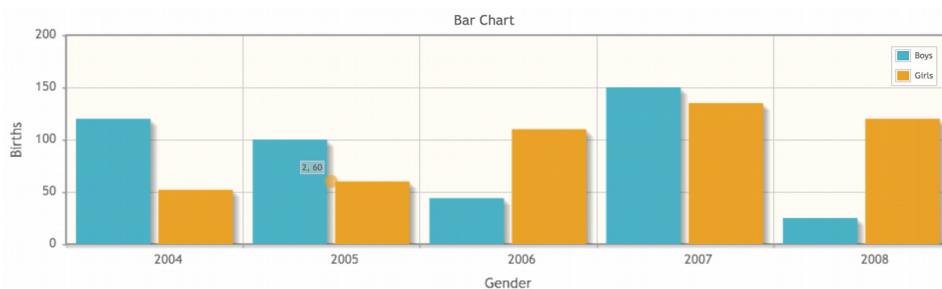
        ChartSeries girls = new ChartSeries();
        girls.setLabel("Girls");
        girls.set("2004", 52);
        girls.set("2005", 60);
        girls.set("2006", 110);
        girls.set("2007", 135);
        girls.set("2008", 120);

        model.addSeries(boys);
        model.addSeries(girls);
        model.setTitle("Bar Chart");
        model.setLegendPosition("ne");

        Axis xAxis = model.getAxis(AxisType.X);
        xAxis.setLabel("Gender");

        Axis yAxis = model.getAxis(AxisType.Y);
        yAxis.setLabel("Births");
        yAxis.setMin(0);
        yAxis.setMax(200);
    }

    public BarChartModel getModel() { return model; }
}
```



Horizontal and Stacked

```
<p:chart type="bar" model="#{bean.model}" />
```

```
public class Bean {
    private HorizontalBarChartModel model;

    public ChartBean() {
        model = new HorizontalBarChartModel();

        ChartSeries boys = new ChartSeries();
        boys.setLabel("Boys");
        boys.set("2004", 50);
        boys.set("2005", 96);
        boys.set("2006", 44);
        boys.set("2007", 55);
        boys.set("2008", 25);

        ChartSeries girls = new ChartSeries();
        girls.setLabel("Girls");
        girls.set("2004", 52);
        girls.set("2005", 60);
        girls.set("2006", 82);
        girls.set("2007", 35);
        girls.set("2008", 120);

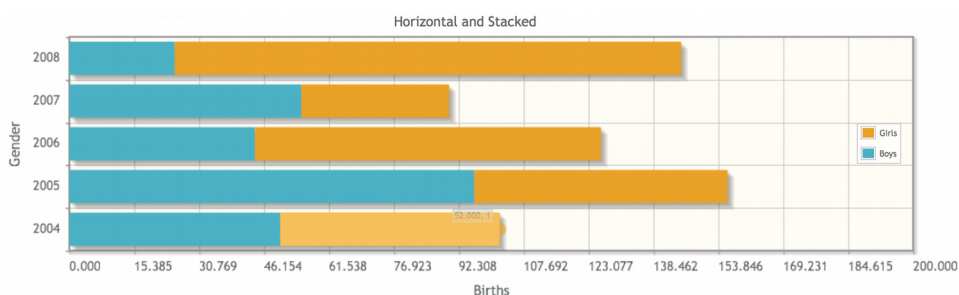
        model.addSeries(boys);
        model.addSeries(girls);

        model.setTitle("Horizontal and Stacked");
        model.setLegendPosition("e");
        model.setStacked(true);

        Axis xAxis = model.getAxis(AxisType.X);
        xAxis.setLabel("Births");
        xAxis.setMin(0);
        xAxis.setMax(200);

        Axis yAxis = model.getAxis(AxisType.Y);
        yAxis.setLabel("Gender");
    }

    public HorizontalBarChartModel getModel() { return model; }
}
```



3.15.4 DonutChart

DonutChart is generated using DonutChartModel.

Basic

```
<p:chart type="donut" model="#{bean.model}" />
```

```
public class Bean {
    private DonutChartModel model;

    public ChartBean() {
        model = new DonutChartModel();

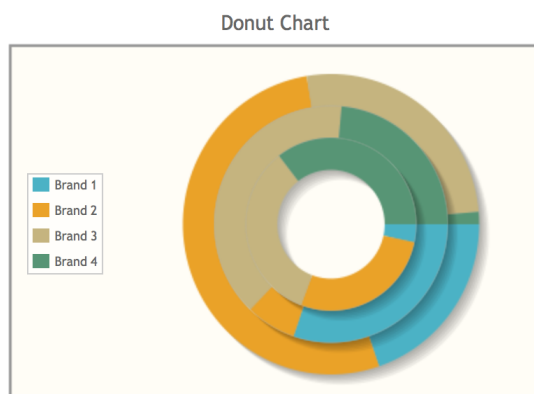
        Map<String, Number> circle1 = new LinkedHashMap<String, Number>();
        circle1.put("Brand 1", 150);
        circle1.put("Brand 2", 400);
        circle1.put("Brand 3", 200);
        circle1.put("Brand 4", 10);
        model.addCircle(circle1);

        Map<String, Number> circle2 = new LinkedHashMap<String, Number>();
        circle2.put("Brand 1", 540);
        circle2.put("Brand 2", 125);
        circle2.put("Brand 3", 702);
        circle2.put("Brand 4", 421);
        model.addCircle(circle2);

        Map<String, Number> circle3 = new LinkedHashMap<String, Number>();
        circle3.put("Brand 1", 40);
        circle3.put("Brand 2", 325);
        circle3.put("Brand 3", 402);
        circle3.put("Brand 4", 421);
        model.addCircle(circle3);

        model.setTitle("Donut Chart");
        model.setLegendPosition("w");
    }

    public DonutChartModel getModel() { return model; }
}
```



Customized

```
<p:chart type="donut" model="#{bean.model}" />
```

```
public class Bean {
    private DonutChartModel model;

    public ChartBean() {
        model = new DonutChartModel();

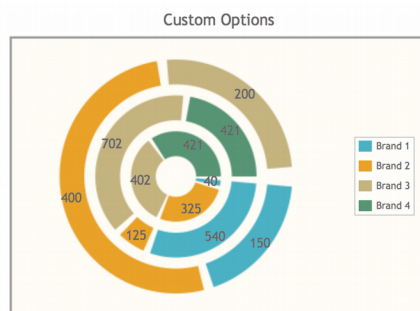
        Map<String, Number> circle1 = new LinkedHashMap<String, Number>();
        circle1.put("Brand 1", 150);
        circle1.put("Brand 2", 400);
        circle1.put("Brand 3", 200);
        circle1.put("Brand 4", 10);
        model.addCircle(circle1);

        Map<String, Number> circle2 = new LinkedHashMap<String, Number>();
        circle2.put("Brand 1", 540);
        circle2.put("Brand 2", 125);
        circle2.put("Brand 3", 702);
        circle2.put("Brand 4", 421);
        model.addCircle(circle2);

        Map<String, Number> circle3 = new LinkedHashMap<String, Number>();
        circle3.put("Brand 1", 40);
        circle3.put("Brand 2", 325);
        circle3.put("Brand 3", 402);
        circle3.put("Brand 4", 421);
        model.addCircle(circle3);

        model.setTitle("Donut Chart");
        model.setLegendPosition("w");
        model.setTitle("Custom Options");
        model.setLegendPosition("e");
        model.setSliceMargin(5);
        model.setShowDataLabels(true);
        model.setDataFormat("value");
        model.setShadow(false);
    }

    public DonutChartModel getModel() { return model; }
}
```



3.15.5 BubbleChart

BubbleChart is created with a BubbleChartModel.

Basic

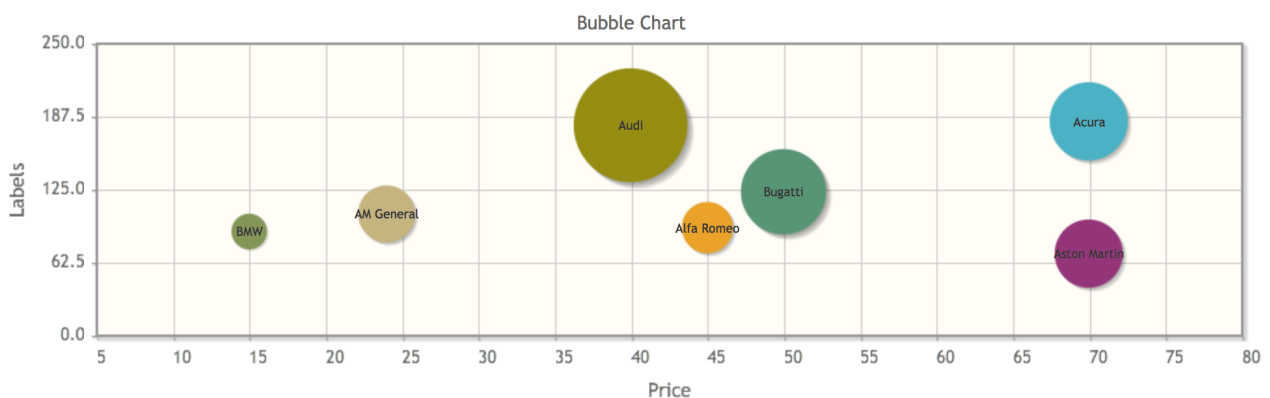
```
<p:chart type="bubble" model="#{bean.model}" />
```

```
public class Bean {
    private BubbleChartModel model;

    public ChartBean() {
        model = new BubbleChartModel();
        model.add(new BubbleChartSeries("Acura", 70, 183,55));
        model.add(new BubbleChartSeries("Alfa Romeo", 45, 92, 36));
        model.add(new BubbleChartSeries("AM General", 24, 104, 40));
        model.add(new BubbleChartSeries("Bugatti", 50, 123, 60));
        model.add(new BubbleChartSeries("BMW", 15, 89, 25));
        model.add(new BubbleChartSeries("Audi", 40, 180, 80));
        model.add(new BubbleChartSeries("Aston Martin", 70, 70, 48));

        model.setTitle("Bubble Chart");
        model.getAxis(AxisType.X).setLabel("Price");
        Axis yAxis = model.getAxis(AxisType.Y);
        yAxis.setMin(0);
        yAxis.setMax(250);
        yAxis.setLabel("Labels");
    }

    public BubbleChartModel getModel() { return model; }
}
```



Customized

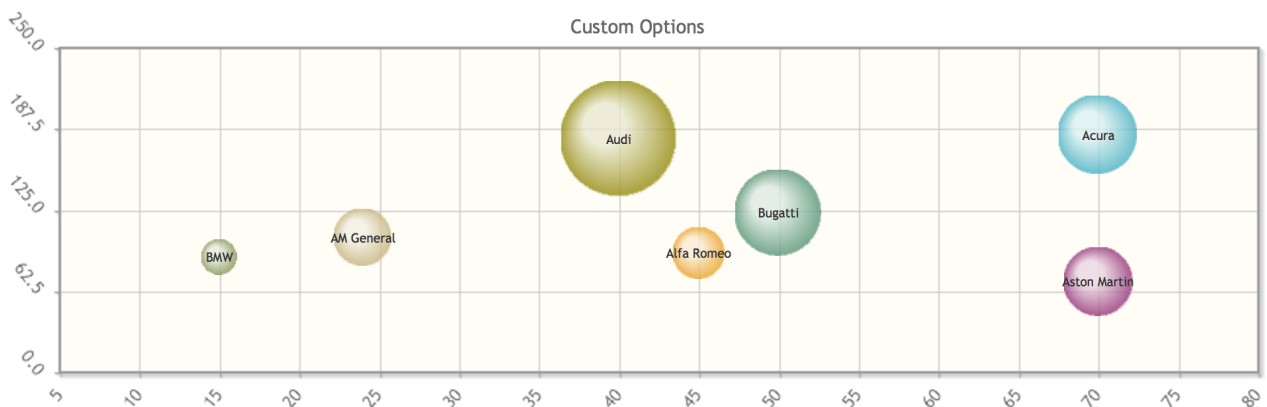
```
<p:chart type="bubble" model="#{bean.model}" />
```

```
public class Bean {
    private BubbleChartModel model;

    public ChartBean() {
        model = new BubbleChartModel();
        model.add(new BubbleChartSeries("Acura", 70, 183,55));
        model.add(new BubbleChartSeries("Alfa Romeo", 45, 92, 36));
        model.add(new BubbleChartSeries("AM General", 24, 104, 40));
        model.add(new BubbleChartSeries("Bugatti", 50, 123, 60));
        model.add(new BubbleChartSeries("BMW", 15, 89, 25));
        model.add(new BubbleChartSeries("Audi", 40, 180, 80));
        model.add(new BubbleChartSeries("Aston Martin", 70, 70, 48));

        model = initBubbleModel();
        model.setTitle("Custom Options");
        model.setShadow(false);
        model.setBubbleGradients(true);
        model.setBubbleAlpha(0.8);
        model.getAxis(AxisType.X).setTickAngle(-50);
        Axis yAxis = model.getAxis(AxisType.Y);
        yAxis.setMin(0);
        yAxis.setMax(250);
        yAxis.setTickAngle(50);
    }

    public BubbleChartModel getModel() { return model; }
}
```



3.15.6 Ohlc Chart

OhlcChartModel is used to display Ohlc Charts.

Basic

```
<p:chart type="ohlc" model="#{bean.model}" />
```

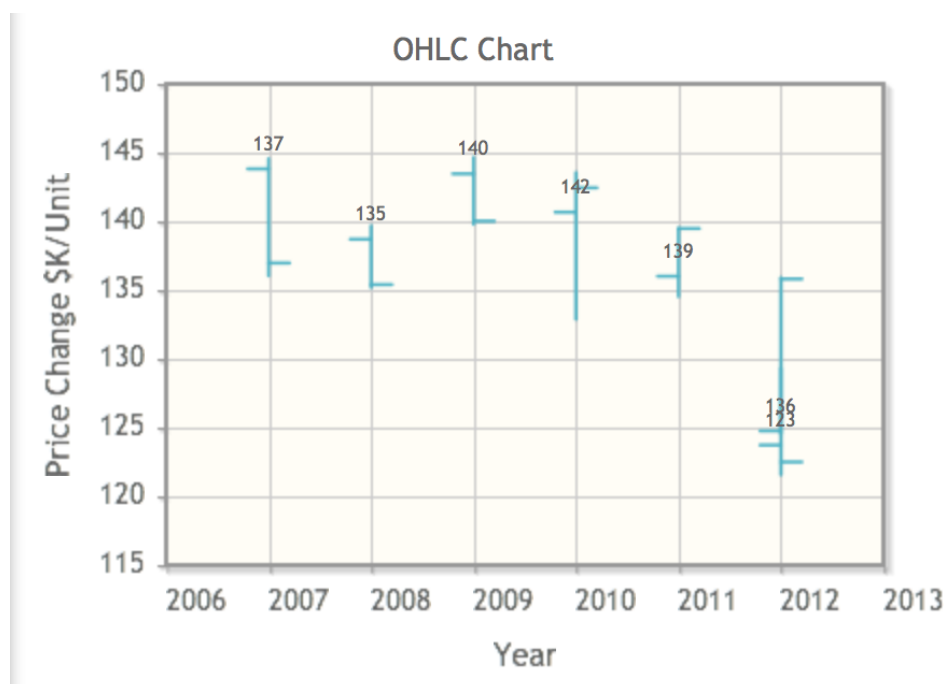
```
public class Bean {
    private OhlcChartModel model;

    public ChartBean() {
        ohlcModel = new OhlcChartModel();

        ohlcModel.add(new OhlcChartSeries(2007, 143.82, 144.56, 136.04, 136.97));
        ohlcModel.add(new OhlcChartSeries(2008, 138.7, 139.68, 135.18, 135.4));
        ohlcModel.add(new OhlcChartSeries(2009, 143.46, 144.66, 139.79, 140.02));
        ohlcModel.add(new OhlcChartSeries(2010, 140.67, 143.56, 132.88, 142.44));
        ohlcModel.add(new OhlcChartSeries(2011, 136.01, 139.5, 134.53, 139.48));
        ohlcModel.add(new OhlcChartSeries(2012, 124.76, 135.9, 124.55, 135.81));
        ohlcModel.add(new OhlcChartSeries(2012, 123.73, 129.31, 121.57, 122.5));

        ohlcModel.setTitle("OHLC Chart");
        ohlcModel.getAxis(AxisType.X).setLabel("Year");
        ohlcModel.getAxis(AxisType.Y).setLabel("Price Change $K/Unit");
    }

    public OhlcChartModel getModel() { return model; }
}
```



Candlestick

```
<p:chart type="ohlc" model="#{bean.model}" />
```

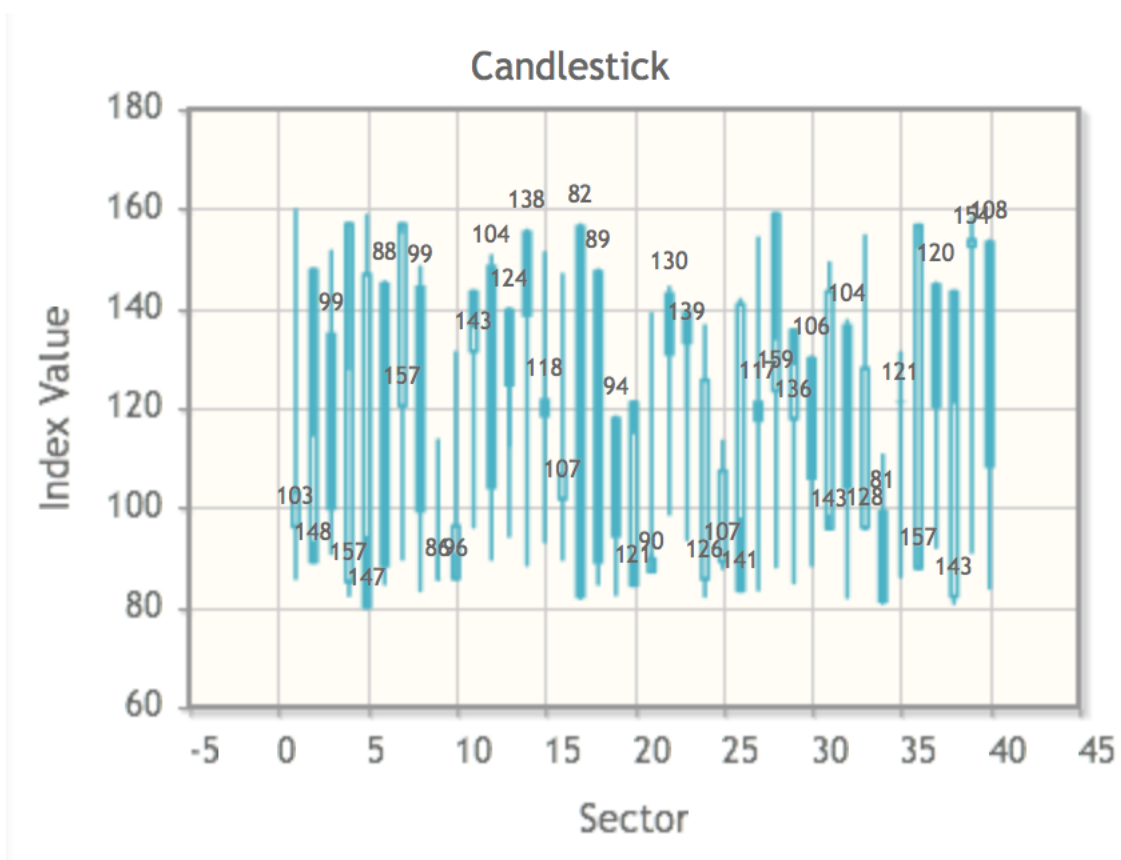
```
public class Bean {
    private OhlcChartModel model;

    public ChartBean() {
        model = new OhlcChartModel();

        for( int i=1 ; i < 41 ; i++) {
            ohlcModel2.add(new OhlcChartSeries(i, Math.random() * 80 + 80,
            Math.random() * 50 + 110, Math.random() * 20 + 80, Math.random() * 80 + 80));
        }

        model.setTitle("Candlestick");
        model.setCandleStick(true);
        model.getAxis(AxisType.X).setLabel("Sector");
        model.getAxis(AxisType.Y).setLabel("Index Value");
    }

    public OhlcChartModel getModel() { return model; }
}
```



3.15.7 MeterGauge Chart

MeterGauge Chart is created using MeterGaugeChartModel.

Basic

```
<p:chart type="metergauge" model="#{bean.model}" />
```

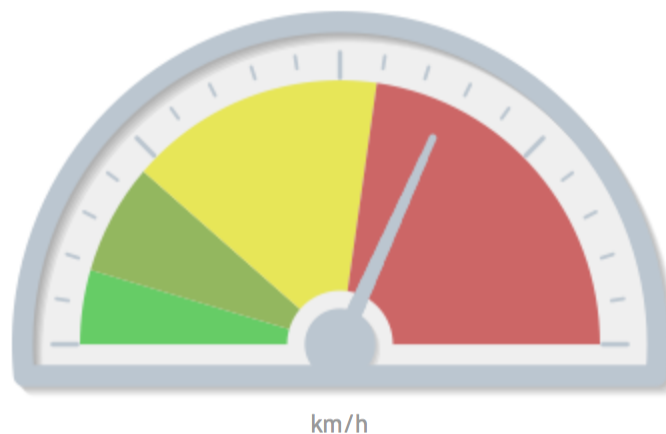
```
public class Bean {
    private MeterGaugeChartModel model;

    public ChartBean() {
        List<Number> intervals = new ArrayList<Number>(){
            add(20);
            add(50);
            add(120);
            add(220);
        };

        model = new MeterGaugeChartModel(140, intervals);
        model.setTitle("MeterGauge Chart");
        model.setGaugeLabel("km/h");
    }

    public MeterGaugeChartModel getModel() { return model; }
}
```

Custom Options



Customized

```
<p:chart type="metergauge" model="#{bean.model}" />
```

```

public class Bean {
    private MeterGaugeChartModel model;

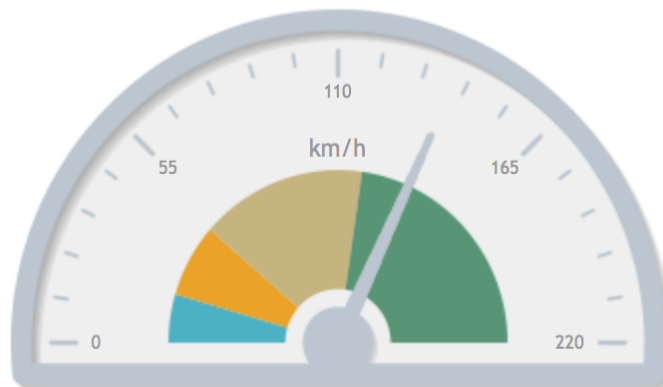
    public ChartBean() {
        List<Number> intervals = new ArrayList<Number>(){
            add(20);
            add(50);
            add(120);
            add(220);
        };

        model = new MeterGaugeChartModel(140, intervals);
        model.setTitle("Custom Options");
        model.setSeriesColors("66cc66,93b75f,E7E658,cc6666");
        model.setGaugeLabel("km/h");
        model.setGaugeLabelPosition("bottom");
        model.setShowTickLabels(false);
        model.setLabelHeightAdjust(110);
        model.setIntervalOuterRadius(130);
    }

    public MeterGaugeChartModel getModel() { return model; }
}

```

MeterGauge Chart



3.15.8 Combined Chart

On same graph, different series type can be displayed together.

Basic

```
<p:chart type="bar" model="#{bean.model}" />
```

```
public class Bean {
    private BarChartModel model;

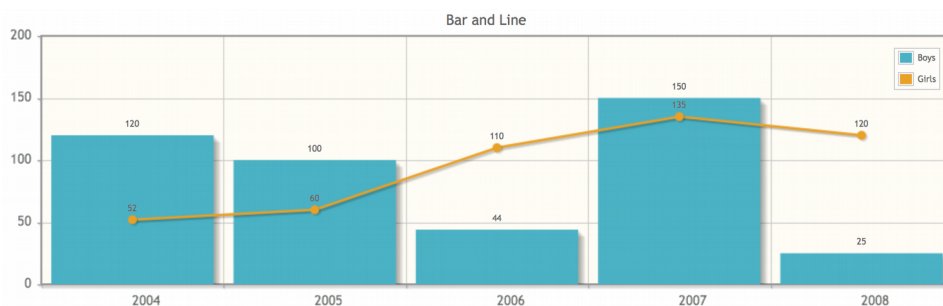
    public ChartBean() {
        combinedModel = new BarChartModel();

        BarChartSeries boys = new BarChartSeries();
        boys.setLabel("Boys");
        boys.set("2004", 120);
        boys.set("2005", 100);
        boys.set("2006", 44);
        boys.set("2007", 150);
        boys.set("2008", 25);

        LineChartSeries girls = new LineChartSeries();
        girls.setLabel("Girls");
        girls.set("2004", 52);
        girls.set("2005", 60);
        girls.set("2006", 110);
        girls.set("2007", 135);
        girls.set("2008", 120);

        model.addSeries(boys);
        model.addSeries(girls);
        model.setTitle("Bar and Line");
        model.setLegendPosition("ne");
        model.setMouseoverHighlight(false);
        model.setShowDatatip(false);
        model.setShowPointLabels(true);
        Axis yAxis = model.getAxis(AxisType.Y);
        yAxis.setMin(0);
        yAxis.setMax(200);
    }

    public BarChartModel getModel() { return model; }
}
```



3.15.9 Multiple Axis

Up to 9 axes (xaxis-x9axis, yaxis-y9axis) can be displayed on the same chart.

Basic

```
<p:chart type="line" model="#{bean.model}" />
```

```
public class Bean {
    private LineChartModel model;

    public ChartBean() {
        model = new LineChartModel();

        BarChartSeries boys = new BarChartSeries();
        boys.setLabel("Boys");
        boys.set("2004", 120);
        boys.set("2005", 100);
        boys.set("2006", 44);
        boys.set("2007", 150);
        boys.set("2008", 25);

        LineChartSeries girls = new LineChartSeries();
        girls.setLabel("Girls");
        girls.setXaxis(AxisType.X2);
        girls.setYaxis(AxisType.Y2);
        girls.set("A", 52);
        girls.set("B", 60);
        girls.set("C", 110);
        girls.set("D", 135);
        girls.set("E", 120);

        model.addSeries(boys);
        model.addSeries(girls);

        model.setTitle("Multi Axis Chart");
        model.setMouseoverHighlight(false);

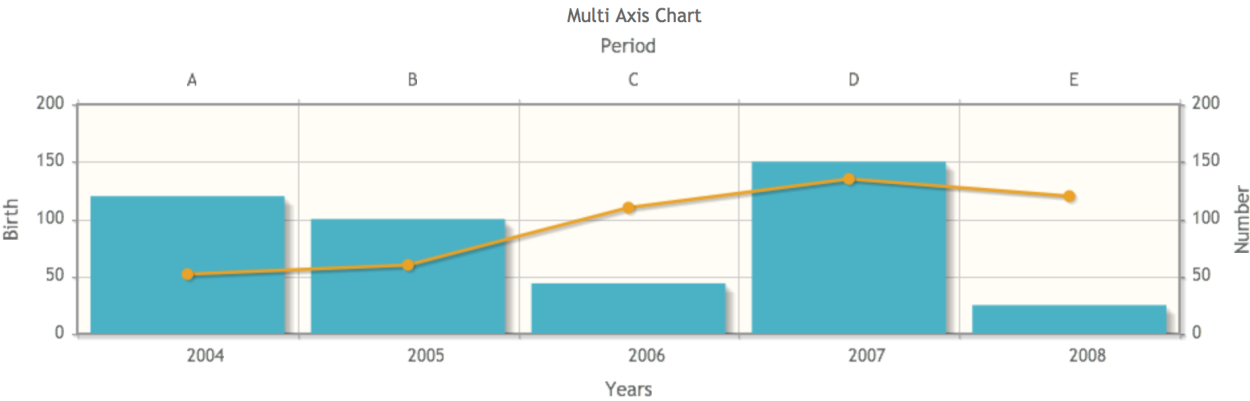
        model.getAxes().put(AxisType.X, new CategoryAxis("Years"));
        model.getAxes().put(AxisType.X2, new CategoryAxis("Period"));

        Axis yAxis = model.getAxis(AxisType.Y);
        yAxis.setLabel("Birth");
        yAxis.setMin(0);
        yAxis.setMax(200);

        Axis y2Axis = new LinearAxis("Number");
        y2Axis.setMin(0);
        y2Axis.setMax(200);

        model.getAxes().put(AxisType.Y2, y2Axis);
    }

    public LineChartModel getModel() { return model; }
}
```



3.15.10 Date Axis

Use `DateAxis` if you are displaying dates in an axis.

Basic

```
<p:chart type="line" model="#{bean.model}" />
```

```
public class Bean {
    private LineChartModel model;

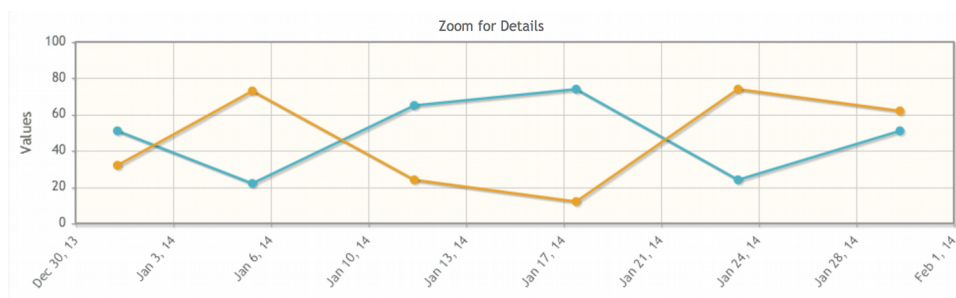
    public ChartBean() {
        dateModel = new LineChartModel();
        LineChartSeries series1 = new LineChartSeries();
        series1.setLabel("Series 1");
        series1.set("2014-01-01", 51);
        series1.set("2014-01-06", 22);
        series1.set("2014-01-12", 65);
        series1.set("2014-01-18", 74);
        series1.set("2014-01-24", 24);
        series1.set("2014-01-30", 51);

        LineChartSeries series2 = new LineChartSeries();
        series2.setLabel("Series 2");
        series2.set("2014-01-01", 32);
        series2.set("2014-01-06", 73);
        series2.set("2014-01-12", 24);
        series2.set("2014-01-18", 12);
        series2.set("2014-01-24", 74);
        series2.set("2014-01-30", 62);

        dateModel.addSeries(series1);
        dateModel.addSeries(series2);
        dateModel.setTitle("Zoom for Details");
        dateModel.setZoom(true);
        dateModel.getAxis(AxisType.Y).setLabel("Values");
        DateAxis axis = new DateAxis("Dates");
        axis.setTickAngle(-50);
        axis.setMax("2014-02-01");
        axis.setTickFormat("%b %#d, %y");

        dateModel.getAxes().put(AxisType.X, axis);
    }

    public LineChartModel getModel() { return model; }
}
```



3.15.11 Interactive Chart

Charts are interactive components, information about selected series and items can be passed via ajax to a JSF backing bean using `ItemSelectEvent`.

Basic

```
<p:chart type="pie" model="#{bean.model}">
    <p:ajax event="itemSelect" listener="#{bean.itemSelect}" />
</p:chart>
```

```
public class Bean {
    private PieChartModel model;

    public ChartBean() {
        model = new PieChartModel();

        model.set("Brand 1", 540);
        model.set("Brand 2", 325);
        model.set("Brand 3", 702);
        model.set("Brand 4", 421);

        model.setTitle("Simple Pie");
        model.setLegendPosition("w");
    }

    public PieChartModel getModel() { return model; }

    public void itemSelect(ItemSelectEvent event) {
        FacesMessage msg = new FacesMessage(FacesMessage.SEVERITY_INFO,
            "Item selected", "Item Index: " + event.getItemIndex() +
            ", Series Index:" + event.getSeriesIndex());

        FacesContext.getCurrentInstance().addMessage(null, msg);
    }
}
```

3.15.12 Export

Chart component provides a client side method to convert the graph to an image. Example below demonstrates how to use a button click to export the chart as an image and display it in a dialog so that users can download it as a regular image.

```
<p:chart type="line" model="#{bean.model}" style="width:500px;height:300px"
        widgetVar="chart"/>

<p:commandButton type="button" value="Export" icon="ui-icon-extlink"
        onclick="exportChart()"/>

<p:dialog widgetVar="dlg" showEffect="fade" modal="true" header="Chart as an Image">
  <p:outputPanel id="output" layout="block" style="width:500px;height:300px"/>
</p:dialog>

function exportChart() {
  //export image
  $('#output').empty().append(PF('chart').exportAsImage());

  //show the dialog
  PF('dlg').show();
}
```

3.15.13 Static Images

JFreeChart with GraphicImage component is an alternative to the chart component.

Basic

```
<p:graphicImage value="#{bean.chart}" />
```

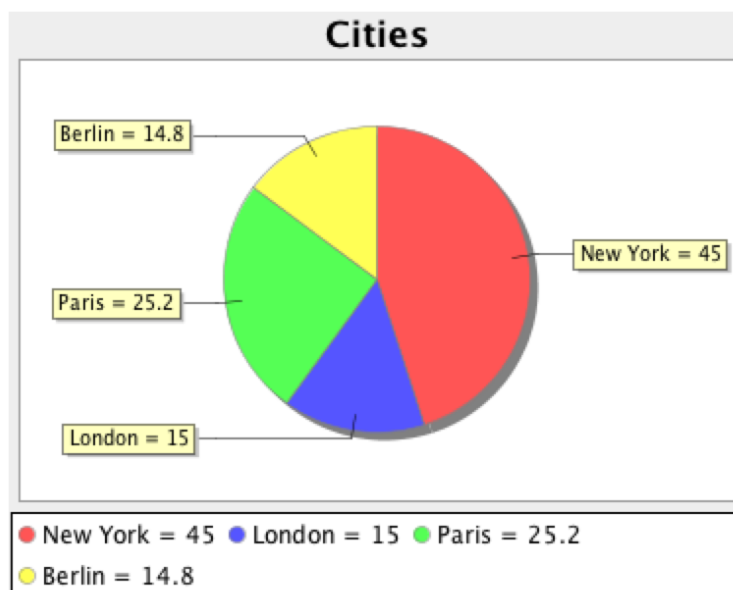
```
public class Bean {
    private StreamedContent chart;

    public Bean() {
        JFreeChart jfreechart = ChartFactory.createPieChart("Cities",
            createDataset(), true, true, false);
        File chartFile = new File("dynamichart");
        ChartUtilities.saveChartAsPNG(chartFile, jfreechart, 375, 300);
        chart = new DefaultStreamedContent(new FileInputStream(chartFile),
            "image/png");
    }

    public StreamedContent getChart() { return model; }

    private PieDataset createDataset() {
        DefaultPieDataset dataset = new DefaultPieDataset();
        dataset.setValue("New York", new Double(45.0));
        dataset.setValue("London", new Double(15.0));
        dataset.setValue("Paris", new Double(25.2));
        dataset.setValue("Berlin", new Double(14.8));

        return dataset;
    }
}
```



3.15.14 Skinning

Charts can be styled using regular css. Following is the list of style classes;

| Style Class | Applies |
|------------------------------------|------------------------------|
| .jqplot-target | Plot target container. |
| .jqplot-axis | Axes. |
| .jqplot-xaxis | Primary x-axis. |
| .jqplot-yaxis | Primary y-axis. |
| .jqplot-x2axis, .jqplot-x3axis ... | 2nd, 3rd ... x-axis. |
| .jqplot-y2axis, .jqplot-y3axis ... | 2nd, 3rd ... y-axis. |
| .jqplot-axis-tick | Axis ticks. |
| .jqplot-xaxis-tick | Primary x-axis ticks. |
| .jqplot-x2axis-tick | Secondary x-axis ticks. |
| .jqplot-yaxis-tick | Primary y-axis-ticks. |
| .jqplot-y2axis-tick | Secondary y-axis-ticks. |
| table.jqplot-table-legend | Legend table. |
| .jqplot-title | Title of the chart. |
| .jqplot-cursor-tooltip | Cursor tooltip. |
| .jqplot-highlighter-tooltip | Highlighter tooltip. |
| div.jqplot-table-legend-swatch | Colors swatch of the legend. |

Additionally *style* and *styleClass* options of chart component apply to the container element of charts, use these attribute to specify the dimensions of a chart.

```
<p:chart type="pie" model="#{bean.model}" style="width:320px;height:200px" />
```

In case you'd like to change the colors of series, use the *seriesColors* option in ChartModel API.

3.15.15 Extender

Chart API provide high level access to commonly used jqplot options however there are many more customization options available in jqplot. Extender feature provide access to low level apis to do advanced customization by enhancing the configuration object, here is an example to increase shadow depth of the line series where model's extender property is set to "ext".

```
<p:chart type="line" model="#{bean.model}" />
```

```
function ext() {  
    //this = chart widget instance  
    //this.cfg = options  
    this.cfg.seriesDefaults = {  
        shadowDepth: 5  
    };  
}
```

Refer to jqPlot docs for available options.

3.15.16 Chart API

Axis

org.primefaces.model.chart.Axis

| Property | Default | Type | Description |
|--------------|---------|---------|---------------------------------------------------|
| label | null | String | Title of the axis. |
| min | null | Object | Minimum boundary value. |
| max | null | Object | Maximum boundary value. |
| tickAngle | null | Integer | Angle of text, measured clockwise. |
| tickFormat | null | String | Format string to use with the axis tick formatter |
| tickInterval | null | String | Number of units between ticks. |
| tickCount | null | Integer | Desired number of ticks. |

AxisType

org.primefaces.model.chart.AxisType

AxisType is an enum to define the type of the axis from X-Y to X9-Y9.

BarChartModel

org.primefaces.model.chart.BarChartModel extends *org.primefaces.model.chart.ChartModel*

| Property | Default | Type | Description |
|------------|---------|---------|------------------------------------|
| barPadding | 8 | Integer | Padding between bars. |
| barMargin | 10 | Integer | Margin between bars. |
| stacked | false | Boolean | Displays series in stacked format. |

BarChartSeries

org.primefaces.model.chart.BarChartSeries extends *org.primefaces.model.chart.ChartSeries*

| Property | Default | Type | Description |
|--------------|---------|---------|------------------------------------------------------------|
| disableStack | false | Boolean | When true, series data is not included in a stacked chart. |

BubbleChartModel

org.primefaces.model.chart.BubbleChartModel extends *org.primefaces.model.chart.ChartModel*

| Property | Default | Type | Description |
|-----------------|---------|-------------------------|---------------------------------------------|
| data | null | List<BubbleChartSeries> | Data as a list of BubbleChartSeries. |
| bubbleGradients | false | Boolean | Displays bubbles with gradients. |
| bubbleAlpha | 1.0 | Double | Opacity of bubbles. |
| showLabels | true | Boolean | Displays label of a series inside a bubble. |

BubbleChartSeries

org.primefaces.model.chart.BarChartSeries extends *org.primefaces.model.chart.ChartSeries*

| Property | Default | Type | Description |
|----------|---------|---------|-----------------------------|
| x | null | Integer | X-Axis value of the bubble. |
| y | null | Integer | Y-Axis value of the bubble. |
| radius | null | Integer | Radius of the bubble. |
| label | null | String | Label text of the bubble. |

CartesianChartModel

org.primefaces.model.chart.CartesianChartModel

| Property | Default | Type | Description |
|-----------------|---------|--------------------|------------------------------------------------|
| series | null | List<ChartSeries> | List of series. |
| axes | HashMap | Map<AxisType,Axis> | Map of chart axis. |
| zoom | false | Boolean | Adds zoom feature when enabled. |
| animate | false | Boolean | When enabled, series are drawn with an effect. |
| showDatatip | true | Boolean | Displays a tooltip on hover. |
| datatipFormat | null | String | Format of the data tooltip. |
| showPointLabels | false | Boolean | Displays data inline in plot. |

CategoryAxis

org.primefaces.model.chart.CategoryAxis extends *org.primefaces.model.chart.Axis*

CategoryAxis is used when data on the axis does not consists of numbers.

ChartModel

org.primefaces.model.chart.ChartModel

| Property | Default | Type | Description |
|----------------------|---------|---------|---------------------------------------------------------------|
| title | null | String | Title text for the plot |
| shadow | true | Boolean | To show shadow or not on series. |
| seriesColors | null | String | Comma separated list of series colors e.g. "#4BB2C5", "CCCCC" |
| negativeSeriesColors | null | String | Similar to seriesColors but for negative values. |
| legendPosition | null | String | Position of the legend like "n" or "ne". |
| legendCols | 0 | Integer | Maximum number of columns in the legend. |
| legendRows | 0 | Integer | Maximum number of rows in the legend. |
| legendPlacement | null | Enum | Defines the location of the legend. |
| mouseoverHighlight | true | Boolean | Highlights series on hover. |
| extender | null | String | Name of javascript function to extend chart with. |
| resetAxesOnResize | true | Boolean | Resets axes on resize for responsive charts. |

ChartSeries

org.primefaces.model.chart.ChartSeries

| Property | Default | Type | Description |
|----------|---------|--------------------|------------------------------|
| label | null | String | Title text of the series. |
| data | null | Map<Object,Number> | Data of the series as a map. |
| xaxis | null | AxisType | X-Axis of the series. |
| yaxis | null | AxisType | Y-Axis of the series. |

DateAxis

org.primefaces.model.chart.DateAxis extends *org.primefaces.model.chart.Axis*

DateAxis is used when data on the axis consists of string representations of date values.

DonutChartModel

org.primefaces.model.chart.DonutChartModel extends *org.primefaces.model.chart.ChartModel*

| Property | Default | Type | Description |
|---------------------------|---------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| data | null | List<Map<String,Object>> | Data as a list of map instances. |
| sliceMargin | 0 | Integer | Angular spacing between pie slices in degrees. |
| fill | true | Boolean | True or False to fill the slices. |
| showDataLabels | false | Boolean | True to False show data labels on slices. |
| dataFormat | percent | String | Either 'label', 'value', 'percent' or an array of labels to place on the pie slices. |
| dataLabelFormat String | null | String | Format string for data labels. If none, '%s' is used for "label" and for arrays, '%d' for value and '%d%%' for percentage. |
| dataLabelThreshold | 3 | Integer | Threshold in percentage (0-100) of pie area, below which no label will be displayed. This applies to all label types, not just to percentage labels. |
| showDatatip | true | Boolean | Displays tooltip when enabled. |
| datatipFormat | %s-%d | String | Format string for datatip. |
| datatipEditor | null | String | Name of client side function that returns html to provide custom content in datatip. |

HorizontalBarChartModel

org.primefaces.model.chart.HorizontalBarChartModel extends
org.primefaces.model.chart.BarChartModel

HorizontalBarChartModel is an extension to BarChartModel with y-axis used for the categories and x-axis for the data values.

LineChartSeries

org.primefaces.model.chart.LineChartSeries extends *org.primefaces.model.chart.ChartSeries*

| Property | Default | Type | Description |
|-------------|--------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| markerStyle | filledCircle | String | Style of the markers, valid values are <i>diamond</i> , <i>circle</i> , <i>square</i> , <i>x</i> , <i>plus</i> , <i>dash</i> , <i>filledDiamond</i> , <i>filledCircle</i> , <i>filledSquare</i> . |
| showLine | true | Boolean | Whether to actually draw the line or not. |

| Property | Default | Type | Description |
|--------------|---------|---------|------------------------------------------------------------|
| showMarker | true | Boolean | Displays markers at data points. |
| fill | false | Boolean | Fills the area between lines. |
| fillAlpha | 1 | Double | Opacity of the filled area. |
| smoothLine | false | Boolean | Enables smooth rendering. |
| disableStack | false | Boolean | When true, series data is not included in a stacked chart. |

LinearAxis

org.primefaces.model.chart.LinearAxis extends *org.primefaces.model.chart.Axis*

LinearAxis is the Axis implementation used to display numbers.

LineChartModel

org.primefaces.model.chart.LineChartModel extends
org.primefaces.model.chart.CartesianChartModel

| Property | Default | Type | Description |
|-------------|---------|--------------------|-----------------------------------------|
| stacked | null | List<ChartSeries> | Displays series in stacked format. |
| breakOnNull | HashMap | Map<AxisType,Axis> | Discontinues line plot for null values. |

MeterGaugeChartModel

org.primefaces.model.chart.MeterGaugeChartModel extends
org.primefaces.model.chart.ChartModel

| Property | Default | Type | Description |
|---------------------|---------|--------------|------------------------------------------------------------------------------------|
| value | null | Number | Value of the gauge. |
| intervals | null | List<Number> | List of ranges to be drawn around the gauge. |
| ticks | 0 | List<Number> | List of tick values. |
| gaugeLabel | true | String | Label text of the gauge. |
| gaugeLabelPosition | false | String | Where to position the label, either 'inside' or 'bottom'. |
| min | null | Double | Minimum value on the gauge. |
| max | null | Double | Maximum value on the gauge. |
| showTickLabels | true | Boolean | Displays tick labels next to ticks. |
| intervalInnerRadius | null | Integer | Radius of the inner circle of the interval ring. |
| intervalOuterRadius | 85 | Integer | Radius of the outer circle of the interval ring. |
| labelHeightAdjust | -25 | Integer | Number of Pixels to offset the label up (-) or down (+) from its default position. |

OhlcChartModel

org.primefaces.model.chart.OhlcChartModel extends *org.primefaces.model.chart.ChartModel*

| Property | Default | Type | Description |
|-------------|---------|-----------------------|------------------------------------|
| data | null | List<OhlcChartSeries> | Data as a list of OhlcChartSeries. |
| candleStick | false | Boolean | Displays series as candlestick. |

OhlcChartSeries

org.primefaces.model.chart.OhlcChartSeries extends *org.primefaces.model.chart.ChartSeries*

| Property | Default | Type | Description |
|----------|---------|-----------------------|-----------------------------------|
| value | null | List<OhlcChartSeries> | Data as a list of OhlChartSeries. |
| open | null | Double | Open value. |
| high | null | Double | High value. |
| low | null | Double | Low value. |
| close | null | Double | Close value. |

PieChartModel

org.primefaces.model.chart.PieChartModel extends *org.primefaces.model.chart.ChartModel*

| Property | Default | Type | Description |
|---------------------------|---------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| data | null | Map<String,Object> | Data as a Map instance. |
| diameter | null | Integer | Outer diameter of the pie, auto computed by default |
| sliceMargin | 0 | Integer | Angular spacing between pie slices in degrees. |
| fill | true | Boolean | True or False to fill the slices. |
| showDataLabels | false | Boolean | True to False show data labels on slices. |
| dataFormat | percent | String | Either 'label', 'value', 'percent' or an array of labels to place on the pie slices. |
| dataLabelFormat String | null | String | Format string for data labels. If none, '%s' is used for "label" and for arrays, '%d' for value and '%d%' for percentage. |
| dataLabelThreshold | 3 | Integer | Threshold in percentage (0-100) of pie area, below which no label will be displayed. This applies to all label types, not just to percentage labels. |
| showDatatip | true | Boolean | Displays tooltip when enabled. |
| datatipFormat | %s-%d | String | Format string for datatip. |
| datatipEditor | null | String | Name of client side function that returns html to provide custom content in datatip. |

3.16 Checkbox

Checkbox is a helper component of SelectManyCheckbox to implement custom layouts.

Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | checkbox |
| Component Class | org.primefaces.component.checkbox.Checkbox |
| Component Type | org.primefaces.component.Checkbox |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.CheckboxRenderer |
| Renderer Class | org.primefaces.component.checkbox.CheckboxRenderer |

Attributes

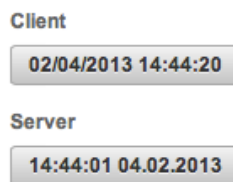
| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| disabled | false | Boolean | Disabled the component. |
| itemIndex | null | Integer | Index of the selectItem. |
| onchange | null | String | Client side callback to execute on state change. |
| for | null | String | Id of the selectManyCheckbox to attach to. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the container. |
| tabindex | null | String | Specifies the tab order of element in tab navigation. |

Getting started with Checkbox

See custom layout part in SelectManyCheckbox section for more information.

3.17 Clock

Clock displays server or client datetime live.



Info

| | |
|------------------|-----------------------------------------------------|
| Tag | clock |
| Component Class | org.primefaces.component.clock.Clock |
| Component Type | org.primefaces.component.Clock |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ClockRenderer |
| Renderer Class | org.primefaces.component.clock.ClockRenderer |

Attributes

| Name | Default | Type | Description |
|--------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| pattern | null | String | Datetime format. |
| mode | client | String | Mode value, valid values are client and server. |
| autoSync | false | Boolean | Syncs time periodically in server mode. |
| syncInterval | 60000 | Integer | Defines the sync in ms interval in autoSync setting. |

Getting Started with Clock

Clock has two modes, *client* (default) and *server*. In simple mode, datetime is displayed by just adding component on page. On page load, clock is initialized and start running based on client time.

```
<p:clock />
```

Server Mode

In server mode, clock initialized itself with the server's datetime and starts running on client side. To make sure client clock and server clock is synced, you can enable autoSync option that makes an ajax call to the server periodically to refresh the server time with client.

DateTime Format

Datetime format used can be changed using pattern attribute.

```
<p:clock pattern="HH:mm:ss dd.MM.yyyy" />
```

Skinning

Clock resides in a container element which *style* and *styleClass* options apply. Following is the list of structural style classes;

| Style Class | Applies |
|-------------|--------------------|
| .ui-clock | Container element. |

3.18 Collector

Collector is a simple utility to manage collections declaratively.

Info

| | |
|----------------------|-----------------------------------------------------|
| Tag | collector |
| ActionListener Class | org.primefaces.component.collector.Collector |

Attributes

| Name | Default | Type | Description |
|------------|---------|----------------------|----------------------------------------------------|
| value | null | Object | Value to be used in collection operation |
| addTo | null | java.util.Collection | Reference to the Collection instance |
| removeFrom | null | java.util.Collection | Reference to the Collection instance |
| unique | true | Boolean | When enabled, rejects duplicate items on addition. |

Getting started with Collector

Collector requires a collection and a value to work with. It's important to override equals and hashCode methods of the value object to make collector work.

```
public class BookBean {
    private Book book = new Book();
    private List<Book> books;

    public CreateBookBean() {
        books = new ArrayList<Book>();
    }

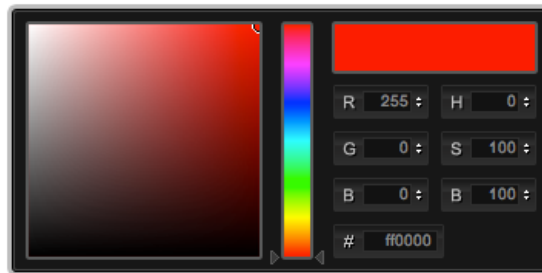
    //getters and setters
}
```

```
<p:commandButton value="Add">
    <p:collector value="#{bookBean.book}" addTo="#{bookBean.books}" />
</p:commandButton>
```

```
<p:commandLink value="Remove">
    <p value="#{book}" removeFrom="#{createBookBean.books}" />
</p:commandLink>
```

3.19 Color Picker

ColorPicker is an input component with a color palette.



Info

| | |
|------------------|-----------------------------------------------------------------|
| Tag | colorPicker |
| Component Class | org.primefaces.component.colorpicker.ColorPicker |
| Component Type | org.primefaces.component.ColorPicker |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ColorPickerRenderer |
| Renderer Class | org.primefaces.component.colorpicker.ColorPickerRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component. |
| converter | null | Converter/String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required. |
| validator | null | MethodExpr | A method expression that refers to a method for validation the input. |

| Name | Default | Type | Description |
|---------------------|---------|---------------------|----------------------------------------------------------------------------------------------------|
| valueChangeListener | null | ValueChangeListener | A method binding expression that refers to a method for handling a <code>valueChangeEvent</code> . |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fails. |
| widgetVar | null | String | Name of the client side widget. |
| mode | popup | String | Display mode, valid values are "popup" and "inline". |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |

Getting started with ColorPicker

ColorPicker's value should be a hex string.

```
public class Bean {
    private String color;

    public String getColor() {
        return this.color;
    }

    public void setColor(String color) {
        this.color = color;
    }
}
```

```
<p:colorPicker value="#{bean.color}" />
```

Display Mode

ColorPicker has two modes, default mode is *popup* and other available option is *inline*.

```
<p:colorPicker value="#{bean.color}" mode="inline"/>
```


Skinning

ColorPicker resides in a container element which *style* and *styleClass* options apply. Following is the list of structural style classes;

| Style Class | Applies |
|-------------------------------|-------------------------|
| .ui-colorpicker | Container element. |
| .ui-colorpicker_color | Background of gradient. |
| .ui-colorpicker_hue | Hue element. |
| .ui-colorpicker_new_color | New color display. |
| .ui-colorpicker_current_color | Current color display. |
| .ui-colorpicker-rgb-r | Red input. |
| .ui-colorpicker-rgb-g | Green input. |
| .ui-colorpicker-rgb-b | Blue input. |
| .ui-colorpicker-rgb-h | Hue input. |
| .ui-colorpicker-rgb-s | Saturation input. |
| .ui-colorpicker-rgb-b | Brightness input. |
| .ui-colorpicker-rgb-hex | Hex input. |

3.20 Column

Column is an extended version of the standard column used by various components like datatable, treetable and more.

Info

| | |
|------------------|-----------------------------------------------|
| Tag | column |
| Component Class | org.primefaces.component.column.Column |
| Component Type | org.primefaces.component.Column |
| Component Family | org.primefaces.component |

Attributes

| Name | Default | Type | Description |
|------------------|------------|------------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| style | null | String | Inline style of the column. |
| styleClass | null | String | Style class of the column. |
| sortBy | null | ValueExpr | ValueExpression to be used for sorting. |
| sortFunction | null | MethodExpr | Custom pluggable sortFunction. |
| filterBy | null | ValueExpr | ValueExpression to be used for filtering. |
| filterStyle | null | String | Inline style of the filter element |
| filterStyleClass | null | String | Style class of the filter element |
| filterOptions | null | Object | A collection of selectitems for filter dropdown. |
| filterMatchMode | startsWith | String | Match mode for filtering. |
| filterPosition | bottom | String | Location of the column filter with respect to header content. Options are 'bottom'(default) and 'top'. |
| rowspan | 1 | Integer | Defines the number of rows the column spans. |
| colspan | 1 | Integer | Defines the number of columns the column spans. |
| headerText | null | String | Shortcut for header facet. |
| footerText | null | String | Shortcut for footer facet. |

| Name | Default | Type | Description |
|-----------------|---------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| selectionMode | null | String | Enables selection mode. |
| filterMaxLength | null | Integer | Maximum number of characters for an input filter. |
| resizable | true | Boolean | Specifies resizable feature at column level. Datatable's resizableColumns must be enabled to use this option. |
| width | null | String | Width in pixels or percentage. |
| exportable | true | Boolean | Defines if the column should be exported by dataexporter. |
| filterValue | null | Object | Value of the filter field. |
| toggable | true | Boolean | Defines if panel is toggable by columnToggler component. Default value is true and a false value marks the column as static. |
| filterFunction | null | MethodExpr | Custom implementation to filter a value against a constraint. |
| field | null | String | Name of the field to pass lazy load method for filtering and sorting. If not specified, filterBy-sortBy values are used to identify the field name. |
| priority | 0 | Integer | Priority of the column defined as an integer, lower values have more priority. |
| sortable | true | Boolean | Boolean value to mark column as sortable. |
| filterable | true | Boolean | Boolean value to mark column as filterable. |
| visible | true | Boolean | Controls the visibility of the column. |
| selectRow | true | Boolean | Whether clicking the column selects the row when parent component has row selection enabled, default is true. |
| ariaHeaderText | null | String | Label to read by screen readers, when not specified headerText is used. |
| exportFunction | null | MethodExpr | Custom pluggable exportFunction for data exporter. |

Getting Started with Column

As column is a reused component, see documentation of components that use a column.

Note

Not all attributes of column are implemented by the components that utilize column.

3.21 Columns

Columns is used by datatable to create columns dynamically.

Info

| | |
|------------------|------------------------------------------------|
| Tag | columns |
| Component Class | org.primefaces.component.column.Columns |
| Component Type | org.primefaces.component.Columns |
| Component Family | org.primefaces.component |

Attributes

| Name | Default | Type | Description |
|------------------|------------|------------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Data to represent columns. |
| var | null | String | Name of iterator to access a column. |
| style | null | String | Inline style of the column. |
| styleClass | null | String | Style class of the column. |
| sortBy | null | ValueExpr | ValueExpression to be used for sorting. |
| sortFunction | null | MethodExpr | Custom pluggable sortFunction. |
| filterBy | null | ValueExpr | ValueExpression to be used for filtering. |
| filterStyle | null | String | Inline style of the filter element |
| filterStyleClass | null | String | Style class of the filter element |
| filterOptions | null | Object | A collection of selectitems for filter dropdown. |
| filterMatchMode | startsWith | String | Match mode for filtering. |
| rowspan | 1 | Integer | Defines the number of rows the column spans. |
| colspan | 1 | Integer | Defines the number of columns the column spans. |
| headerText | null | String | Shortcut for header facet. |
| footerText | null | String | Shortcut for footer facet. |

| Name | Default | Type | Description |
|-----------------|---------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| filterMaxLength | null | Integer | Maximum number of characters for an input filter. |
| resizable | true | Boolean | Specifies resizable feature at column level. Datatable's resizableColumns must be enabled to use this option. |
| width | null | String | Width in pixels or percentage. |
| exportable | true | Boolean | Defines if the column should be exported by dataexporter. |
| columnIndexVar | null | String | Name of iterator to refer each index. |
| filterValue | null | Object | Value of the filter field. |
| toggable | true | Boolean | Defines if panel is toggable by columnToggler component. Default value is true and a false value marks the column as static. |
| filterFunction | null | MethodExpr | Custom implementation to filter a value against a constraint. |
| field | null | String | Name of the field to pass lazy load method for filtering and sorting. If not specified, filterBy-sortBy values are used to identify the field name. |
| priority | 0 | Integer | Priority of the column defined as an integer, lower values have more priority. |
| sortable | true | Boolean | Boolean value to mark column as sortable. |
| filterable | true | Boolean | Boolean value to mark column as filterable. |
| visible | true | Boolean | Controls the visibility of the column. |
| selectRow | true | Boolean | Whether clicking the column selects the row when parent component has row selection enabled, default is true. |

Getting Started with Columns

See dynamic columns section in datatable documentation for detailed information.

3.22 ColumnGroup

ColumnGroup is used by datatable for column grouping.

Info

| | |
|------------------|---------------------------------------------------------|
| Tag | columnGroup |
| Component Class | org.primefaces.component.columngroup.ColumnGroup |
| Component Type | org.primefaces.component. ColumnGroup |
| Component Family | org.primefaces.component |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| type | null | String | Type of group, valid values are “header” and “footer”. |

Getting Started with ColumnGroup

See grouping section in datatable documentation for detailed information.

3.23 ColumnToggler

ColumnToggler is a helper component for datatable to toggle visibility of columns.

Info

| | |
|------------------|---------------------------------------------------------------------|
| Tag | columnToggler |
| Component Class | org.primefaces.component.columngroup.ColumnGroup |
| Component Type | org.primefaces.component. ColumnGroup |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ColumnTogglerRenderer |
| Renderer Class | org.primefaces.component.columntoggler.ColumnTogglerRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| trigger | null | String | A search expression resolving to a component to get attached to. |
| datasource | null | String | A search expression resolving to a DataTable component whose columns to be toggled. |

Getting Started with ColumnToggler

See column toggler section in datatable documentation for detailed information.

3.24 CommandButton

CommandButton is an extended version of standard commandButton with ajax and theming.



Info

| | |
|------------------|---------------------------------------------------------------------|
| Tag | commandButton |
| Component Class | org.primefaces.component.commandbutton.CommandButton |
| Component Type | org.primefaces.component.CommandButton |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.CommandButtonRenderer |
| Renderer Class | org.primefaces.component.commandbutton.CommandButtonRenderer |

Attributes

| Name | Default | Type | Description |
|----------------|---------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | String | Label for the button |
| action | null | MethodExpr/ String | A method expression or a String outcome that'd be processed when button is clicked. |
| actionListener | null | MethodExpr | An actionlistener that'd be processed when button is clicked. |
| immediate | false | Boolean | Boolean value that determines the phaseId, when true actions are processed at apply_request_values, when false at invoke_application phase. |
| type | submit | String | Sets the behavior of the button. |
| ajax | true | Boolean | Specifies the submit mode, when set to true(default), submit would be made with Ajax. |
| async | false | Boolean | When set to true, ajax requests are not queued. |
| process | null | String | Component(s) to process partially instead of whole view. |
| update | null | String | Component(s) to be updated with ajax. |

| Name | Default | Type | Description |
|---------------------|---------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| onstart | null | String | Client side callback to execute before ajax request is begins. |
| oncomplete | null | String | Client side callback to execute when ajax request is completed. |
| onsuccess | null | String | Client side callback to execute when ajax request succeeds. |
| onerror | null | String | Client side callback to execute when ajax request fails. |
| global | true | Boolean | Defines whether to trigger ajaxStatus or not. |
| delay | null | String | If less than <i>delay</i> milliseconds elapses between calls to <i>request()</i> only the most recent one is sent and all other requests are discarded. If this option is not specified, or if the value of <i>delay</i> is the literal string 'none' without the quotes, no delay is used. |
| partialSubmit | false | Boolean | Enables serialization of values belonging to the partially processed components only. |
| partialSubmitFilter | null | String | Selector to use when partial submit is on, default is ":input" to select all descendant inputs of a partially processed components. |
| resetValues | false | Boolean | If true, local values of input components to be updated within the ajax request would be reset. |
| ignoreAutoUpdate | false | Boolean | If true, components which autoUpdate="true" will not be updated for this request. If not specified, or the value is false, no such indication is made. |
| timeout | 0 | Integer | Timeout for the ajax request in milliseconds. |
| style | null | String | Inline style of the button element. |
| styleClass | null | String | StyleClass of the button element. |
| onblur | null | String | Client side callback to execute when button loses focus. |
| onchange | null | String | Client side callback to execute when button loses focus and its value has been modified since gaining focus. |
| onclick | null | String | Client side callback to execute when button is clicked. |
| ondblclick | null | String | Client side callback to execute when button is double clicked. |
| onfocus | null | String | Client side callback to execute when button receives focus. |
| onkeydown | null | String | Client side callback to execute when a key is pressed down over button. |
| onkeypress | null | String | Client side callback to execute when a key is pressed and released over button. |

| Name | Default | Type | Description |
|-------------|---------|---------|---------------------------------------------------------------------------------------------------|
| onkeyup | null | String | Client side callback to execute when a key is released over button. |
| onmousedown | null | String | Client side callback to execute when a pointer button is pressed down over button. |
| onmousemove | null | String | Client side callback to execute when a pointer button is moved within button. |
| onmouseout | null | String | Client side callback to execute when a pointer button is moved away from button. |
| onmouseover | null | String | Client side callback to execute when a pointer button is moved onto button. |
| onmouseup | null | String | Client side callback to execute when a pointer button is released over button. |
| onselect | null | String | Client side callback to execute when text within button is selected by user. |
| accesskey | null | String | Access key that when pressed transfers focus to the button. |
| alt | null | String | Alternate textual description of the button. |
| dir | null | String | Direction indication for text that does not inherit directionality. Valid values are LTR and RTL. |
| disabled | false | Boolean | Disables the button. |
| image | null | String | Style class for the button icon. (deprecated: use icon) |
| label | null | String | A localized user presentable name. |
| lang | null | String | Code describing the language used in the generated markup for this component. |
| tabindex | null | Integer | Position of the button element in the tabbing order. |
| title | null | String | Advisory tooltip information. |
| icon | null | String | Icon of the button as a css class. |
| iconPos | left | String | Position of the icon. |
| inline | false | String | Used by PrimeFaces mobile only. |
| escape | true | Boolean | Defines whether label would be escaped or not. |
| widgetVar | null | String | Name of the client side widget. |
| form | null | String | Form to serialize for an ajax request. Default is the enclosing form. |

Getting started with CommandButton

CommandButton usage is similar to standard commandButton, by default commandButton submits its enclosing form with ajax.

```
<p:commandButton value="Save" actionListener="#{bookBean.saveBook}" />
```

```
public class BookBean {
    public void saveBook() {
        //Save book
    }
}
```

Reset Buttons

Reset buttons do not submit the form, just resets the form contents.

```
<p:commandButton type="reset" value="Reset" />
```

Push Buttons

Push buttons are used to execute custom javascript without causing an ajax/non-ajax request. To create a push button set type as "button".

```
<p:commandButton type="button" value="Alert" onclick="alert('Prime')" />
```

AJAX and Non-AJAX

CommandButton has built-in ajax capabilities, ajax submit is enabled by default and configured using *ajax* attribute. When ajax attribute is set to false, form is submitted with a regular full page refresh.

The *update* attribute is used to partially update other component(s) after the ajax response is received. Update attribute takes a comma or white-space separated list of JSF component ids to be updated. Basically any JSF component, not just PrimeFaces components should be updated with the Ajax response. In the following example, form is submitted with ajax and *display* outputText is updated with the ajax response.

```
<h:form>
    <h:inputText value="#{bean.text}" />
    <p:commandButton value="Submit" update="display"/>
    <h:outputText value="#{bean.text}" id="display" />
</h:form>
```

Tip: You can use the ajaxStatus component to notify users about the ajax request.

Icons

An icon on a button is provided using *icon* option. *iconPos* is used to define the position of the button which can be “left” or “right”.

```
<p:commandButton value="With Icon" icon="disk"/>
<p:commandButton icon="disk"/>
```

.disk is a simple css class with a background property;

```
.disk {
    background-image: url('disk.png') !important;
}
```

You can also use the pre-defined icons from ThemeRoller like *ui-icon-search*.

Client Side API

Widget: *PrimeFaces.widget.CommandButton*

| Method | Params | Return Type | Description |
|-----------|--------|-------------|-----------------|
| disable() | - | void | Disables button |
| enable() | - | void | Enables button |

Skinning

CommandButton renders a button tag which *style* and *styleClass* applies. Following is the list of structural style classes;

| Style Class | Applies |
|-----------------------------|--------------------------------------|
| <i>.ui-button</i> | Button element |
| <i>.ui-button-text-only</i> | Button element when icon is not used |
| <i>.ui-button-text</i> | Label of button |

As skinning style classes are global, see the main theming section for more information.

3.25 CommandLink

CommandLink extends standard JSF commandLink with Ajax capabilities.

Info

| | |
|------------------|------------------------------------------------------------------|
| Tag | commandLink |
| Component Class | org.primefaces.component.commandlink.CommandLink |
| Component Type | org.primefaces.component.CommandLink |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.CommandLinkRenderer |
| Renderer Class | org.primefaces.component. commandlink.CommandLinkRenderer |

Attributes

| Name | Default | Type | Description |
|----------------|---------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | String | Href value of the rendered anchor. |
| action | null | MethodExpr/ String | A method expression or a String outcome that'd be processed when link is clicked. |
| actionListener | null | MethodExpr | An actionlistener that'd be processed when link is clicked. |
| immediate | false | Boolean | Boolean value that determines the phaseId, when true actions are processed at apply_request_values, when false at invoke_application phase. |
| async | false | Boolean | When set to true, ajax requests are not queued. |
| process | null | String | Component(s) to process partially instead of whole view. |
| ajax | true | Boolean | Specifies the submit mode, when set to true(default), submit would be made with Ajax. |
| update | null | String | Component(s) to be updated with ajax. |
| onstart | null | String | Client side callback to execute before ajax request is begins. |

| Name | Default | Type | Description |
|---------------------|---------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| oncomplete | null | String | Client side callback to execute when ajax request is completed. |
| onsuccess | null | String | Client side callback to execute when ajax request succeeds. |
| onerror | null | String | Client side callback to execute when ajax request fails. |
| global | true | Boolean | Defines whether to trigger ajaxStatus or not. |
| delay | null | String | If less than <i>delay</i> milliseconds elapses between calls to <i>request()</i> only the most recent one is sent and all other requests are discarded. If this option is not specified, or if the value of <i>delay</i> is the literal string 'none' without the quotes, no delay is used. |
| partialSubmit | false | Boolean | Enables serialization of values belonging to the partially processed components only. |
| partialSubmitFilter | null | String | Selector to use when partial submit is on, default is ":input" to select all descendant inputs of a partially processed components. |
| resetValues | false | Boolean | If true, local values of input components to be updated within the ajax request would be reset. |
| ignoreAutoUpdate | false | Boolean | If true, components which autoUpdate="true" will not be updated for this request. If not specified, or the value is false, no such indication is made. |
| timeout | 0 | Integer | Timeout for the ajax request in milliseconds. |
| style | null | String | Style to be applied on the anchor element |
| styleClass | null | String | StyleClass to be applied on the anchor element |
| onblur | null | String | Client side callback to execute when link loses focus. |
| onclick | null | String | Client side callback to execute when link is clicked. |
| ondblclick | null | String | Client side callback to execute when link is double clicked. |
| onfocus | null | String | Client side callback to execute when link receives focus. |
| onkeydown | null | String | Client side callback to execute when a key is pressed down over link. |
| onkeypress | null | String | Client side callback to execute when a key is pressed and released over link. |
| onkeyup | null | String | Client side callback to execute when a key is released over link. |
| onmousedown | null | String | Client side callback to execute when a pointer button is |

| Name | Default | Type | Description |
|-------------|---------|---------|---------------------------------------------------------------------------------------------------------------------------------------------|
| | | | pressed down over link. |
| onmousemove | null | String | Client side callback to execute when a pointer button is moved within link. |
| onmouseout | null | String | Client side callback to execute when a pointer button is moved away from link. |
| onmouseover | null | String | Client side callback to execute when a pointer button is moved onto link. |
| onmouseup | null | String | Client side callback to execute when a pointer button is released over link. |
| accesskey | null | String | Access key that when pressed transfers focus to the link. |
| charset | null | String | Character encoding of the resource designated by this hyperlink. |
| coords | null | String | Position and shape of the hot spot on the screen for client use in image maps. |
| dir | null | String | Direction indication for text that does not inherit directionality. Valid values are LTR and RTL. |
| disabled | null | Boolean | Disables the link |
| hreflang | null | String | Language code of the resource designated by the link. |
| rel | null | String | Relationship from the current document to the anchor specified by the link, values are provided by a space-separated list of link types. |
| rev | null | String | A reverse link from the anchor specified by this link to the current document, values are provided by a space-separated list of link types. |
| shape | null | String | Shape of hot spot on the screen, valid values are default, rect, circle and poly. |
| tabindex | null | Integer | Position of the button element in the tabbing order. |
| target | null | String | Name of a frame where the resource targeted by this link will be displayed. |
| title | null | String | Advisory tooltip information. |
| type | null | String | Type of resource referenced by the link. |
| form | null | String | Form to serialize for an ajax request. Default is the enclosing form. |

Getting Started with CommandLink

CommandLink is used just like the standard `h:commandLink`, difference is `form` is submitted with `ajax` by default.

```
public class BookBean {  
  
    public void saveBook() {  
        //Save book  
    }  
}
```

```
<p:commandLink actionListener="#{bookBean.saveBook}">  
    <h:outputText value="Save" />  
</p:commandLink>
```

Skinning

CommandLink renders an html anchor element that *style* and *styleClass* attributes apply.

3.26 Confirm

Confirm is a behavior element used to integrate with global confirm dialog.

Info

| | |
|-------------|------------------------------------------------|
| Tag | confirm |
| Behavior Id | org.primefaces.behavior.ConfirmBehavior |

Attributes

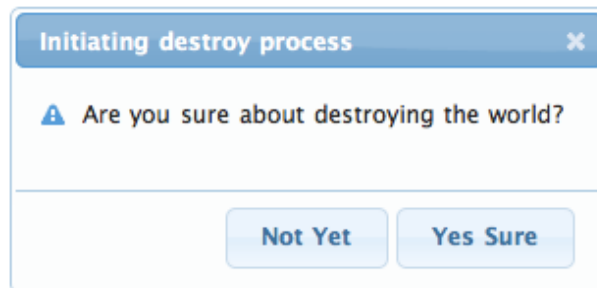
| Name | Default | Type | Description |
|----------|---------|---------|---------------------------------------|
| header | null | String | Header of confirm dialog. |
| message | null | String | Message to display in confirm dialog. |
| icon | null | String | Icon to display next to message. |
| disabled | null | Boolean | Disables confirm behavior when true. |

Getting started with Confirm

See global confirm dialog topic in next section for details.

3.27 ConfirmDialog

ConfirmDialog is a replacement to the legacy javascript confirmation box. Skinning, customization and avoiding popup blockers are notable advantages over classic javascript confirmation.



Info

| | |
|------------------|---------------------------------------------------------------------|
| Tag | confirmDialog |
| Component Class | org.primefaces.component.confirmdialog.ConfirmDialog |
| Component Type | org.primefaces.component.ConfirmDialog |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ConfirmDialogRenderer |
| Renderer Class | org.primefaces.component.confirmdialog.ConfirmDialogRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| message | null | String | Text to be displayed in body. |
| header | null | String | Text for the header. |
| severity | null | String | Message severity for the displayed icon. |
| width | auto | Integer | Width of the dialog in pixels |
| height | auto | Integer | Width of the dialog in pixels |
| style | null | String | Inline style of the dialog container. |
| styleClass | null | String | Style class of the dialog container |

| Name | Default | Type | Description |
|---------------|---------|---------|-----------------------------------------------------------------------------------------------------------|
| closable | true | Boolean | Defines if close icon should be displayed or not |
| appendTo | false | Boolean | Appends the dialog to the element defined by the given search expression. |
| visible | false | Boolean | Whether to display confirm dialog on load. |
| showEffect | null | String | Effect to use on showing dialog. |
| hideEffect | null | String | Effect to use on hiding dialog. |
| closeOnEscape | false | Boolean | Defines if dialog should hide on escape key. |
| dir | ltr | String | Defines text direction, valid values are <i>ltr</i> and <i>rtl</i> . |
| global | false | Boolean | When enabled, <code>confirmDialog</code> becomes a shared for other components that require confirmation. |
| responsive | false | Boolean | In responsive mode, dialog adjusts itself based on screen width. |

Getting started with ConfirmDialog

`ConfirmDialog` has two modes; global and non-global. Non-Global mode is almost same as the dialog component used with a simple client side api, `show()` and `hide()`.

```
<h:form>
  <p:commandButton type="button" onclick="PF('cd').show()" />

  <p:confirmDialog message="Are you sure about destroying the world?"
    header="Initiating destroy process" severity="alert"
    widgetVar="cd">
    <p:commandButton value="Yes Sure" actionListener="#{buttonBean.destroyWorld}"
      update="messages" oncomplete="PF('cd').hide()"/>
    <p:commandButton value="Not Yet" onclick="PF('cd').hide();" type="button" />
  </p:confirmDialog>
</h:form>
```

Message and Severity

Message can be defined in two ways, either via message option or message facet. Message facet is useful if you need to place custom content instead of simple text. Note that header can also be defined using the `header` attribute or the `header` facet. Severity defines the icon to display next to the message, default severity is *alert* and the other option is *info*.

```
<p:confirmDialog widgetVar="cd" header="Confirm">
  <f:facet name="message">
    <h:outputText value="Are you sure?" />
  </f:facet>
  //content
</p:confirmDialog>
```

Global

Creating a `confirmDialog` for a specific action is a repetitive task, to solve this global `confirmDialog` which is a singleton has been introduced. Trigger components need to have `p:confirm` behavior to use the confirm dialog. Component that trigger the actual command in dialog must have `ui-confirm-dialog-yes` style class, similarly component to cancel the command must have `ui-confirm-dialog-no`. At the moment `p:confirm` is supported by `p:commandButton`, `p:commandLink` and `p:menuItem`.

```
<p:growl id="messages" />

<p:commandButton value="Save" actionListener="#{bean.save}" update="messages">
  <p:confirm header="Confirmation" message="Sure?" icon="ui-icon-alert"/>
</p:commandButton>

<p:confirmDialog global="true">
  <p:commandButton value="Yes" type="button" styleClass="ui-confirmdialog-yes"
    icon="ui-icon-check"/>
  <p:commandButton value="No" type="button" styleClass="ui-confirmdialog-no"
    icon="ui-icon-close"/>
</p:confirmDialog>
```

Client Side API

Widget: *PrimeFaces.widget.ConfirmDialog*

| Method | Params | Return Type | Description |
|---------------------|--------|-------------|------------------|
| <code>show()</code> | - | void | Displays dialog. |
| <code>hide()</code> | - | void | Closes dialog. |

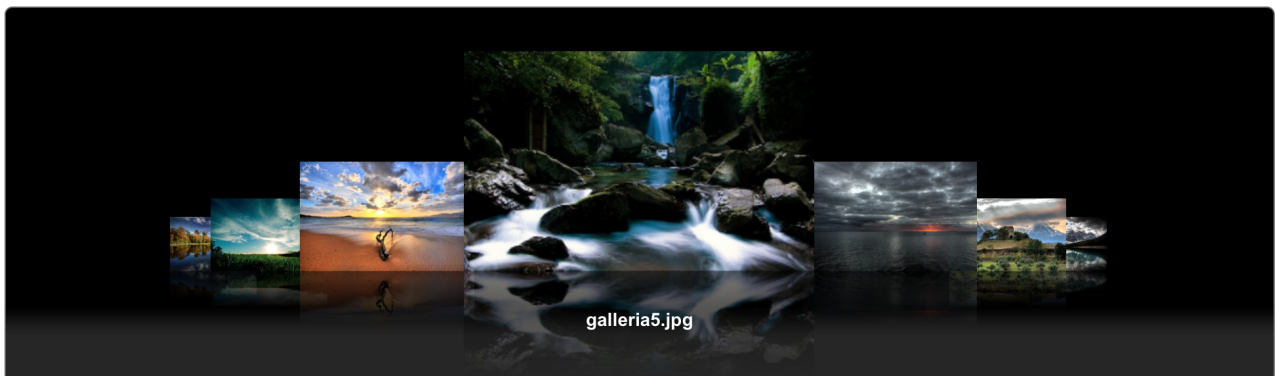
Skinning

`ConfirmDialog` resides in a main container element which *style* and *styleClass* options apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|----------------------------------------|-----------------------------|
| <code>.ui-dialog</code> | Container element of dialog |
| <code>.ui-dialog-titlebar</code> | Title bar |
| <code>.ui-dialog-title</code> | Header text |
| <code>.ui-dialog-titlebar-close</code> | Close icon |
| <code>.ui-dialog-content</code> | Dialog body |
| <code>.ui-dialog-buttonpane</code> | Footer button panel |

3.28 ContentFlow

ContentFlow is a horizontal content gallery component with a slide animation.



Info

| | |
|------------------|-----------------------------------------------------------------|
| Tag | contentFlow |
| Component Class | org.primefaces.component.contentflow.ContentFlow |
| Component Type | org.primefaces.component.ContentFlow |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ContentFlowRenderer |
| Renderer Class | org.primefaces.component.contentflow.ContentFlowRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| widgetVar | null | String | Name of the client side widget. |
| value | null | String | Collection of items to display. |
| var | null | String | Name of the iterator to display an item. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |

Getting Started with ContentFlow

ContentFlow requires content as children that can either be defined dynamically using iteration or one by one. Each item must have the content style class applied as well.

Static Images

```
<p:contentFlow>
  <p:graphicImage value="/images/photo1.jpg" styleClass="content" />
  <p:graphicImage value="/images/photo2.jpg" styleClass="content" />
  <p:graphicImage value="/images/photo2.jpg" styleClass="content" />
</p:contentFlow>
```

Dynamic Images

```
<p:contentFlow var="image" value="#{bean.images}">
  <p:graphicImage value="/images/#{image}" styleClass="content" />
</p:contentFlow>
```

Caption

To present a caption along with an item, embed a div with "caption" style class inside.

```
<p:contentFlow var="image" value="#{bean.images}">
  <p:graphicImage value="#{image.path}" styleClass="content" />
  <div class="caption">#{image.title}</div>
</p:contentFlow>
```

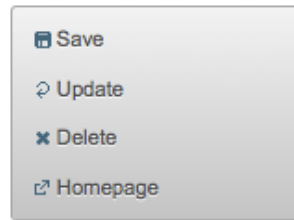
Skinning

ContentFlow resides in a container element which *style* and *styleClass* options apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|-----------------|------------------------|
| .ui-contentflow | Container element. |
| .flow | Container of item list |
| .item | Item container |
| .caption | Caption element |

3.29 ContextMenu

ContextMenu provides an overlay menu displayed on mouse right-click event.



Info

| | |
|------------------|-----------------------------------------------------------------|
| Tag | contextMenu |
| Component Class | org.primefaces.component.contextmenu.ContextMenu |
| Component Type | org.primefaces.component.ContextMenu |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ContextMenuRenderer |
| Renderer Class | org.primefaces.component.contextmenu.ContextMenuRenderer |

Attributes

| Name | Default | Type | Description |
|---------------|----------|-----------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| for | null | String | Id of the component to attach to |
| style | null | String | Style of the main container element |
| styleClass | null | String | Style class of the main container element |
| model | null | MenuModel | Menu model instance to create menu programmatically. |
| nodeType | null | String | Specific type of tree nodes to attach to. |
| event | null | String | Event to bind contextMenu display, default is contextmenu aka right click. |
| beforeShow | null | String | Client side callback to execute before showing. |
| selectionMode | multiple | String | Defines the selection behavior, e.g "single" or "multiple". |

| Name | Default | Type | Description |
|--------------|---------|--------|-----------------------------------------------------|
| targetFilter | null | String | Selector to filter the elements to attach the menu. |

Getting started with ContextMenu

ContextMenu is created with submenus and menuitems. Optional for attribute defines which component the contextMenu is attached to. When for is not defined, contextMenu is attached to the page meaning, right-click on anywhere on page will display the menu.

```
<p:contextMenu>
  <p:menuItem value="Save" actionListener="#{bean.save}" update="msg"/>
  <p:menuItem value="Delete" actionListener="#{bean.delete}" ajax="false"/>
  <p:menuItem value="Go Home" url="www.primefaces.org" target="_blank"/>
</p:contextMenu>
```

ContextMenu example above is attached to the whole page and consists of three different menuitems with different use cases. First menuItem triggers an ajax action, second one triggers a non-ajax action and third one is used for navigation.

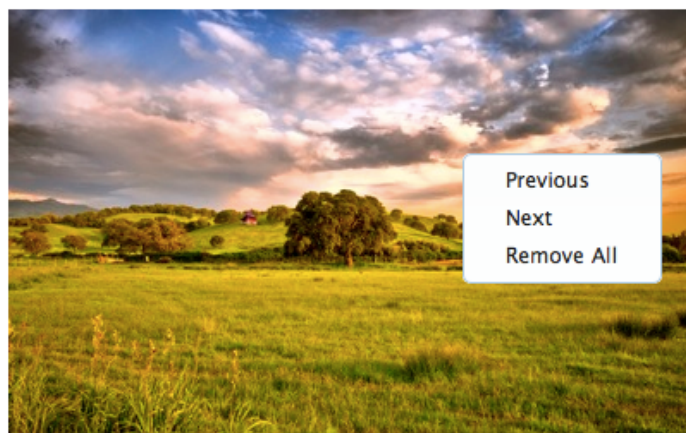
Attachment

ContextMenu can be attached to any JSF component, this means right clicking on the attached component will display the contextMenu. Following example demonstrates an integration between contextMenu and imageSwitcher, contextMenu here is used to navigate between images.

```
<p:imageSwitch id="images" widgetVar="gallery" slideshowAuto="false">
  <p:graphicImage value="/images/nature1.jpg" />
  <p:graphicImage value="/images/nature2.jpg" />
  <p:graphicImage value="/images/nature3.jpg" />
  <p:graphicImage value="/images/nature4.jpg" />
</p:imageSwitch>

<p:contextMenu for="images">
  <p:menuItem value="Previous" url="#" onclick="PF('gallery').previous()" />
  <p:menuItem value="Next" url="#" onclick="PF('gallery').next()" />
</p:contextMenu>
```

Now right-clicking anywhere on an image will display the contextMenu like;



Data Components

Data components like `datatable`, `tree` and `treeTable` has special integration with context menu, see the documentation of these component for more information.

Dynamic Menus

`ContextMenu` can be created programmatically as well, see the dynamic menus part in menu component section for more information and an example.

Skinning

`ContextMenu` resides in a main container which *style* and *styleClass* attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|--------------------------------|-------------------------------|
| <code>.ui-contextmenu</code> | Container element of menu |
| <code>.ui-menu-list</code> | List container |
| <code>.ui-menuitem</code> | Each menu item |
| <code>.ui-menuitem-link</code> | Anchor element in a link item |
| <code>.ui-menuitem-text</code> | Text element in an item |

As skinning style classes are global, see the main theming section for more information.

3.30 Dashboard

Dashboard provides a portal like layout with drag&drop based reorder capabilities.



Info

| | |
|------------------|-------------------------------------------------------------|
| Tag | dashboard |
| Component Class | org.primefaces.component.dashboard.Dashboard |
| Component Type | org.primefaces.component.Dashboard |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.DashboardRenderer |
| Renderer Class | org.primefaces.component.dashboard.DashboardRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|-----------------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget |
| model | null | Dashboard Model | Dashboard model instance representing the layout of the UI. |
| disabled | false | Boolean | Disables reordering feature. |
| style | null | String | Inline style of the dashboard container |
| styleClass | null | String | Style class of the dashboard container |

Getting started with Dashboard

Dashboard is backed by a DashboardModel and consists of panel components.

```
<p:dashboard model="#{bean.model}">
  <p:panel id="sports">
    //Sports Content
  </p:panel>
  <p:panel id="finance">
    //Finance Content
  </p:panel>

  //more panels like lifestyle, weather, politics...
</p:dashboard>
```

Dashboard model simply defines the number of columns and the widgets to be placed in each column. See the end of this section for the detailed Dashboard API.

```
public class Bean {

    private DashboardModel model;

    public Bean() {
        model = new DefaultDashboardModel();
        DashboardColumn column1 = new DefaultDashboardColumn();
        DashboardColumn column2 = new DefaultDashboardColumn();
        DashboardColumn column3 = new DefaultDashboardColumn();

        column1.addWidget("sports");
        column1.addWidget("finance");
        column2.addWidget("lifestyle");
        column2.addWidget("weather");
        column3.addWidget("politics");

        model.addColumn(column1);
        model.addColumn(column2);
        model.addColumn(column3);
    }
}
```

State

Dashboard is a stateful component, whenever a widget is reordered dashboard model will be updated, by persisting the user changes so you can easily create a stateful dashboard.

Ajax Behavior Events

“reorder” is the one and only ajax behavior event provided by dashboard, this event is fired when dashboard panels are reordered. A defined listener will be invoked by passing an *org.primefaces.event.DashboardReorderEvent* instance containing information about reorder.

Following dashboard displays a message about the reorder event

```

<p:dashboard model="#{bean.model}">
    <p:ajax event="reorder" update="messages" listener="#{bean.handleReorder}" />
    //panels
</p:dashboard>

<p:growl id="messages" />

```

```

public class Bean {

    ...

    public void handleReorder(DashboardReorderEvent event) {
        String widgetId = event.getWidgetId();
        int widgetIndex = event.getItemIndex();
        int columnIndex = event.getColumnIndex();
        int senderColumnIndex = event.getSenderColumnIndex();

        //Add facesmessage
    }
}

```

If a widget is reordered in the same column, *senderColumnIndex* will be null. This field is populated only when a widget is transferred to a column from another column. Also when the listener is invoked, dashboard has already updated its model.

Disabling Dashboard

If you'd like to disable reordering feature, set *disabled* option to true.

```

<p:dashboard disabled="true" ...>
    //panels
</p:dashboard>

```

Toggle, Close and Options Menu

Widgets presented in dashboard can be closable, toggleable and have options menu as well, dashboard doesn't implement these by itself as these features are already provided by the panel component. See panel component section for more information.

```

<p:dashboard model="#{dashboardBean.model}">
    <p:panel id="sports" closable="true" toggleable="true">
        //Sports Content
    </p:panel>
</p:dashboard>

```

New Widgets

Draggable component is used to add new widgets to the dashboard. This way you can add new panels from outside of the dashboard.

```

<p:dashboard model="#{dashboardBean.model}" id="board">
  //panels
</p:dashboard>
<p:panel id="newwidget" />
<p:draggable for="newwidget" helper="clone" dashboard="board" />

```

Skining

Dashboard resides in a container element which style and styleClass options apply. Following is the list of structural style classes;

| Style Class | Applies |
|----------------------|--------------------------------|
| .ui-dashboard | Container element of dashboard |
| .ui-dashboard-column | Each column in dashboard |
| div.ui-state-hover | Placeholder |

As skinning style classes are global, see the main theming section for more information. Here is an example based on a different theme;



Tips

- Provide a column width using *ui-dashboard-column* style class otherwise empty columns might not receive new widgets.

Dashboard Model API

org.primefaces.model.DashboardModel (*org.primefaces.model.map.DefaultDashboardModel* is the default implementation)

| Method | Description |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <code>void addColumn(DashboardColumn column)</code> | Adds a column to the dashboard |
| <code>List<DashboardColumn> getColumns()</code> | Returns all columns in dashboard |
| <code>int getColumnCount()</code> | Returns the number of columns in dashboard |
| <code>DashboardColumn getColumn(int index)</code> | Returns the dashboard column at given index |
| <code>void transferWidget(DashboardColumn from, DashboardColumn to, String widgetId, int index)</code> | Relocates the widget identified with widget id to the given index of the new column from old column. |

org.primefaces.model.DashboardColumn (*org.primefaces.model.map.DefaultDashboardModel* is the default implementation)

| Method | Description |
|------------------------------------------------|--------------------------------------------|
| void removeWidget(String widgetId) | Removes the widget with the given id |
| List<String> getWidgets() | Returns the ids of widgets in column |
| int getWidgetCount() | Returns the count of widgets in column |
| String getWidget(int index) | Returns the widget id with the given index |
| void addWidget(String widgetId) | Adds a new widget with the given id |
| void addWidget(int index, String widgetId) | Adds a new widget at given index |
| void reorderWidget(int index, String widgetId) | Updates the index of widget in column |

3.31 DataExporter

DataExporter is handy for exporting data listed using a Primefaces Datatable to various formats such as excel, pdf, csv and xml.

Info

| | |
|----------------------|--------------------------------------------------------|
| Tag | dataExporter |
| Tag Class | org.primefaces.component.export.DataExporterTag |
| ActionListener Class | org.primefaces.component.export.DataExporter |

Attributes

| Name | Default | Type | Description |
|---------------|---------|------------|------------------------------------------------------------------|
| type | null | String | Export type: "xls", "pdf", "csv", "xml" |
| target | null | String | Search expression to resolve one or multiple datatables. |
| fileName | null | String | Filename of the generated export file, defaults to datatable id. |
| pageOnly | 0 | String | Exports only current page instead of whole dataset |
| preProcessor | null | MethodExpr | PreProcessor for the exported document. |
| postProcessor | null | MethodExpr | PostProcessor for the exported document. |
| encoding | UTF-8 | Boolean | Character encoding to use |
| selectionOnly | 0 | Boolean | When enabled, only selection would be exported. |

Getting Started with DataExporter

DataExporter is nested in a UICommand component such as `commandButton` or `commandLink`. For pdf exporting **itext** and for xls exporting **poi** libraries are required in the classpath. Target must point to a PrimeFaces Datatable. Assume the table to be exported is defined as;

```
<p:dataTable id="tableId" ...>
  //columns
</p:dataTable>
```

Excel export (type="xls | xlsx | xlsxstream")

```
<p:commandButton value="Export as Excel" ajax="false">
  <p:dataExporter type="xls" target="tableId" fileName="cars"/>
</p:commandButton>
```

PDF export (type="pdf")

```
<p:commandButton value="Export as PDF" ajax="false" >
  <p:dataExporter type="pdf" target="tableId" fileName="cars"/>
</p:commandButton>
```

CSV export (type="csv")

```
<p:commandButton value="Export as CSV" ajax="false" >
  <p:dataExporter type="csv" target="tableId" fileName="cars"/>
</p:commandButton>
```

XML export (type="xml")

```
<p:commandButton value="Export as XML" ajax="false" >
  <p:dataExporter type="xml" target="tableId" fileName="cars"/>
</p:commandLink>
```

PageOnly

By default dataExporter works on whole dataset, if you'd like export only the data displayed on current page, set pageOnly to true.

```
<p:dataExporter type="pdf" target="tableId" fileName="cars" pageOnly="true"/>
```

Excluding Columns

In case you need one or more columns to be ignored set *exportable* option of column to false.

```
<p:column exportable="false">
  //...
</p:column>
```

Monitor Status

DataExport is a non-ajax process so ajaxStatus component cannot apply. See FileDownload Monitor Status section to find out how monitor export process. Same solution applies to data export as well.

Custom Export

If you need to provide a custom way to retrieve the string value of a column in export, use exportFunction property of a column that resolves to a method expression. This method takes the column instance and should return a string to be included exported document.

Pre and Post Processors

Processors are handy to customize the exported document (e.g. add logo, caption ...). PreProcessors are executed before the data is exported and PostProcessors are processed after data is included in the document. Processors are simple java methods taking the document as a parameter.

Change Excel Table Header

First example of processors changes the background color of the exported excel's headers.

```
<h:commandButton value="Export as XLS">
    <p:dataExporter type="xls" target="tableId" fileName="cars"
        postProcessor="#{bean.postProcessXLS}"/>
</h:commandButton>
```

```
public void postProcessXLS(Object document) {
    HSSFWorkbook wb = (HSSFWorkbook) document;
    HSSFSheet sheet = wb.getSheetAt(0);
    HSSFRow header = sheet.getRow(0);
    HSSFCellStyle cellStyle = wb.createCellStyle();
    cellStyle.setFillForegroundColor(HSSFColor.GREEN.index);
    cellStyle.setFillPattern(HSSFCellStyle.SOLID_FOREGROUND);

    for(int i=0; i < header.getPhysicalNumberOfCells();i++) {
        header.getCell(i).setCellStyle(cellStyle);
    }
}
```

Add Logo to PDF

This example adds a logo to the PDF before exporting begins.

```
<h:commandButton value="Export as PDF">
    <p:dataExporter type="pdf" target="tableId" fileName="cars"
        preProcessor="#{bean.preProcessPDF}"/>
</h:commandButton>
```

```
public void preProcessPDF(Object document) throws IOException,
    BadElementException, DocumentException {
    Document pdf = (Document) document;
    ServletContext servletContext = (ServletContext)
FacesContext.getCurrentInstance().getExternalContext().getContext();
    String logo = servletContext.getRealPath("/") + File.separator + "images" +
File.separator + "prime_logo.png";
    pdf.add(Image.getInstance(logo));
}
```

3.32 DataGrid

DataGrid displays a collection of data in a grid layout.



Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | dataGrid |
| Component Class | org.primefaces.component.datagrid.DataGrid |
| Component Type | org.primefaces.component.DataGrid |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.DataGridRenderer |
| Renderer Class | org.primefaces.component.datagrid.DataGridRenderer |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |

| Name | Default | Type | Description |
|---------------------------|-------------------|---------|-------------------------------------------------------------------------------------------------|
| value | null | Object | Data to display. |
| var | null | String | Name of the request-scoped variable used to refer each data. |
| rows | null | Integer | Number of rows to display per page. |
| first | 0 | Integer | Index of the first row to be displayed |
| widgetVar | null | String | Name of the client side widget. |
| columns | 3 | Integer | Number of columns in grid. |
| paginator | false | boolean | Enables pagination. |
| paginatorTemplate | null | String | Template of the paginator. |
| rowsPerPageTemplate | null | String | Template of the rowsPerPage dropdown. |
| currentPageReportTemplate | null | String | Template of the currentPageReport UI. |
| pageLinks | 10 | Integer | Maximum number of page links to display. |
| paginatorPosition | both | String | Position of the paginator. |
| paginatorAlwaysVisible | true | Boolean | Defines if paginator should be hidden if total data count is less than number of rows per page. |
| style | null | String | Inline style of the datagrid. |
| styleClass | null | String | Style class of the datagrid. |
| rowIndexVar | null | String | Name of the iterator to refer each row index. |
| lazy | false | Boolean | Defines if lazy loading is enabled for the data component. |
| emptyMessage | No records found. | String | Text to display when there is no data to display. |
| layout | tabular | String | Layout approach to use, valid values are "tabular" and "grid" for responsive grid. |

Getting started with the DataGrid

A list of cars will be used throughout the datagrid, datalist and datatable examples.

```
public class Car {
    private String model;
    private int year;
    private String manufacturer;
    private String color;
    ...
}
```

The code for CarBean that would be used to bind the datagrid to the car list.

```
public class CarBean {

    private List<Car> cars;

    public CarBean() {
        cars = new ArrayList<Car>();
        cars.add(new Car("myModel",2005,"ManufacturerX","blue"));
        //add more cars
    }

    public List<Car> getCars() {
        return cars;
    }

}
```

```
<p:dataGrid var="car" value="#{carBean.cars}" columns="3" rows="12">

    <p:column>
        <p:panel header="#{car.model}">
            <h:panelGrid columns="1">
                <p:graphicImage value="/images/cars/#{car.manufacturer}.jpg"/>

                <h:outputText value="#{car.year}" />
            </h:panelGrid>
        </p:panel>
    </p:column>

</p:dataGrid>
```

This datagrid has 3 columns and 12 rows. As datagrid extends from standard UIData, rows correspond to the number of data to display not the number of rows to render so the actual number of rows to render is $\text{rows/columns} = 4$. As a result datagrid is displayed as;

| | | |
|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| 5a0e3ce6  1978 | c0a66869  1991 | cd25ac27  1991 |
| 68d039c4  1992 | 0c2874f1  1992 | 0a32e04e  2002 |
| 518a6446  2009 | be52e4d7  1969 | 6192c9e2  1987 |
| c2e29105  1992 | 957c4405  2008 | b3b3cbe8  1983 |

Ajax Pagination

DataGrid has a built-in paginator that is enabled by setting paginator option to true.

```
<p:dataGrid var="car" value="#{carBean.cars}" columns="3" rows="12"
  paginator="true">
  ...
</p:dataGrid>
```

Paginator Template

Paginator is customized using paginatorTemplateOption that accepts various keys of UI controls. Note that this section applies to dataGrid, dataList and dataTable.

- FirstPageLink
- LastPageLink
- PreviousPageLink
- NextPageLink
- PageLinks
- CurrentPageReport
- RowsPerPageDropdown
- JumpToPageDropdown

Note that {RowsPerPageDropdown} has it's own template, options to display is provided via rowsPerPageTemplate attribute (e.g. rowsPerPageTemplate="9,12,15").

Also {CurrentPageReport} has it's own template defined with currentPageReportTemplate option. You can use {currentPage}, {totalPages}, {totalRecords}, {startRecord}, {endRecord} keyword within currentPageReportTemplate. Default is {currentPage} of {totalPages}. Default UI is;



W

which corresponds to the following template.

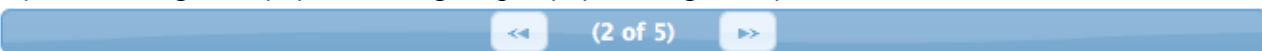
```
"{FirstPageLink} {PreviousPageLink} {PageLinks} {NextPageLink} {LastPageLink}"
```

Here are more examples based on different templates;

```
" {CurrentPageReport} {FirstPageLink} {PreviousPageLink} {PageLinks} {NextPageLink}
{LastPageLink} {RowsPerPageDropdown}"
```



```
" {PreviousPageLink} {CurrentPageReport} {NextPageLink}"
```



Paginator Position

Paginator can be positioned using paginatorPosition attribute in three different locations, "top", "bottom" or "both" (default).

Custom Content in Paginator

Custom content can be placed inside a paginator using a facet name matching a token in the template.

```
<p:dataTable paginatorTemplate="{CurrentPageReport} {MyContent} ...">
  <f:facet name="{MyContent}">
    //Any content here
  </f:facet>
  //...
</p:dataTable>
```

Selecting Data

Selection of data displayed in datagrid is very similar to row selection in datatable, you can access the current data using the var reference. Here is an example to demonstrate how to select data from datagrid and display within a dialog with ajax.

```
<h:form id="carForm">

  <p:dataGrid var="car" value="#{carBean.cars}" columns="3" rows="12">

    <p:panel header="#{car.model}">
      <p:commandLink update=":carForm:display" oncomplete="PF('dlg').show()">
        <f:setPropertyActionListener value="#{car}"
          target="#{carBean.selectedCar}"
        >
        <h:outputText value="#{car.model}" />
      </p:commandLink>
    </p:panel>

  </p:dataGrid>

  <p:dialog modal="true" widgetVar="dlg">

    <h:panelGrid id="display" columns="2">
      <f:facet name="header">
        <p:graphicImage value="/images/cars/#{car.manufacturer}.jpg"/>
      </f:facet>
      <h:outputText value="Model:" />
      <h:outputText value="#{carBean.selectedCar.year}" />

      //more selectedCar properties
    </h:panelGrid>

  </p:dialog>

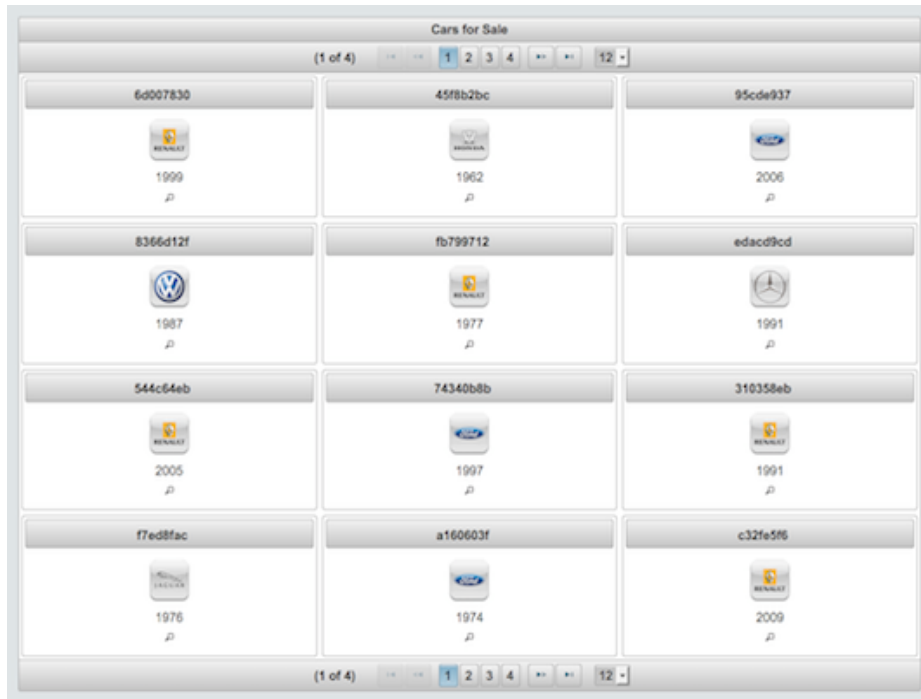
</h:form>
```

```
public class CarBean {

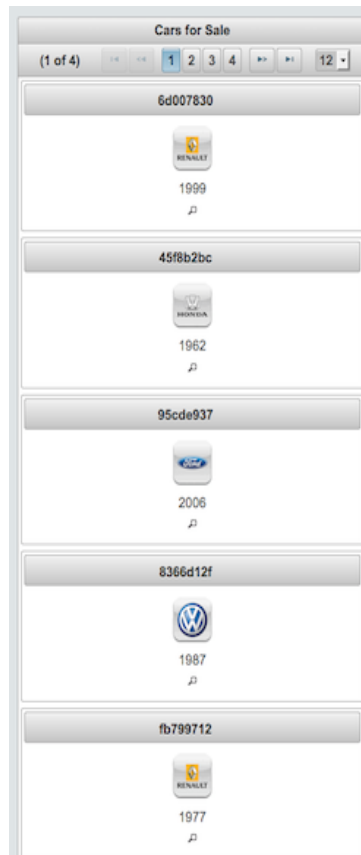
  private List<Car> cars;
  private Car selectedCar;
  //getters and setters
}
```

Layout Modes

DataGrid has two layout modes, "tabular" mode uses a table element and "grid" mode uses PrimeFaces Grid CSS create a responsive ui.



On a smaller screen, grid mode adjusts the content for the optimal view.



Ajax Behavior Events

| Event | Listener Parameter | Fired |
|-------|-------------------------------------|----------------|
| page | org.primefaces.event.data.PageEvent | On pagination. |

```
<p:dataGrid var="car" value="#{carBean.model}">
  <p:ajax event="page" update="anothercomponent" />
  //content
</p:dataGrid>
```

Client Side API

Widget: *PrimeFaces.widget.DataGrid*

| Method | Params | Return Type | Description |
|----------------|--------|-------------|-------------------------------|
| getPaginator() | - | Paginator | Returns the paginator widget. |

Skinning

DataGrid resides in a main div container which style and styleClass attributes apply. Following is the list of structural style classes;

| Class | Applies |
|----------------------|-------------------------------|
| .ui-datagrid | Main container element |
| .ui-datagrid-content | Content container. |
| .ui-datagrid-data | Table element containing data |
| .ui-datagrid-row | A row in grid |
| .ui-datagrid-column | A column in grid |

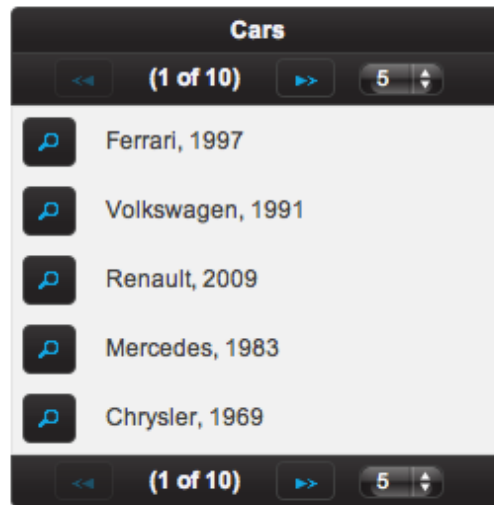
As skinning style classes are global, see the main theming section for more information.

Tips

- DataGrid supports lazy loading data via LazyDataModel, see DataTable lazy loading section.
- DataGrid provides two facets named *header* and *footer* that you can use to provide custom content at these locations.

3.33 DataList

DataList presents a collection of data in list layout with several display types.



Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | dataList |
| Component Class | org.primefaces.component.datalist.DataList |
| Component Type | org.primefaces.component.DataList |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.DataListRenderer |
| Renderer Class | org.primefaces.component.datalist.DataListRenderer |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Data to display. |
| var | null | String | Name of the request-scoped variable used to refer each data. |
| rows | null | Integer | Number of rows to display per page. |
| first | 0 | Integer | Index of the first row to be displayed |

| Name | Default | Type | Description |
|---------------------------|-------------------|---------|------------------------------------------------------------------------------------------------------------------|
| type | unordered | String | Type of the list, valid values are "unordered", "ordered", "definition" and "none". |
| itemType | null | String | Specifies the list item type. |
| widgetVar | null | String | Name of the client side widget. |
| paginator | false | boolean | Enables pagination. |
| paginatorTemplate | null | String | Template of the paginator. |
| rowsPerPageTemplate | null | String | Template of the rowsPerPage dropdown. |
| currentPageReportTemplate | null | String | Template of the currentPageReport UI. |
| pageLinks | 10 | Integer | Maximum number of page links to display. |
| paginatorPosition | both | String | Position of the paginator. |
| paginatorAlwaysVisible | true | Boolean | Defines if paginator should be hidden if total data count is less than number of rows per page. |
| style | null | String | Inline style of the main container. |
| styleClass | Null | String | Style class of the main container. |
| rowIndexVar | null | String | Name of the iterator to refer each row index. |
| varStatus | null | String | Name of the exported request scoped variable to represent state of the iteration same as in ui:repeat varStatus. |
| lazy | false | Boolean | Defines if lazy loading is enabled for the data component. |
| emptyMessage | No records found. | String | Text to display when there is no data to display. |
| itemStyleClass | null | String | Style class of an item in list. |

Getting started with the DataList

Since DataList is a data iteration component, it renders it's children for each data represented with *var* option. See itemType section for more information about the possible values.

```
<p:dataList value="#{carBean.cars}" var="car" itemType="disc">
    #{car.manufacturer}, #{car.year}
</p:dataList>
```

Ordered Lists

DataList displays the data in unordered format by default, if you'd like to use ordered display set *type* option to "ordered".

```
<p:dataList value="#{carBean.cars}" var="car" type="ordered">
    #{car.manufacturer}, #{car.year}
</p:dataList>
```

Item Type

itemType defines the bullet type of each item. For ordered lists, in addition to commonly used *decimal* type, following item types are available;

- A
- a
- i

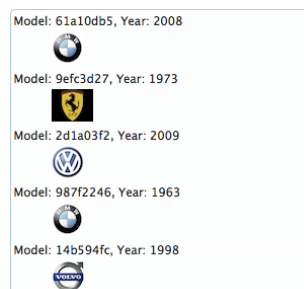
And for unordered lists, available values are;

- disc
- circle
- square

Definition Lists

Third type of *dataList* is definition lists that display inline description for each item, to use definition list set *type* option to *"definition"*. Detail content is provided with the facet called *"description"*.

```
<p:dataList value="#{carBean.cars}" var="car" type="definition">
    Model: #{car.model}, Year: #{car.year}
    <f:facet name="description">
        <p:graphicImage value="/images/cars/#{car.manufacturer}.jpg"/>
    </f:facet>
</p:dataList>
```



Ajax Pagination

DataList has a built-in paginator that is enabled by setting *paginator* option to *true*.

```
<p:dataList value="#{carBean.cars}" var="car" paginator="true" rows="10">
    #{car.manufacturer}, #{car.year}
</p:dataList>
```

Pagination configuration and usage is same as *dataGrid*, see pagination section in *dataGrid* documentation for more information and examples.

Ajax Behavior Events

| Event | Listener Parameter | Fired |
|-------|-------------------------------------|----------------|
| page | org.primefaces.event.data.PageEvent | On pagination. |

```
<p:dataList var="car" value="#{carBean.model}">
  <p:ajax event="page" update="anothercomponent" />
  //content
</p:dataList>
```

Selecting Data

Data selection can be implemented same as in dataGrid, see selecting data section in dataGrid documentation for more information and an example.

Client Side API

Widget: *PrimeFaces.widget.DataList*

| Method | Params | Return Type | Description |
|----------------|--------|-------------|-------------------------------|
| getPaginator() | - | Paginator | Returns the paginator widget. |

Skinning

DataList resides in a main div container which style and styleClass attributes apply. Following is the list of structural style classes;

| Class | Applies |
|----------------------|------------------------|
| .ui-datalist | Main container element |
| .ui-datalist-content | Content container |
| .ui-datalist-data | Data container |
| .ui-datalist-item | Each item in list |

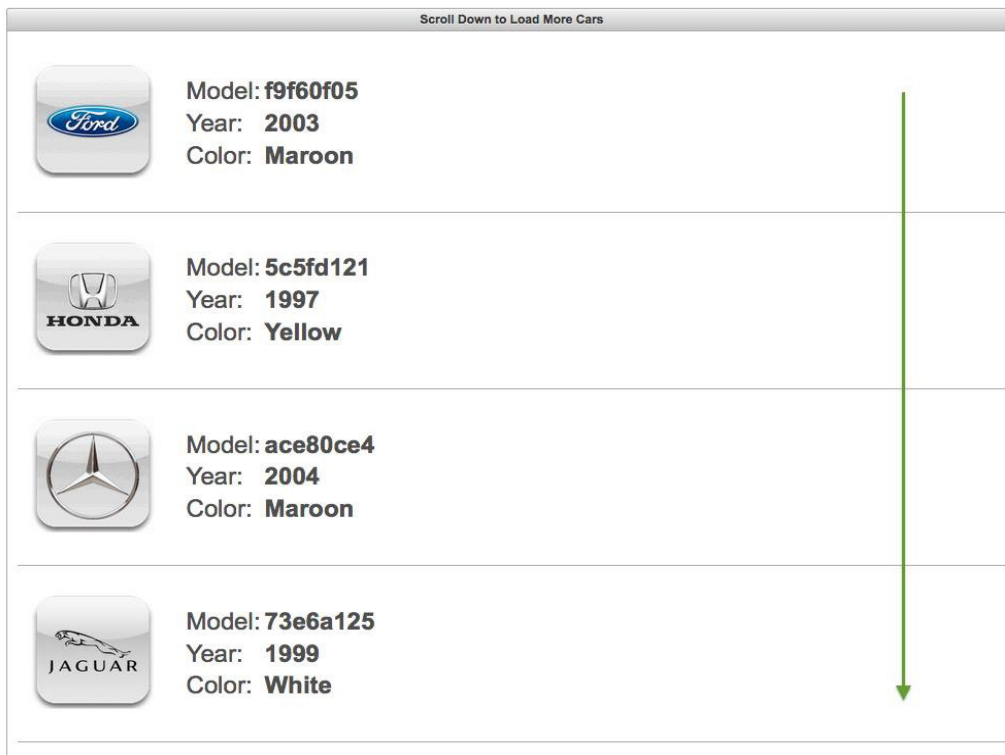
As skinning style classes are global, see the main theming section for more information.

Tips

- DataList supports lazy loading data via LazyDataModel, see DataTable lazy loading section.
- If you need full control over list type markup, set type to "none". With this setting, datalist does not render item tags like li and behaves like ui:repeat.
- DataList provides two facets named *header* and *footer* that you can use to provide custom content at these locations.

3.34 DataScroller

DataScroller displays a collection of data with on demand loading using scrolling.



Info

| | |
|------------------|-------------------------------------------------------------------|
| Tag | dataScroller |
| Component Class | org.primefaces.component.datascroller.DataScroller |
| Component Type | org.primefaces.component.DataScroller |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.DataScrollerRenderer |
| Renderer Class | org.primefaces.component.datascroller.DataScrollerRenderer |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |

| Name | Default | Type | Description |
|--------------|----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value | null | Object | Data to display. |
| var | null | String | Name of the request-scoped variable used to refer each data. |
| rows | null | Integer | Number of rows to display per page. |
| first | 0 | Integer | Index of the first row to be displayed |
| widgetVar | null | String | Name of the client side widget. |
| style | null | String | Inline style of the main container. |
| styleClass | Null | String | Style class of the main container. |
| chunkSize | 0 | int | Number of items to fetch in each load. |
| rowIndexVar | null | String | Name of iterator to refer each row index. |
| mode | document | String | Defines the target to listen for scroll event, valid values are "document" (default) and "inline". |
| scrollHeight | null | String | Defines pixel height of the viewport in inline mode. |
| lazy | false | Boolean | Defines if lazy loading is enabled for the data component. |
| buffer | 10 | Integer | Percentage height of the buffer between the bottom of the page and the scroll position to initiate the load for the new chunk. Value is defined in integer and default is 10 meaning load would happen after 90% of the viewport is scrolled down. |

Getting started with the DataScroller

DataScroller requires a collection of data to display, when the page is scrolled down, datascroller will do a request with ajax to fetch the new chunk of data and append them at the bottom.

```
<p:dataScroller value="#{carBean.cars}" var="car" chunkSize="10">
    #{car.manufacturer}
    //more content
</p:dataScroller>
```

Scroll Mode

Default element whose scrollbar is monitored is page itself, *mode* option is used to customize the scroll target. Two possible options for the mode attribute are “document” and “inline”. Document mode is default and *inline* mode listens to the scroll event of the datascroller container itself.

```
<p:dataScroller value="#{carBean.cars}" var="car" mode="inline" chunkSize="10">
    #{car.manufacturer}
    //more content
</p:dataScroller>
```

Loader

In case of scrolling, a UI element such as button can be defined as the loader so that new data is loaded when the loader element is clicked. Loader component is defined using "loader" facet.

```
<p:dataScroller value="#{carBean.cars}" var="car" mode="inline" chunkSize="10">
    #{car.manufacturer}
    //more content
    <f:facet name="loader">
        <p:commandButton type="button" value="View More" />
    </f:facet>
</p:dataScroller>
```

Lazy Loading

Lazy loading is enabled by enabling the lazy attribute and providing a LazyDataModel instance as the value. Refer to lazy load example in DataTable for an example about LazyDataModel.

```
<p:dataScroller value="#{carBean.lazyModel}" var="car" lazy="true">
    #{car.manufacturer}
    //more content
</p:dataScroller>
```

Header

Header of the component is defined using header facet.

```
<p:dataScroller value="#{carBean.lazyModel}" var="car">
    <f:facet name="header">Cars</f:facet>
    #{car.manufacturer}
    //more content
</p:dataScroller>
```

Client Side API

Widget: *PrimeFaces.widget.DataScroller*

| Method | Params | Return Type | Description |
|--------|--------|-------------|-----------------------|
| load() | - | void | Loads the next chunk. |

Skinning

DataScroller resides in a main div container which style and styleClass attributes apply. Following is the list of structural style classes;

| Class | Applies |
|--------------------------|---------------------------------------|
| .ui-datascroller | Main container element |
| .ui-datascroller-inline | Main container element in inline mode |
| .ui-datalist-header | Header element |
| .ui-datalist-content | Content element |
| .ui-datascroller-list | List element container |
| .ui-datascroller-item | Container of each item in the list |
| .ui-datascroller-loader | Container of custom loader element. |
| .ui-datascroller-loading | Built-in load status indicator |

As skinning style classes are global, see the main theming section for more information.

3.35 DataTable

DataTable displays data in tabular format.

| Model | Year | Manufacturer | Color |
|----------|------|--------------|--------|
| fe1c52bb | 1968 | Volkswagen | Orange |
| 4f95b4f8 | 1993 | BMW | Red |
| cb9d1d28 | 2005 | Opel | Green |
| e297b6eb | 1980 | Volvo | Silver |
| c67450c1 | 1971 | Volkswagen | Brown |
| 669699ae | 2000 | Jaguar | Blue |
| d632787b | 1965 | Ford | Silver |
| 5d8b24ce | 1988 | Jaguar | Maroon |
| 814ef317 | 1970 | BMW | Red |
| d1b57e10 | 1970 | Ford | Red |

Info

| | |
|------------------|-------------------------------------------------------------|
| Tag | dataTable |
| Component Class | org.primefaces.component.datatable.DataTable |
| Component Type | org.primefaces.component.DataTable |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.DataTableRenderer |
| Renderer Class | org.primefaces.component.datatable.DataTableRenderer |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | false | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Data to display. |
| var | null | String | Name of the request-scoped variable used to refer each data. |
| rows | null | Integer | Number of rows to display per page. |
| first | 0 | Integer | Index of the first row to be displayed |

| Name | Default | Type | Description |
|---------------------------|-------------------|---------|-------------------------------------------------------------------------------------------------|
| widgetVar | null | String | Name of the client side widget. |
| paginator | false | Boolean | Enables pagination. |
| paginatorTemplate | null | String | Template of the paginator. |
| rowsPerPageTemplate | null | String | Template of the rowsPerPage dropdown. |
| rowsPerPageLabel | null | String | Label for the rowsPerPage dropdown. |
| currentPageReportTemplate | null | String | Template of the currentPageReport UI. |
| pageLinks | 10 | Integer | Maximum number of page links to display. |
| paginatorPosition | both | String | Position of the paginator. |
| paginatorAlwaysVisible | true | Boolean | Defines if paginator should be hidden if total data count is less than number of rows per page. |
| scrollable | false | Boolean | Makes data scrollable with fixed header. |
| scrollHeight | null | Integer | Scroll viewport height. |
| scrollWidth | null | Integer | Scroll viewport width. |
| selectionMode | null | String | Enables row selection, valid values are “single” and “multiple”. |
| selection | null | Object | Reference to the selection data. |
| rowIndexVar | null | String | Name of iterator to refer each row index. |
| emptyMessage | No records found. | String | Text to display when there is no data to display. Alternative is emptyMessage facet. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| dblClickSelect | false | Boolean | Enables row selection on double click. |
| liveScroll | false | Boolean | Enables live scrolling. |
| rowStyleClass | null | String | Style class for each row. |
| onExpandStart | null | String | Client side callback to execute before expansion. |
| resizableColumns | false | Boolean | Enables column resizing. |
| sortBy | null | Object | Property to be used for default sorting. |
| sortOrder | ascending | String | “ascending” or “descending”. |
| scrollRows | 0 | Integer | Number of rows to load on live scroll. |
| rowKey | null | String | Unique identifier of a row. |
| tableStyle | null | String | Inline style of the table element. |

| Name | Default | Type | Description |
|-------------------|---------|---------|--------------------------------------------------------------------------------------------------|
| tableStyleClass | null | String | Style class of the table element. |
| filterEvent | keyup | String | Event to invoke filtering for input filters. |
| filterDelay | 300 | Integer | Delay in milliseconds before sending an ajax filter query. |
| draggableColumns | false | Boolean | Columns can be reordered with dragdrop when enabled. |
| editable | false | Boolean | Controls incell editing. |
| lazy | false | Boolean | Controls lazy loading. |
| filteredValue | null | List | List to keep filtered data. |
| sortMode | single | String | Defines sorting mode, valid values are <i>single</i> and <i>multiple</i> . |
| editMode | row | String | Defines edit mode, valid values are <i>row</i> and <i>cell</i> . |
| editingRow | false | Boolean | Defines if cell editors of row should be displayed as editable or not. |
| cellSeparator | null | String | Separator text to use in output mode of editable cells with multiple components. |
| summary | null | String | Summary attribute for WCAG. |
| frozenRows | null | Object | Collection to display as fixed in scrollable mode. |
| dir | ltr | String | Defines text direction, valid values are <i>ltr</i> and <i>rtl</i> . |
| liveResize | false | Boolean | Columns are resized live in this mode without using a resize helper. |
| stickyHeader | false | Boolean | Sticky header stays in window viewport during scrolling. |
| expandedRow | false | Boolean | Defines if row should be rendered as expanded by default. |
| disabledSelection | false | Boolean | Disables row selection when true. |
| rowSelectMode | new | String | Defines row selection mode for multiple selection. Valid values are "new", "add" and "checkbox". |
| rowExpandMode | new | String | Defines row expand mode, valid values are "single" and "multiple" (default). |
| dataLocale | null | Object | Locale to be used in features such as filtering and sorting, defaults to view locale. |
| nativeElements | false | Boolean | Uses native radio-checkbox elements for row selection. |
| frozenColumns | 0 | Integer | Number of columns to freeze from start index 0. |

| Name | Default | Type | Description |
|-----------------------|---------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| draggableRows | false | Boolean | When enabled, rows can be reordered using dragdrop. |
| caseSensitiveSort | false | Boolean | Case sensitivity for sorting, insensitive by default. |
| skipChildren | false | Boolean | Ignores processing of children during lifecycle, improves performance if table only has output components. |
| disabledTextSelection | true | Boolean | Disables text selection on row click. |
| sortField | null | String | Name of the field to pass lazy load method for sorting. If not specified, sortBy expression is used to extract the name. |
| initMode | load | String | Defines when the datatable is initiated at client side, valid values are "load" (default) and "immediate". |
| nullSortOrder | 1 | Integer | Defines where the null values are placed in ascending sort order. Default value is "1" meaning null values are placed at the end in ascending mode and at beginning in descending mode. Set to "-1" for the opposite behavior. |
| tabindex | null | String | Position of the element in the tabbing order. |
| reflow | false | Boolean | Reflow mode is a responsive mode to display columns as stacked depending on screen size. |
| liveScrollBuffer | 0 | Integer | Percentage height of the buffer between the bottom of the page and the scroll position to initiate the load for the new chunk. Value is defined in integer and default is 0. |
| rowHover | false | Boolean | Adds hover effect to rows, default is false. Hover is always on when selection is enabled. |
| rowStatePreserved | false | Boolean | Keeps state of its children on a per-row basis. Default is false. |
| resizeMode | fit | String | Defines the resize behavior, valid values are "fit" (default) and expand. |
| ariaRowLabel | null | String | Label to read by screen readers on checkbox selection. |
| saveOnCellBlur | true | Boolean | Saves the changes in cell editing on blur, when set to false changes are discarded.. |

Getting started with the DataTable

We will be using the same Car and CarBean classes described in DataGrid section.

```

<p:dataTable var="car" value="#{carBean.cars}">
  <p:column>
    <f:facet name="header">
      <h:outputText value="Model" />
    </f:facet>
    <h:outputText value="#{car.model}" />
  </p:column>
  //more columns
</p:dataTable>

```

Header and Footer

Both datatable itself and columns can have custom content in their headers and footers using header and footer facets respectively. Alternatively for columns there are headerText and footerText shortcuts to display simple texts.

| List of Cars | | | |
|-----------------------------------|--------------|--------|------------------|
| Model | Manufacturer | Color | Year |
| 16c9b7c6 | Mercedes | Maroon | 1979 |
| de0e4475 | Volkswagen | Maroon | 1994 |
| d17a0cac | Ford | Black | 1998 |
| 0db0095d | Ford | Red | 1983 |
| c09b2d08 | Renault | Red | 1962 |
| a5e3c203 | Volkswagen | Green | 2007 |
| 196bd9e9 | Ford | White | 1994 |
| 111db4d2 | Ford | Silver | 1994 |
| 73b17bd0 | Volvo | Blue | 1973 |
| 8 digit code | | | 1960-2010 |
| In total there are 9 cars. | | | |

```

<p:dataTable var="car" value="#{carBean.cars}">
  <f:facet name="header">
    List of Cars
  </f:facet>
  <p:column>
    <f:facet name="header">
      Model
    </f:facet>
    #{car.model}
    <f:facet name="footer">
      8 digit code
    </f:facet>
  </p:column>
  <p:column headerText="Year" footerText="1960-2010">
    #{car.year}
  </p:column>
  //more columns
  <f:facet name="footer">
    In total there are #{fn:length(carBean.cars)} cars.
  </f:facet>
</p:dataTable>

```

Pagination

DataTable has a built-in ajax based paginator that is enabled by setting paginator option to true, see pagination section in dataGrid documentation for more information about customization options.

```
<p:dataTable var="car" value="#{carBean.cars}" paginator="true" rows="10">
  //columns
</p:dataTable>
```

Sorting

Defining *sortBy* attribute enables ajax based sorting on that particular column.

```
<p:dataTable var="car" value="#{carBean.cars}">
  <p:column sortBy="#{car.model}" headerText="Model">
    <h:outputText value="#{car.model}" />
  </p:column>
  ...more columns
</p:dataTable>
```

Instead of using the default sorting algorithm which uses a java comparator, you can plug-in your own sort method as well.

```
public int sortByModel(Object car1, Object car2) {
  //return -1, 0 , 1 if car1 is less than, equal to or greater than car2
}
```

```
<p:dataTable var="car" value="#{carBean.cars}">
  <p:column sortBy="#{car.model}" sortFunction="#{carBean.sortByModel}"
    headerText="Model">
    <h:outputText value="#{car.model}" />
  </p:column>
  ...more columns
</p:dataTable>
```

Multiple sorting is enabled by setting *sortMode* to *multiple*. In this mode, clicking a sort column while metakey is on adds sort column to the order group.

```
<p:dataTable var="car" value="#{carBean.cars}" sortMode="multiple">
  //columns
</p:dataTable>
```

DataTable can display data sorted by default, to implement this use the *sortBy* option of datatable and the optional *sortOrder*. Table below would be initially displayed as sorted by model.

```

<p:dataTable var="car" value="#{carBean.cars}" sortBy="#{car.model}">
    <p:column sortBy="#{car.model}" headerText="Model">
        <h:outputText value="#{car.model}" />
    </p:column>

    <p:column sortBy="#{car.year}" headerText="Year">
        <h:outputText value="#{car.year}" />
    </p:column>

    ...more columns
</p:dataTable>

```

Filtering

Ajax based filtering is enabled by setting *filterBy* at column level and providing a list to keep the filtered sublist. It is suggested to use a scope longer than request like *viewscope* to keep the *filteredValue* so that filtered list is still accessible after filtering.

```

<p:dataTable var="car" value="#{carBean.cars}"
              filteredValue="#{carBean.filteredCars}">
    <p:column filterBy="#{car.model}" headerText="Model">
        <h:outputText value="#{car.model}" />
    </p:column>
    ...more columns
</p:dataTable>

```

Filtering is triggered with *keyup* event and filter inputs can be styled using *filterStyle*, *filterStyleClass* attributes. If you'd like to use a dropdown instead of an input field to only allow predefined filter values use *filterOptions* attribute and a collection/array of *selectitems* as value. In addition, *filterMatchMode* defines the built-in matcher which is *startsWith* by default.

Following is a basic filtering datatable with these options demonstrated;

```

<p:dataTable var="car" value="#{carBean.cars}"
             filteredValue="#{carBean.filteredCars}" widgetVar="carsTable">

    <f:facet name="header">
        <p:outputPanel>
            <h:outputText value="Search all fields:" />
            <h:inputText id="globalFilter" onkeyup="PF('carsTable').filter()" />
        </p:outputPanel>
    </f:facet>

    <p:column filterBy="#{car.model}" headerText="Model" filterMatchMode="contains">
        <h:outputText value="#{car.model}" />
    </p:column>

    <p:column filterBy="#{car.year}" headerText="Year" footerText="startsWith">
        <h:outputText value="#{car.year}" />
    </p:column>

    <p:column filterBy="#{car.manufacturer}" headerText="Manufacturer"
             filterOptions="#{carBean.manufacturerOptions}" filterMatchMode="exact">
        <h:outputText value="#{car.manufacturer}" />
    </p:column>

    <p:column filterBy="#{car.color}" headerText="Color" filterMatchMode="endsWith">
        <h:outputText value="#{car.color}" />
    </p:column>

    <p:column filterBy="#{car.price}" headerText="Price" filterMatchMode="exact">
        <h:outputText value="#{car.price}" />
    </p:column>

</p:dataTable>

```

Filter located at header is a global one applying on all fields, this is implemented by calling client side API method called *filter()*, important part is to specify the id of the input text as *globalFilter* which is a reserved identifier for datatable.

In addition to default filtering with generated elements, custom elements can also be used as a filter facet. Example below uses custom filter components in combination with generated elements. When a custom component is used as a filter facet, filtering needs to be called manually from a preferred event such as `onchange="PF('carsTable').filter()"`. Also defining a converter might be necessary if the value of the filter facet is not defined.


```

<p:dataTable id="dataTable" var="car" value="#{tableBean.carsSmall}"
  widgetVar="carsTable" filteredValue="#{tableBean.filteredCars}">

  <p:column id="modelColumn" filterBy="#{car.model}" headerText="Model"
    footerText="contains" filterMatchMode="contains">
    <h:outputText value="#{car.model}" />
  </p:column>

  <p:column id="yearColumn" filterBy="#{car.year}" headerText="Year"
    footerText="lte" filterMatchMode="lte">
    <f:facet name="filter">
      <p:spinner onChange="PF('carsTable').filter()" min="1960" max="2010">
        <f:converter converterId="javax.faces.Integer" />
      </p:spinner>
    </f:facet>
    <h:outputText value="#{car.year}" />
  </p:column>

  <p:column id="manufacturerColumn" filterBy="#{car.manufacturer}"
  headerText="Manufacturer" footerText="exact" filterMatchMode="exact">
    <f:facet name="filter">
      <p:selectOneMenu onChange="PF('carsTable').filter()" >
        <f:selectItems value="#{tableBean.manufacturerOptions}" />
      </p:selectOneMenu>
    </f:facet>
    <h:outputText value="#{car.manufacturer}" />
  </p:column>

  <p:column id="colorColumn" filterBy="#{car.color}" headerText="Color"
    footerText="in" filterMatchMode="in">
    <f:facet name="filter">
      <p:selectCheckboxMenu label="Colors"
  onChange="PF('carsTable').filter()">
        <f:selectItems value="#{tableBean.colors}" />
      </p:selectCheckboxMenu>
    </f:facet>
    <h:outputText value="#{car.color}" />
  </p:column>

  <p:column id="soldColumn" filterBy="#{car.sold}" headerText="Status"
  footerText="equals" filterMatchMode="equals">
    <f:facet name="filter">
      <p:selectOneButton onChange="PF('carsTable').filter()">
        <f:converter converterId="javax.faces.Boolean" />
        <f:selectItem itemLabel="All" itemValue="" />
        <f:selectItem itemLabel="Sold" itemValue="true" />
        <f:selectItem itemLabel="Sale" itemValue="false" />
      </p:selectOneButton>
    </f:facet>
    <h:outputText value="#{car.sold ? 'Sold': 'Sale'}" />
  </p:column>
</p:dataTable>

```

`filterMatchMode` defines which built-in filtering algorithm would be used per column, valid values for this attribute are;

- **startsWith**: Checks if column value starts with the filter value.
- **endsWith**: Checks if column value ends with the filter value.
- **contains**: Checks if column value contains the filter value.
- **exact**: Checks if string representations of column value and filter value are same.
- **lt**: Checks if column value is less than the filter value.
- **lte**: Checks if column value is less than or equals the filter value.
- **gt**: Checks if column value is greater than the filter value.
- **gte**: Checks if column value is greater than or equals the filter value.
- **equals**: Checks if column value equals the filter value.
- **in**: Checks if column value is in the collection of the filter value.

In case the built-in methods do not suffice, custom filtering can be implemented using `filterFunction` approach.

```
<p:column filterBy="#{car.price}" filterFunction="#{tableBean.filterByPrice}">
  <h:outputText value="#{car.price}">
    <f:convertNumber currencySymbol="$" type="currency"/>
  </h:outputText>
</p:column>
```

`filterFunction` should be a method with three parameters; column value, filter value and locale. Return value is a boolean, true accepts the value and false rejects it.

```
public boolean filterByPrice(Object value, Object filter, Locale locale) {
    //return true or false
}
```

Locale is provided as optional in case you need to use a locale aware method like `toLowerCase(Locale locale)`. Note that String based filters like `startsWith`, `endsWith` uses `toLowerCase` already and `dataLocale` attribute is used to provide the locale to use when filtering.

Row Selection

There are several ways to select row(s) from datatable. Let's begin by adding a Car reference for single selection and a Car array for multiple selection to the CarBean to hold the selected data.

```
public class CarBean {
    private List<Car> cars;
    private Car selectedCar;
    private Car[] selectedCars;
    public CarBean() {
        cars = new ArrayList<Car>();
        //populate cars
    }
    //getters and setters
}
```

Single Selection with a Command Component

This method is implemented with a command component such as `commandLink` or `commandButton`. Selected row can be set to a server side instance by passing as a parameter if you are using EL 2.2 or using `f:setPropertyActionListener`.

```

<p:dataTable var="car" value="#{carBean.cars}">
    <p:column>
        <p:commandButton value="Select">
            <f:setPropertyActionListener value="#{car}"
                target="#{carBean.selectedCar}" />
        </p:commandButton>
    </p:column>
    ...columns
</p:dataTable>

```

Single Selection with Row Click

Previous method works when the button is clicked, if you'd like to enable selection wherever the row is clicked, use *selectionMode* option.

```

<p:dataTable var="car" value="#{carBean.cars}" selectionMode="single"
    selection="#{carBean.selectedCar}" rowKey="#{car.id}">
    ...columns
</p:dataTable>

```

Multiple Selection with Row Click

Multiple row selection is similar to single selection but selection should reference an array or a list of the domain object displayed and user needs to use press modifier key (e.g. ctrl) during selection *.

```

<p:dataTable var="car" value="#{carBean.cars}" selectionMode="multiple"
    selection="#{carBean.selectedCars}" rowKey="#{car.id}" >
    ...columns
</p:dataTable>

```

Single Selection with RadioButton

Selection a row with a radio button placed on each row is a common case, datatable has built-in support for this method so that you don't need to deal with h:selectOneRadios and low level bits. In order to enable this feature, define a column with *selectionMode* set as single.

```

<p:dataTable var="car" value="#{carBean.cars}" selection="#{carBean.selectedCar}"
    rowKey="#{car.id}">
    <p:column selectionMode="single"/>
    ...columns
</p:dataTable>

```

Multiple Selection with Checkboxes

Similar to how radio buttons are enabled, define a selection column with a multiple *selectionMode*. DataTable will also provide a selectAll checkbox at column header.

```

<p:dataTable var="car" value="#{carBean.cars}" selection="#{carBean.selectedCars}"
    rowKey="#{car.id}" >
    <p:column selectionMode="multiple"/>
    ...columns
</p:dataTable>

```

* Use **rowSelectMode** option to customize the default behavior on row click of a multiple selection enabled datatable. Default value is "new" that clears previous selections, "add" mode keeps previous selections same as selecting a row with mouse click when metakey is on and "checkbox" mode allows row selection with checkboxes only.

RowKey

RowKey should be a unique identifier from your data model and used by datatable to find the selected rows. You can either define this key by using the rowKey attribute or by binding a data model which implements *org.primefaces.model.SelectableDataModel*.

Dynamic Columns

Dynamic columns is handy in case you can't know how many columns to render. Columns component is used to define the columns programmatically. It requires a collection as the value, two iterator variables called *var* and *columnIndexVar*.

```
<p:dataTable var="cars" value="#{tableBean.cars}">
  <p:columns value="#{tableBean.columns}" var="column"
    sortBy="#{column.property}" filterBy="#{column.property}">
    <f:facet name="header">
      #{column.header}
    </f:facet>
    <h:outputText value="#{cars[column.property]}" />
  </p:columns>
</p:dataTable>
```

```

public class CarBean {

    private List<ColumnModel> columns = new ArrayList<ColumnModel>();
    private List<Car> cars;

    public CarBean() {
        populateColumns();
        cars = //populate cars;
    }

    public void populateColumns() {
        String[] columnKeys = new String[]{"model","year","color"};

        for(String columnKey : columnKeys) {
            columns.add(new ColumnModel(columnKey.toUpperCase(), columnKey));
        }
    }

    //getters and setters

    static public class ColumnModel implements Serializable {

        private String header;
        private String property;

        public ColumnModel(String header, String property) {
            this.header = header;
            this.property = property;
        }

        public String getHeader() {
            return header;
        }

        public String getProperty() {
            return property;
        }
    }
}

```

Grouping

Grouping is defined by ColumnGroup component used to combine datatable header and footers.

| Manufacturer | Sales | | | |
|----------------|-------------|-----------|-----------------|-----------------|
| | Sales Count | | Profit | |
| | Last Year | This Year | Last Year | This Year |
| Mercedes | 90% | 8% | 28031\$ | 25102\$ |
| BMW | 14% | 91% | 18640\$ | 28023\$ |
| Volvo | 82% | 24% | 130\$ | 77724\$ |
| Audi | 7% | 40% | 2272\$ | 33672\$ |
| Renault | 10% | 54% | 98115\$ | 40664\$ |
| Opel | 63% | 28% | 10549\$ | 93746\$ |
| Volkswagen | 67% | 38% | 38242\$ | 19063\$ |
| Chrysler | 40% | 63% | 10146\$ | 7697\$ |
| Ferrari | 26% | 70% | 40384\$ | 62298\$ |
| Ford | 14% | 94% | 96052\$ | 42233\$ |
| Totals: | | | 342561\$ | 430222\$ |

```

<p:dataTable var="sale" value="#{carBean.sales}">
  <p:columnGroup type="header">
    <p:row>
      <p:column rowspan="3" headerText="Manufacturer" />
      <p:column colspan="4" headerText="Sales" />
    </p:row>
    <p:row>
      <p:column colspan="2" headerText="Sales Count" />
      <p:column colspan="2" headerText="Profit" />
    </p:row>
    <p:row>
      <p:column headerText="Last Year" />
      <p:column headerText="This Year" />
      <p:column headerText="Last Year" />
      <p:column headerText="This Year" />
    </p:row>
  </p:columnGroup>
  <p:column>
    #{sale.manufacturer}
  </p:column>
  <p:column>
    #{sale.lastYearProfit}%
  </p:column>
  <p:column>
    #{sale.thisYearProfit}%
  </p:column>
  <p:column>
    #{sale.lastYearSale}$
  </p:column>
  <p:column>
    #{sale.thisYearSale}$
  </p:column>
  <p:columnGroup type="footer">
    <p:row>
      <p:column colspan="3" style="text-align:right" footerText="Totals:" />
      <p:column footerText="#{tableBean.lastYearTotal}$" />
      <p:column footerText="#{tableBean.thisYearTotal}$" />
    </p:row>
  </p:columnGroup>
</p:dataTable>

```

```

public class CarBean {

    private List<Sale> sales;

    public CarBean() {
        sales = //create a list of BrandSale objects
    }

    public List<Sale> getSales() {
        return this.sales;
    }

}

```

For frozen columns, use *frozenHeader*, *frozenFooter*, *scrollableHeader* and *scrollableFooter* types.

Scrolling

Scrolling makes the header-footer of the table fixed and the body part scrollable. *scrollable* attribute must be enabled and depending on the scrolling orientation, *scrollHeight* and/or *scrollWidth* options must be specified.

```
<p:dataTable var="car" value="#{bean.data}" scrollable="true" scrollHeight="150">
  <p:column />
  //columns
</p:dataTable>
```

| Model | Year | Manufacturer | Color |
|----------|------|--------------|--------|
| 069794d7 | 1991 | Volvo | Silver |
| 4aeec6c | 1993 | Ford | Green |
| 09cbc05c | 1983 | Chrysler | Maroon |
| 2d374a04 | 1964 | Ferrari | Red |
| 9c09bc54 | 1987 | Volkswagen | Blue |
| 25d45a08 | 1993 | Opel | White |
| Model | Year | Year | Year |

Simple scrolling renders all data to client whereas live scrolling is useful to deal with huge data, in this case data is fetched whenever the scrollbar reaches bottom. Set *liveScroll* to enable this option;

```
<p:dataTable var="car" value="#{bean.data}" scrollable="true" scrollHeight="150"
  liveScroll="true">

  <p:column />
  //columns
</p:dataTable>
```

Scrolling has 3 modes; x, y and x-y scrolling that are defined by *scrollHeight* and *scrollWidth*. These two scroll attributes can be defined using integer values indicating fixed pixels or percentages relative to the container dimensions.

Frozen Rows

Certain rows can be fixed in a scrollable table by using the *frozenRows* attribute that defines the number of rows to freeze from the start.

```
<p:dataTable var="car" value="#{bean.data}" scrollable="true" scrollHeight="150"
  frozenRows="2">

  <p:column />
  //columns
</p:dataTable>
```

Frozen Columns

Specific columns can be fixed while the rest of them remain as scrollable. *frozenColumns* defines the number of columns to freeze from the start.

```

<p:dataTable var="car" value="#{bean.data}" scrollable="true" scrollWidth="200"
  frozenColumns="2">

  <p:column />
  //columns
</p:dataTable>

```

Expandable Rows

RowToggler and *RowExpansion* facets are used to implement expandable rows.

```

<p:dataTable var="car" value="#{carBean.cars}">

  <f:facet name="header">
    Expand rows to see detailed information
  </f:facet>

  <p:column>
    <p:rowToggler />
  </p:column>


  //columns

  <p:rowExpansion>
    //Detailed content of a car
  </p:rowExpansion>

</p:dataTable>

```

`p:rowToggler` component places an expand/collapse icon, clicking on a collapsed row loads expanded content with ajax. If you need to display a row as expanded by default, use *expandedRow* attribute which is evaluated before rendering of each row so value expressions are supported. Additionally, *rowExpandMode* attribute defines if multiple rows can be expanded at the same time or not, valid values are "single" and "multiple" (default).

| Expand rows to see detailed information | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Model | Year |
| <input type="radio"/> 0b8313c2 | 1976 |
| <input type="radio"/> 2be34a8c | 1995 |
| <input type="radio"/> 08e342c4 | 2004 |
| <input type="radio"/> b5d03231 | 1998 |
| <div style="border: 1px solid #ccc; padding: 5px;">  <p>Model: b5d03231 Year: 1998 Manufacturer: Mercedes Color: Red</p> </div> | |
| <input type="radio"/> b50b6dcc | 1974 |
| <input type="radio"/> db39801c | 1995 |
| <input type="radio"/> f76c474f | 1989 |
| <input type="radio"/> 2c9b67a2 | 2005 |
| <input type="radio"/> 94fb553f | 1973 |

Editing

Incell editing provides an easy way to display editable data. *p:cellEditor* is used to define the cell editor of a particular column. There are two types of editing, *row* and *cell*. Row editing is the default mode and used by adding a *p:rowEditor* component as row controls.


```











<p:dataTable var="car" value="#{carBean.cars}" editable="true">

  <f:facet name="header">
    In-Cell Editing
  </f:facet>

  <p:column headerText="Model">
    <p:cellEditor>
      <f:facet name="output">
        <h:outputText value="#{car.model}" />
      </f:facet>
      <f:facet name="input">
        <h:inputText value="#{car.model}"/>
      </f:facet>
    </p:cellEditor>
  </p:column>
  //more columns with cell editors

  <p:column>
    <p:rowEditor />
  </p:column>
</p:dataTable>

```

| In-Cell Editing | | | | |
|-----------------|------|--------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model | Year | Manufacturer | Color | Options |
| 824641ad | 1976 | Volvo | Yellow |  |
| a9bf1625 | 1961 | Volkswagen | Orange |  |
| d859a7ba | 1977 | Ferrari | Brown |  |
| 9379f6f5 | 1961 | Renault | Silver |   |
| 744a8017 | 1960 | Chrysler | Silver |  |
| 80feefe5 | 2000 | Opel | Yellow |  |
| 9e0c7267 | 1982 | Opel | Red |  |
| 33124250 | 1984 | Ford | Red |  |
| 0349899f | 1977 | Renault | Red |  |

When pencil icon is clicked, row is displayed in editable mode meaning input facets are displayed and output facets are hidden. Clicking tick icon only saves that particular row and cancel icon reverts the changes, both options are implemented with ajax interaction.

Another option for incell editing is cell editing, in this mode a cell switches to edit mode when it is clicked, losing focus triggers an ajax event to save the change value.

Lazy Loading

Lazy Loading is an approach to deal with huge datasets efficiently, regular ajax based pagination works by rendering only a particular page but still requires all data to be loaded into memory. Lazy loading datatable renders a particular page similarly but also only loads the page data into memory not the whole dataset. In order to implement this, you'd need to bind a *org.primefaces.model.LazyDataModel* as the value and implement *load* method and enable *lazy* option. Also it is required to implement *getRowData* and *getRowKey* if you have selection enabled.

```
<p:dataTable var="car" value="#{carBean.model}" paginator="true" rows="10"
  lazy="true">
  //columns
</p:dataTable>
```

```
public class CarBean {

    private LazyDataModel model;

    public CarBean() {
        model = new LazyDataModel() {
            @Override
            public void load(int first, int pageSize, String sortField,
                SortOrder sortOrder, Map<String, Object> filters) {
                //load physical data
            }
        };

        int totalRowCount = //logical row count based on a count query
        model.setRowCount(totalRowCount);
    }

    public LazyDataModel getModel() {
        return model;
    }
}
```

DataTable calls your load implementation whenever a paging, sorting or filtering occurs with following parameters;

- first: Offset of first data to start from
- pageSize: Number of data to load
- sortField: Name of sort field
- sortOrder: SortOrder enum.
- filter: Filter map with field name as key (e.g. "model" for filterBy="#{car.model}") and value.

In addition to load method, totalRowCount needs to be provided so that paginator can display itself according to the logical number of rows to display.

It is suggested to use *field* attribute of column component to define the field names passed as sortField and filterFields, otherwise these fields would be tried to get extracted from the value expression which is not possible in cases like composite components.

Sticky Header

Sticky Header feature makes the datatable header visible on page scrolling.

```
<p:dataTable var="car" value="#{carBean.model}" stickyHeader="true">
  //columns
</p:dataTable>
```

| Model | Year | Manufacturer | Color |
|----------|------|--------------|--------|
| d975132e | 2006 | Volvo | White |
| 9479fe68 | 2002 | Opel | White |
| 1aaad80a | 2000 | Opel | Orange |
| 6082eb65 | 1965 | Audi | Red |
| 359ee0be | 1967 | Mercedes | White |
| 40a6a578 | 2006 | Ferrari | Red |
| 3c96cad6 | 1983 | Volkswagen | Blue |



| Model | Year | Manufacturer | Color |
|----------|------|--------------|--------|
| 9479fe68 | 2002 | Opel | White |
| 1aaad80a | 2000 | Opel | Orange |
| 6082eb65 | 1965 | Audi | Red |
| 359ee0be | 1967 | Mercedes | White |
| 40a6a578 | 2006 | Ferrari | Red |
| 3c96cad6 | 1983 | Volkswagen | Blue |
| 2f146e89 | 2002 | Audi | Blue |
| beaa8f3d | 1989 | BMW | Blue |
| 90049864 | 1984 | Audi | White |
| acf9632b | 1992 | Audi | Yellow |
| a46a5b9a | 1992 | Chvsler | White |

SummaryRow

Summary is a helper component to display a summary for the grouping which is defined by the sortBy option.

| Model | Year | Manufacturer | Color |
|---------------|------|--------------|----------------|
| 30d423c1 | 1995 | Volvo | Orange |
| caa74a90 | 2005 | Volvo | White |
| 2295d17b | 1996 | Volvo | Blue |
| d9548573 | 1990 | Volvo | Black |
| 3f2fddb1 | 1979 | Volvo | Blue |
| c9cb10af | 2007 | Volvo | Maroon |
| d69007fb | 1998 | Volvo | Black |
| Total: | | | 40272\$ |
| 986742ea | 1966 | Volkswagen | Orange |
| f5045e9a | 2006 | Volkswagen | Red |
| 3498c563 | 1994 | Volkswagen | Red |
| Total: | | | 61413\$ |

```

<p:dataTable var="car" value="#{tableBean.cars}">

  <p:column headerText="Model">
    #{car.model}
  </p:column>

  <p:column headerText="Year" sortBy="year">
    #{car.year}
  </p:column>

  <p:column headerText="Manufacturer" sortBy="manufacturer">
    #{car.manufacturer}
  </p:column>

  <p:column headerText="Color" sortBy="color">
    #{car.color}
  </p:column>

  <p:summaryRow>
    <p:column colspan="3" style="text-align:right">
      Total:
    </p:column>

    <p:column>
      #{tableBean.randomPrice}$
    </p:column>
  </p:summaryRow>
</p:dataTable>

```

Column Toggler

Visibility of columns can be toggled using the column toggler helper component.

| List of Cars | | |
|--------------|--------|------|
| Model | Color | Year |
| 7ec4ef00 | Yellow | 2007 |
| 96b9492d | Yellow | 1984 |
| ae9742a4 | Orange | 1972 |
| e4d0922b | Green | 2000 |
| 176a7f17 | Black | 1994 |
| bebf3563 | Brown | 1977 |
| b9a045fd | Black | 1960 |
| 82cafa95 | Silver | 1995 |
| 49d09cbd | Silver | 1963 |

Columns

Model

Manufacturer

Color

Year

```

<p:dataTable var="car" value="#{tableBean.cars}">

    <f:facet name="header">
        List of Cars

        <p:commandButton id="toggler" type="button" value="Columns"
style="float:right" icon="ui-icon-calculator" />
        <p:columnToggler datasource="cars" trigger="toggler" />
    </f:facet>

    <p:column headerText="Model">
        #{car.model}
    </p:column>

    <p:column headerText="Year" sortBy="year">
        #{car.year}
    </p:column>

    <p:column headerText="Manufacturer" sortBy="manufacturer">
        #{car.manufacturer}
    </p:column>

    <p:column headerText="Color" sortBy="color">
        #{car.color}
    </p:column>

</p:dataTable>

```

On page load, column chooser finds all columns of datatable and generates the ui. If you'd like some of the columns to be ignored, set *toggleable* option of a column as false and for certain ones to be hidden by default, set *visible* as false. Optional *toggle* ajax behavior is provided by *columnChooser* component to listen to toggle events at server side. Listener of this behavior gets an *org.primefaces.event.ToggleEvent* as a parameter that gives the visibility and index of the column being toggled.

Add Row

When a new data needs to be added to the datatable, instead of updating the whole table to show it, just call *addRow()* client side method and it will append the *tr* element only.

```

<p:dataTable var="car" value="#{dtBasicView.cars}" widgetVar="dt">
    <p:column headerText="Id">
        <h:inputText value="#{car.id}" />
    </p:column>
    <p:column headerText="Year">
        <h:inputText value="#{car.year}" />
    </p:column>
    <p:column headerText="Brand">
        <h:inputText value="#{car.brand}" />
    </p:column>
</p:dataTable>

<p:commandButton value="Add" actionListener="#{dtBasicView.addCar}"
oncomplete="PF('dt').addRow()" process="@this"/>

```

Reordering Rows

Rows of the table can be reordered using drag&drop. Set `draggableRows` attribute to `true` to enable this feature.

Optional `rowReorder` ajax behavior is provided to listen to reorder events at server side. Listener of this behavior gets an `org.primefaces.event.ReorderEvent` as a parameter that gives the past and current index of the row being moved.

```
<p:dataTable var="car" value="#{tableBean.cars}" draggableRows="true">
    <p:ajax event="rowReorder" listener="#{tableBean.onRowReorder}" />
    <p:column headerText="Model">
        #{car.model}
    </p:column>
    //columns
</p:dataTable>
```

```
public class TableBean {
    //...
    public void onRowReorder(ReorderEvent event) {
        //int from = event.getFromIndex();
        //int end = event.getEndIndex();
    }
}
```

Reordering Columns

Columns of the table can be reordered using drag&drop as well. Set `draggableColumns` attribute to `true` to enable this feature. Optional `colReorder` ajax behavior is provided to listen to reorder events at server side.

```
<p:dataTable var="car" value="#{tableBean.cars}" draggableColumns="true">
    <p:column headerText="Model">
        #{car.model}
    </p:column>
    //columns
</p:dataTable>
```

Responsive DataTable

DataTable has two responsive modes; priority and reflow. In priority mode, responsiveness is based on column priorities that vary between 1 and 6. Lower value means higher priority. On the other hand in reflow mode that is enabled by setting `reflow` to `true`, all columns will be visible but displayed as stacked.

Ajax Behavior Events

| Event | Listener Parameter | Fired |
|---------------------|----------------------------------------|---------------------------------------------------|
| page | org.primefaces.event.data.PageEvent | On pagination. |
| sort | org.primefaces.event.data.SortEvent | When a column is sorted. |
| filter | org.primefaces.event.data.FilterEvent | On filtering. |
| rowSelect | org.primefaces.event.SelectEvent | When a row is being selected. |
| rowUnselect | org.primefaces.event.UnselectEvent | When a row is being unselected. |
| rowEdit | org.primefaces.event.RowEditEvent | When a row is edited. |
| rowEditInit | org.primefaces.event.RowEditEvent | When a row switches to edit mode |
| rowEditCancel | org.primefaces.event.RowEditEvent | When row edit is cancelled. |
| colResize | org.primefaces.event.ColumnResizeEvent | When a column is being selected. |
| toggleSelect | org.primefaces.event.ToggleSelectEvent | When header checkbox is toggled. |
| colReorder | - | When columns are reordered. |
| rowSelectRadio | org.primefaces.event.SelectEvent | Row selection with radio. |
| rowSelectCheckbox | org.primefaces.event.SelectEvent | Row selection with checkbox. |
| rowUnselectCheckbox | org.primefaces.event.UnselectEvent | Row unselection with checkbox. |
| rowDbselect | org.primefaces.event.SelectEvent | Row selection with double click. |
| rowToggle | org.primefaces.event.ToggleEvent | Row expand or collapse. |
| contextMenu | org.primefaces.event.SelectEvent | ContextMenu display. |
| cellEdit | org.primefaces.event.CellEditEvent | When a cell is edited. |
| cellEditCancel | - | When a cell edit is cancelled e.g with escape key |
| rowReorder | org.primefaces.event.ReorderEvent | On row reorder. |

For example, datatable below makes an ajax request when a row is selected with a click on row.

```
<p:dataTable var="car" value="#{carBean.model}">
  <p:ajax event="rowSelect" update="another_component" />
  //columns
</p:dataTable>
```

Moreover *org.primefaces.event.data.PostSortEvent*, *org.primefaces.event.data.PostFilterEvent* and *org.primefaces.event.data.PostPageEvent*, are available to be used with `f:event` tag.

Client Side API

Widget: *PrimeFaces.widget.DataTable*

| Method | Params | Return Type | Description |
|-------------------------|------------------------------------------------------------------------------------------------------------|-------------|------------------------------------|
| getPaginator() | - | Paginator | Returns the paginator instance. |
| clearFilters() | - | void | Clears all column filters |
| getSelectedRowCount() | | Number | Returns number of selected rows. |
| selectRow(r, silent) | <i>r</i> : number or tr element as jQuery object, <i>silent</i> : flag to fire row select ajax behavior | void | Selects the given row. |
| unselectRow(r, silent) | <i>r</i> : number or tr element as jQuery object, <i>silent</i> : flag to fire row select ajax behavior | void | Unselects the given row. |
| unselectAllRows() | - | void | Unselects all rows. |
| toggleCheckAll() | - | void | Toggles header checkbox state. |
| filter() | - | Void | Filters the data. |
| selectAllRows() | - | void | Select all rows. |
| selectAllRowsOnPage() | - | void | Select all rows on current page. |
| unselectAllRowsOnPage() | - | void | Unselect all rows on current page. |

Skinning

DataTable resides in a main container element which *style* and *styleClass* options apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Class | Applies |
|-----------------------------|-------------------------------|
| .ui-datatable | Main container element |
| .ui-datatable-data | Table body |
| .ui-datatable-empty-message | Empty message row |
| .ui-datatable-header | Table header |
| .ui-datatable-footer | Table footer |
| .ui-sortable-column | Sortable columns |
| .ui-sortable-column-icon | Icon of a sortable icon |
| .ui-expanded-row-content | Content of an expanded row |
| .ui-row-toggler | Row toggler for row expansion |
| .ui-editable-column | Columns with a cell editor |

| Class | Applies |
|-------------------------------------|------------------------------------------------------------|
| .ui-cell-editor | Container of input and output controls of an editable cell |
| .ui-cell-editor-input | Container of input control of an editable cell |
| .ui-cell-editor-output | Container of output control of an editable cell |
| .ui-datatable-even | Even numbered rows |
| .ui-datatable-odd | Odd numbered rows |
| .ui-datatable-scrollable | Main container element of a scrollable table. |
| .ui-datatable-scrollable-header | Header wrapper of a scrollable table. |
| .ui-datatable-scrollable-header-box | Header container of a scrollable table. |
| .ui-datatable-scrollable-body | Body container of a scrollable table. |
| .ui-datatable-scrollable-footer | Footer wrapper of a scrollable table. |
| .ui-datatable-scrollable-footer-box | Footer container of a scrollable table. |
| .ui-datatable-resizable | Main container element of a resizable table. |
| .ui-datatable-frozencolumn | Frozen columns. |

3.36 DefaultCommand

Which command to submit the form with when enter key is pressed a common problem in web apps not just specific to JSF. Browsers tend to behave differently as there doesn't seem to be a standard and even if a standard exists, IE probably will not care about it. There are some ugly workarounds like placing a hidden button and writing javascript for every form in your app. DefaultCommand solves this problem by normalizing the command(e.g. button or link) to submit the form with on enter key press.

Info

| | |
|------------------|-----------------------------------------------------------------------|
| Tag | defaultCommand |
| Component Class | org.primefaces.component.defaultcommand.DefaultCommand |
| Component Type | org.primefaces.component.DefaultCommand |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.DefaultCommandRenderer |
| Renderer Class | org.primefaces.component.defaultcommand.DefaultCommandRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget |
| target | null | String | Identifier of the default command component. |
| scope | null | String | Identifier of the ancestor component to enable multiple default commands in a form. |

Getting Started with the DefaultCommand

DefaultCommand must be nested inside a form requires *target* option to reference a clickable command. Example below triggers *btn2* when enter key is pressed. Note that an input must have focused due to browser nature.

```
<h:form id="form">

  <h:panelGrid columns="3" cellpadding="5">
    <h:outputLabel for="name" value="Name:" style="font-weight:bold"/>
    <p:inputText id="name" value="#{defaultCommandBean.text}" />
    <h:outputText value="#{defaultCommandBean.text}" id="display" />
  </h:panelGrid>

  <p:commandButton value="Button1" id="btn1" actionListener="#{bean.submit1}"
    ajax="false"/>
  <p:commandButton value="Button2" id="btn2" actionListener="#{bean.submit2}" />

  <h:commandButton value="Button3" id="btn3" actionListener="#{bean.submit3}" />

  <p:defaultCommand target="bt2" />

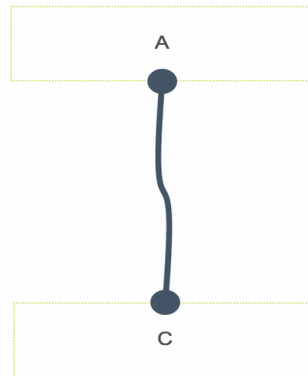
</h:form>
```

Scope

If you need multiple default commands on same page use scope attribute that refers to the ancestor component of the target input.

3.37 Diagram

Diagram is generic component to create visual elements and connect them on a web page. SVG is used on modern browsers and VML on IE 8 and below. Component is highly flexible in terms of api, events and theming.



Info

| | |
|------------------|---------------------------------------------------------|
| Tag | diagram |
| Component Class | org.primefaces.component.diagram.Diagram |
| Component Type | org.primefaces.component.Diagram |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.DiagramRenderer |
| Renderer Class | org.primefaces.component.diagram.DiagramRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget |
| value | null | String | Model of the diagram. |
| converter | null | Converter /String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id. |

| Name | Default | Type | Description |
|------------|---------|--------|------------------------------|
| style | null | String | Inline style of the diagram. |
| styleClass | null | String | Style class of the diagram. |

Getting started with the Diagram

Diagram requires a backend model to display.

```
<p:diagram value="#{diagramBasicView.model}" style="height:400px" />
```

There are various concepts in diagram model;

- Element: Main type to be connected.
- EndPoint: Ports of elements to be used in connection.
- Connector: Connector to join elements.
- Overlay: Decorators over connectors and endpoints.

```
public class BasicView {

    private DefaultDiagramModel model;

    @PostConstruct
    public void init() {
        model = new DefaultDiagramModel();
        model.setMaxConnections(-1);

        Element elementA = new Element("A", "20em", "6em");
        elementA.addEndPoint(new DotEndPoint(EndPointAnchor.BOTTOM));

        Element elementB = new Element("B", "10em", "18em");
        elementB.addEndPoint(new DotEndPoint(EndPointAnchor.TOP));

        Element elementC = new Element("C", "40em", "18em");
        elementC.addEndPoint(new DotEndPoint(EndPointAnchor.TOP));

        model.addElement(elementA);
        model.addElement(elementB);
        model.addElement(elementC);

        model.connect(new Connection(elementA.getEndpoints().get(0),
        elementB.getEndpoints().get(0)));
        model.connect(new Connection(elementA.getEndpoints().get(0),
        elementC.getEndpoints().get(0)));
    }

    public DiagramModel getModel() {
        return model;
    }
}
```

In diagram above, there are 3 elements each having endpoints of dot type. After adding them to the model, 2 connections are made, first one being A to B and second one from A to C.

Elements

Elements are the main part of diagram. Styling is done with css and positioning can be done using model. An element should have at least width and height defined to be displayed on page. They can be styled globally using `.ui-diagram-element` style class or individually using the `styleClass` property on `DiagramElement` class.

EndPoints

EndPoints are the ports available on an element that can be used for connections. An endpoint has a location defined by `EndPointAnchor`. Anchors can be static like "TopLeft" or dynamic like "AutoDefault". There are 4 types of EndPoints differentiated by their shapes;

- BlankEndPoint
- DotEndPoint
- RectangleEndPoint
- ImageEndPoint

An endpoint is added to an element using `addEndPoint` api;

```
element.addEndPoint(new DotEndPoint(EndPointAnchor.TOP));
```

Connections

A connection requires two endpoints, connector and optional decorators like overlays. There are four connector types;

- Bezier
- FlowChart
- Straight
- StateMachine

Default is bezier and it can be customized using default connector method globally in model or at connection level.

Global

```
DiagramModel model = new DefaultDiagramModel();

FlowChartConnector connector = new FlowChartConnector();
connector.setPaintStyle("{strokeStyle: '#C7B097', lineWidth: 3}");
model.setDefaultConnector(connector);
```

Per Connection

```
model.connect(new Connection(elementA.getEndpoints().get(0),
    elementB.getEndpoints().get(0), new FlowChartConnector()));
```

Overlays

Overlays are decorators for connectors and endpoints. Available ones are;

- ArrowOverlay
- DiamondOverlay
- LabelOverlay

Example below adds label and arrow for the connector;

```
Connection conn = new Connection(from, to);
conn.getOverlays().add(new ArrowOverlay(20, 20, 1, 1));
conn.getOverlays().add(new LabelOverlay(label, "flow-label", 0.5));
```



Dynamic Diagrams

A diagram can be edited after being initialized, to create new connections an element should be set as source and to receive new connections it should be a target. Ajax event callbacks such as "connect", "disconnect" and "connectionChange" are available.

```
ElementA.setSource(true);
ElementB.setTarget(true);
```

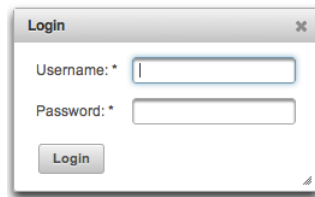
Ajax Behavior Events

Diagram provides ajax behavior event callbacks invoked by interactive diagrams.

| Event | Listener Parameter | Fired |
|------------------|-----------------------------------------------|--------------------------------|
| connect | org.primefaces.event.diagram.ConnectEvent | On new connection. |
| disconnect | org.primefaces.event.diagram.DisconnectEvent | When a connection is removed. |
| connectionChange | org.primefaces.event.diagram.ConnectionChange | When a connection has changed. |

3.38 Dialog

Dialog is a panel component that can overlay other elements on page.



Info

| | |
|------------------|-------------------------------------------------------|
| Tag | dialog |
| Component Class | org.primefaces.component.dialog.Dialog |
| Component Type | org.primefaces.component.Dialog |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.DialogRenderer |
| Renderer Class | org.primefaces.component.dialog.DialogRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget |
| header | null | String | Text of the header |
| draggable | true | Boolean | Specifies draggability |
| resizable | true | Boolean | Specifies resizableability |
| modal | false | Boolean | Enables modality. |
| visible | false | Boolean | When enabled, dialog is visible by default. |
| width | auto | Integer | Width of the dialog |
| height | auto | Integer | Height of the dialog |
| minWidth | 150 | Integer | Minimum width of a resizable dialog. |

| Name | Default | Type | Description |
|---------------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| minHeight | 0 | Integer | Minimum height of a resizable dialog. |
| style | null | String | Inline style of the dialog. |
| styleClass | null | String | Style class of the dialog |
| showEffect | null | String | Effect to use when showing the dialog |
| hideEffect | null | String | Effect to use when hiding the dialog |
| position | null | String | Defines where the dialog should be displayed |
| closable | true | Boolean | Defines if close icon should be displayed or not |
| onShow | null | String | Client side callback to execute when dialog is displayed. |
| onHide | null | String | Client side callback to execute when dialog is hidden. |
| appendTo | null | String | Appends the dialog to the element defined by the given search expression. |
| showHeader | true | Boolean | Defines visibility of the header content. |
| footer | null | String | Text of the footer. |
| dynamic | false | Boolean | Enables lazy loading of the content with ajax. |
| minimizable | false | Boolean | Whether a dialog is minimizable or not. |
| maximizable | false | Boolean | Whether a dialog is maximizable or not. |
| closeOnEscape | false | Boolean | Defines if dialog should close on escape key. |
| dir | ltr | String | Defines text direction, valid values are <i>ltr</i> and <i>rtl</i> . |
| focus | null | String | Defines which component to apply focus. |
| fitViewport | false | Boolean | Dialog size might exceed viewport if content is bigger than viewport in terms of height. <code>fitViewport</code> option automatically adjusts height to fit dialog within the viewport. |
| positionType | fixed | String | Defines whether dialog will be kept in viewport on scroll (fixed) or keep its position (absolute). |
| responsive | false | Boolean | In responsive mode, dialog adjusts itself based on screen width. |

Getting started with the Dialog

Dialog is a panel component containing other components, note that by default dialog is not visible.

```
<p:dialog>
  <h:outputText value="Resistance to PrimeFaces is Futile!" />
  //Other content
</p:dialog>
```

Show and Hide

Showing and hiding the dialog is easy using the client side api.

```
<p:dialog header="Header Text" widgetVar="dlg">//Content</p:dialog>
<p:commandButton value="Show" type="button" onclick="PF('dlg').show()" />
<p:commandButton value="Hide" type="button" onclick="PF('dlg').hide()" />
```

Effects

There are various effect options to be used when displaying and closing the dialog. Use *showEffect* and *hideEffect* options to apply these effects; blind, bounce, clip, drop, explode, fade, fold, highlight, puff, pulsate, scale, shake, size, slide and transfer.

```
<p:dialog showEffect="fade" hideEffect="explode" ...>
  //...
</p:dialog>
```

Position

By default dialog is positioned at center of the viewport and *position* option is used to change the location of the dialog. Possible values are;

- Single string value like *'center', 'left', 'right', 'top', 'bottom'* representing the position within viewport.
- Comma separated x and y coordinate values like *200, 500*
- Comma separated position values like *'top', 'right'*. (Use single quotes when using a combination)

Some examples are described below;

```
<p:dialog position="top" ...>
```

```
<p:dialog position="left,top" ...>
```

```
<p:dialog position="200,50" ...>
```

Focus

Dialog applies focus on first visible input on show by default which is useful for user friendliness however in some cases this is not desirable. Assume the first input is a popup calendar and opening the dialog shows a popup calendar. To customize default focus behavior, use focus attribute.

Ajax Behavior Events

close event is one of the ajax behavior events provided by dialog that is fired when the dialog is hidden. If there is a listener defined it'll be executed by passing an instance of *org.primefaces.event.CloseEvent*.

Example below adds a FacesMessage when dialog is closed and updates the messages component to display the added message.

```
<p:dialog>
  <p:ajax event="close" listener="#{dialogBean.handleClose}" update="msg" />
  //Content
</p:dialog>

<p:messages id="msg" />
```

```
public class DialogBean {

    public void handleClose(CloseEvent event) {
        //Add facesmessage
    }
}
```

Other provided ajax behavior events are **maximize**, **minimize**, **move**, **restoreMinimize**, **restoreMaximize** and **open**.

Client Side Callbacks

Similar to close listener, onShow and onHide are handy callbacks for client side in case you need to execute custom javascript.

```
<p:dialog onShow="alert('Visible')" onHide="alert('Hidden')">
  //Content
</p:dialog>
```

Client Side API

Widget: *PrimeFaces.widget.Dialog*

| Method | Params | Return Type | Description |
|-------------|--------|-------------|----------------------------------|
| show() | - | void | Displays dialog. |
| hide() | - | void | Closes dialog. |
| isVisible() | - | void | Returns visibility as a boolean. |

Skinning

Dialog resides in a main container element which *styleClass* option apply. Following is the list of structural style classes;

| Style Class | Applies |
|---------------------------|-----------------------------|
| .ui-dialog | Container element of dialog |
| .ui-dialog-titlebar | Title bar |
| .ui-dialog-title-dialog | Header text |
| .ui-dialog-titlebar-close | Close icon |
| .ui-dialog-content | Dialog body |

As skinning style classes are global, see the main theming section for more information.

Tips

- Use `appendTo` with care as the page definition and html dom would be different, for example if dialog is inside an `h:form` component and `appendToBody` is enabled, on the browser dialog would be outside of form and may cause unexpected results. In this case, nest a form inside a dialog.
- Do not place dialog inside tables, containers likes divs with relative positioning or with non-visible overflow defined, in cases like these functionality might be broken. This is not a limitation but a result of DOM model. For example dialog inside a layout unit, tabview, accordion are a couple of examples. Same applies to `confirmDialog` as well.
- A facet called “header” is available to provide custom content inside header instead of using header attribute.

3.39 Drag&Drop

Drag&Drop utilities of PrimeFaces consists of two components; Draggable and Droppable.

3.39.1 Draggable

Info

| | |
|------------------|-------------------------------------------------------|
| Tag | draggable |
| Component Class | org.primefaces.component.dnd.Draggable |
| Component Type | org.primefaces.component.Draggable |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.DraggableRenderer |
| Renderer Class | org.primefaces.component.dnd.DraggableRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget |
| proxy | false | Boolean | Displays a proxy element instead of actual element. |
| dragOnly | false | Boolean | Specifies a draggable that can't be dropped. |
| for | null | String | Id of the component to add draggable behavior |
| disabled | false | Boolean | Disables draggable behavior when true. |
| axis | null | String | Specifies drag axis, valid values are 'x' and 'y'. |
| containment | null | String | Constraints dragging within the boundaries of containment element |
| helper | null | String | Helper element to display when dragging |
| revert | false | Boolean | Reverts draggable to it's original position when not dropped onto a valid droppable |
| snap | false | Boolean | Draggable will snap to edge of near elements |
| snapMode | null | String | Specifies the snap mode. Valid values are 'both', 'inner' and 'outer'. |

| Name | Default | Type | Description |
|---------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------|
| snapTolerance | 20 | Integer | Distance from the snap element in pixels to trigger snap. |
| zindex | null | Integer | ZIndex to apply during dragging. |
| handle | null | String | Specifies a handle for dragging. |
| opacity | 1 | Double | Defines the opacity of the helper during dragging. |
| stack | null | String | In stack mode, draggable overlap is controlled automatically using the provided selector, dragged item always overlays other draggables. |
| grid | null | String | Dragging happens in every x and y pixels. |
| scope | null | String | Scope key to match draggables and droppables. |
| cursor | crosshair | String | CSS cursor to display in dragging. |
| dashboard | null | String | Id of the dashboard to connect with. |
| appendTo | null | String | A search expression to define which element to append the draggable helper to. |

Getting started with Draggable

Any component can be enhanced with draggable behavior, basically this is achieved by defining the id of component using the *for* attribute of draggable.

```
<p:panel id="pnl" header="Draggable Panel">
  <h:outputText value="This is actually a regular panel" />
</p:panel>

<p:draggable for="pnl"/>
```

If you omit the *for* attribute, parent component will be selected as the draggable target.

```
<h:graphicImage id="campnou" value="/images/campnou.jpg">
  <p:draggable />
</h:graphicImage>
```

Handle

By default any point in dragged component can be used as handle, if you need a specific handle, you can define it with *handle* option. Following panel is dragged using it's header only.

```
<p:panel id="pnl" header="Draggable Panel">
  <h:outputText value="I can only be dragged using my header" />
</p:panel>
<p:draggable for="pnl" handle="div.ui-panel-titlebar"/>
```

Drag Axis

Dragging can be limited to either horizontally or vertically.

```
<p:panel id="pnl" header="Draggable Panel">
    <h:outputText value="I am dragged on an axis only" />
</p:panel>

<p:draggable for="pnl" axis="x or y"/>
```

Clone

By default, actual component is used as the drag indicator, if you need to keep the component at it's original location, use a clone helper.

```
<p:panel id="pnl" header="Draggable Panel">
    <h:outputText value="I am cloned" />
</p:panel>

<p:draggable for="pnl" helper="clone"/>
```

Revert

When a draggable is not dropped onto a matching droppable, revert option enables the component to move back to it's original position with an animation.

```
<p:panel id="pnl" header="Draggable Panel">
    <h:outputText value="I will be reverted back to my original position" />
</p:panel>

<p:draggable for="pnl" revert="true"/>
```

Opacity

During dragging, opacity option can be used to give visual feedback, helper of following panel's opacity is reduced in dragging.

```
<p:panel id="pnl" header="Draggable Panel">
    <h:outputText value="My opacity is lower during dragging" />
</p:panel>

<p:draggable for="pnl" opacity="0.5"/>
```

Grid

Defining a grid enables dragging in specific pixels. This value takes a comma separated dimensions in x,y format.

```
<p:panel id="pnl" header="Draggable Panel">
    <h:outputText value="I am dragged in grid mode" />
</p:panel>
<p:draggable for="pnl" grid="20,40"/>
```

Containment

A draggable can be restricted to a certain section on page, following draggable cannot go outside of it's parent.

```
<p:outputPanel layout="block" style="width:400px;height:200px;">
  <p:panel id="conpnl" header="Restricted">
    <h:outputText value="I am restricted to my parent's boundaries" />
  </p:panel>
</p:outputPanel>

<p:draggable for="conpnl" containment="parent" />
```


3.39.2 Droppable

Info

| | |
|------------------|-------------------------------------------------------|
| Tag | droppable |
| Component Class | org.primefaces.component.dnd.Droppable |
| Component Type | org.primefaces.component.Droppable |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.DroppableRenderer |
| Renderer Class | org.primefaces.component.dnd.DroppableRenderer |

Attributes

| Name | Default | Type | Description |
|------------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Variable name of the client side widget |
| for | null | String | Id of the component to add droppable behavior |
| disabled | false | Boolean | Disables or enables droppable behavior |
| hoverStyleClass | null | String | Style class to apply when an acceptable draggable is dragged over. |
| activeStyleClass | null | String | Style class to apply when an acceptable draggable is being dragged. |
| onDrop | null | String | Client side callback to execute when a draggable is dropped. |
| accept | null | String | Selector to define the accepted draggables. |
| scope | null | String | Scope key to match draggables and droppables. |
| tolerance | null | String | Specifies the intersection mode to accept a draggable. |
| datasource | null | String | Id of a UIData component to connect with. |

Getting Started with Droppable

Usage of droppable is very similar to draggable, droppable behavior can be added to any component specified with the `for` attribute.

```
<p:outputPanel id="slot" styleClass="slot" />
<p:droppable for="slot" />
```

`slot styleClass` represents a small rectangle.

```
<style type="text/css">
    .slot {
        background:#FF9900;
        width:64px;
        height:96px;
        display:block;
    }
</style>
```

If `for` attribute is omitted, parent component becomes droppable.

```
<p:outputPanel id="slot" styleClass="slot">
    <p:droppable />
</p:outputPanel>
```

Ajax Behavior Events

drop is the only and default ajax behavior event provided by droppable that is processed when a valid draggable is dropped. In case you define a listener it'll be executed by passing an *org.primefaces.event.DragDrop* event instance parameter holding information about the dragged and dropped components.

Following example shows how to enable draggable images to be dropped on droppables.

```
<p:graphicImage id="messi" value="barca/messi_thumb.jpg" />
<p:draggable for="messi"/>

<p:outputPanel id="zone" styleClass="slot" />
<p:droppable for="zone">
    <p:ajax listener="#{ddController.onDrop}" />
</p:droppable>
```

```
public void onDrop(DragDropEvent ddEvent) {
    String draggedId = ddEvent.getDragId();           //Client id of dragged component
    String droppedId = ddEvent.getDropId();           //Client id of dropped component
    Object data = ddEvent.getData();                   //Model object of a datasource
}
```

onDrop

onDrop is a client side callback that is invoked when a draggable is dropped, it gets two parameters event and ui object holding information about the drag drop event.

```
<p:outputPanel id="zone" styleClass="slot" />
<p:droppable for="zone" onDrop="handleDrop"/>
```

```
function handleDrop(event, ui) {
    var draggable = ui.draggable, //draggable element, a jQuery object
        helper = ui.helper, //helper element of draggable, a jQuery object
        position = ui.position, //position of draggable helper
        offset = ui.offset; //absolute position of draggable helper
}
```

DataSource

Droppable has special care for data elements that extend from UIData(e.g. datatable, datagrid), in order to connect a droppable to accept data from a data component define datasource option as the id of the data component. Example below show how to drag data from datagrid and drop onto a droppable to implement a dragdrop based selection. Dropped cars are displayed with a datatable.

```
public class TableBean {

    private List<Car> availableCars;
    private List<Car> droppedCars;

    public TableBean() {
        availableCars = //populate data
    }

    //getters and setters

    public void onCarDrop(DragDropEvent event) {
        Car car = ((Car) ddEvent.getData());
        droppedCars.add(car);
        availableCars.remove(car);
    }
}
```

```

<h:form id="carForm">
  <p:fieldset legend="AvailableCars">
    <p:dataGrid id="availableCars" var="car"
      value="#{tableBean.availableCars}" columns="3">
      <p:column>
        <p:panel id="pnl" header="#{car.model}" style="text-align:center">
          <p:graphicImage value="/images/cars/#{car.manufacturer}.jpg" />
        </p:panel>
        <p:draggable for="pnl" revert="true" handle=".ui-panel-titlebar"
          stack=".ui-panel"/>
      </p:column>
    </p:dataGrid>
  </p:fieldset>

  <p:fieldset id="selectedCars" legend="Selected Cars" style="margin-top:20px">
    <p:outputPanel id="dropArea">

      <h:outputText value="!!!Drop here!!!"
        rendered="#{empty tableBean.droppedCars}" style="font-size:24px;" />

      <p:dataTable var="car" value="#{tableBean.droppedCars}"
        rendered="#{not empty tableBean.droppedCars}">
        <p:column headerText="Model">
          <h:outputText value="#{car.model}" />
        </p:column>
        <p:column headerText="Year">
          <h:outputText value="#{car.year}" />
        </p:column>
        <p:column headerText="Manufacturer">
          <h:outputText value="#{car.manufacturer}" />
        </p:column>
        <p:column headerText="Color">
          <h:outputText value="#{car.color}" />
        </p:column>
      </p:dataTable>
    </p:outputPanel>
  </p:fieldset>

  <p:droppable for="selectedCars" tolerance="touch"
    activeStyleClass="ui-state-highlight" datasource="availableCars"
    onDrop="handleDrop"/>
  <p:ajax listener="#{tableBean.onCarDrop}" update="dropArea availableCars" />
</p:droppable>

</h:form>

<script type="text/javascript">
  function handleDrop(event, ui) {
    ui.draggable.fadeOut('fast');           //fade out the dropped item
  }
</script>

```

Tolerance

There are four different tolerance modes that define the way of accepting a draggable.

| Mode | Description |
|-----------|------------------------------------------------------|
| fit | draggable should overlap the droppable entirely |
| intersect | draggable should overlap the droppable at least 50% |
| pointer | pointer of mouse should overlap the droppable |
| touch | draggable should overlap the droppable at any amount |

Acceptance

You can limit which draggables can be dropped onto droppables using scope attribute which a draggable also has. Following example has two images, only first image can be accepted by droppable.

```
<p:graphicImage id="messi" value="barca/messi_thumb.jpg" />
<p:draggable for="messi" scope="forward"/>

<p:graphicImage id="xavi" value="barca/xavi_thumb.jpg" />
<p:draggable for="xavi" scope="midfield"/>

<p:outputPanel id="forwardonly" styleClass="slot" scope="forward" />
<p:droppable for="forwardonly" />
```

Skinning

hoverStyleClass and *activeStyleClass* attributes are used to change the style of the droppable when interacting with a draggable.

3.40 Dock

Dock component mimics the well known dock interface of Mac OS X.



Info

| | |
|------------------|---------------------------------------------------|
| Tag | dock |
| Component Class | org.primefaces.component.dock.Dock |
| Component Type | org.primefaces.component.Dock |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.DockRenderer |
| Renderer Class | org.primefaces.component.dock.DockRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|-----------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UICoMponent instance in a backing bean |
| model | null | MenuModel | MenuModel instance to create menus programmatically |
| position | bottom | String | Position of the dock, <i>bottom</i> or <i>top</i> . |
| itemWidth | 40 | Integer | Initial width of items. |
| maxWidth | 50 | Integer | Maximum width of items. |
| proximity | 90 | Integer | Distance to enlarge. |
| halign | center | String | Horizontal alignment, |
| widgetVar | null | String | Name of the client side widget. |

Getting started with the Dock

A dock is composed of menuitems.

```
<p:dock>
  <p:menuItem value="Home" icon="/images/dock/home.png" url="#" />
  <p:menuItem value="Music" icon="/images/dock/music.png" url="#" />
  <p:menuItem value="Video" icon="/images/dock/video.png" url="#" />
  <p:menuItem value="Email" icon="/images/dock/email.png" url="#" />
  <p:menuItem value="Link" icon="/images/dock/link.png" url="#" />
  <p:menuItem value="RSS" icon="/images/dock/rss.png" url="#" />
  <p:menuItem value="History" icon="/images/dock/history.png" url="#" />
</p:dock>
```

Position

Dock can be located in two locations, *top* or *bottom* (default). For a dock positioned at top set position to top.

Dock Effect

When mouse is over the dock items, icons are zoomed in. The configuration of this effect is done via the `maxWidth` and `proximity` attributes.

Dynamic Menus

Menus can be created programmatically as well, see the dynamic menus part in menu component section for more information and an example.

Skinning

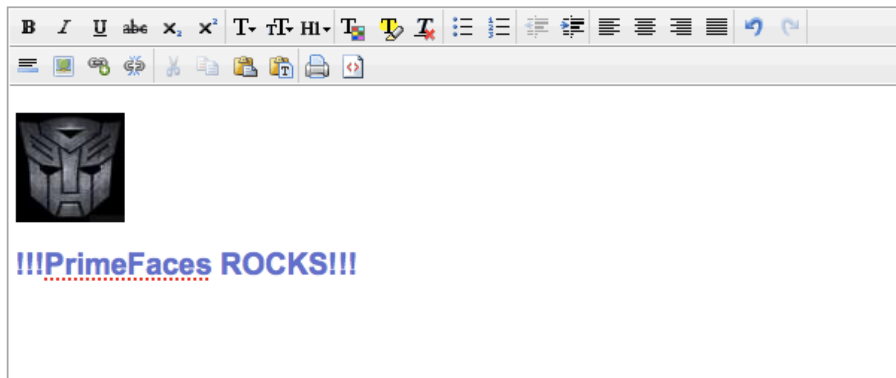
Following is the list of structural style classes, `{position}` can be *top* or *bottom*.

| Style Class | Applies |
|--------------------------------------------|----------------------|
| <code>.ui-dock-{position}</code> | Main container. |
| <code>.ui-dock-container-{position}</code> | Menu item container. |
| <code>.ui-dock-item-{position}</code> | Each menu item. |

As skinning style classes are global, see the main theming section for more information.

3.41 Editor

Editor is an input component with rich text editing capabilities.



Info

| | |
|------------------|-------------------------------------------------------|
| Tag | editor |
| Component Class | org.primefaces.component.editor.Editor |
| Component Type | org.primefaces.component.Editor |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.EditorRenderer |
| Renderer Class | org.primefaces.component.editor.EditorRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| value | null | Object | Value of the component than can be either an EL expression of a literal text. |
| converter | null | Converter/ String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id. |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required. |

| Name | Default | Type | Description |
|---------------------|---------|-------------|-----------------------------------------------------------------------------|
| validator | null | Method Expr | A method expression that refers to a method validationg the input. |
| valueChangeListener | null | Method Expr | A method expression that refers to a method for handling a valuchangeevent. |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fails. |
| widgetVar | null | String | Name of the client side widget. |
| controls | null | String | List of controls to customize toolbar. |
| height | null | Integer | Height of the editor. |
| width | null | Integer | Width of the editor. |
| disabled | false | Boolean | Disables editor. |
| style | null | String | Inline style of the editor container. |
| styleClass | null | String | Style class of the editor container. |
| onchange | null | String | Client side callback to execute when editor data changes. |
| maxlength | null | Integer | Maximum length of the raw input. |

Getting started with the Editor

Rich Text entered using the Editor is passed to the server using *value* expression.

```
public class Bean {
    private String text;
    //getter and setter
}
```

```
<p:editor value="#{bean.text}" />
```

Custom Toolbar

Toolbar of editor is easy to customize using *controls* option;

```
<p:editor value="#{bean.text}" controls="bold italic underline strikethrough" />
```



Here is the full list of all available controls;

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • bold • italic • underline • strikethrough • subscript • superscript • font • size • style • color • highlight • bullets • numbering • alignleft • center • alignright | <ul style="list-style-type: none"> • justify • undo • redo • rule • image • link • unlink • cut • copy • paste • pastetext • print • source • outdent • indent • removeFormat |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Client Side API

Widget: *PrimeFaces.widget.Editor*

| Method | Params | Return Type | Description |
|-------------------|--------|-------------|-----------------------------------------------------------------------|
| init() | - | void | Initializes a lazy editor, subsequent calls do not reinit the editor. |
| saveHTML() | - | void | Saves html text in iframe back to the textarea. |
| clear() | - | void | Clears the text in editor. |
| enable() | - | void | Enables editing. |
| disable() | - | void | Disables editing. |
| focus() | - | void | Adds cursor focus to edit area. |
| selectAll() | - | void | Selects all text in editor. |
| getSelectedHTML() | - | String | Returns selected text as HTML. |
| getSelectedText() | - | String | Returns selected text in plain format. |

Skinning

Following is the list of structural style classes.

| Style Class | Applies |
|---------------------|--------------------------------|
| .ui-editor | Main container. |
| .ui-editor-toolbar | Toolbar of editor. |
| .ui-editor-group | Button groups. |
| .ui-editor-button | Each button. |
| .ui-editor-divider | Divider to separate buttons. |
| .ui-editor-disabled | Disabled editor controls. |
| .ui-editor-list | Dropdown lists. |
| .ui-editor-color | Color picker. |
| .ui-editor-popup | Popup overlays. |
| .ui-editor-prompt | Overlays to provide input. |
| .ui-editor-message | Overlays displaying a message. |

Editor is not integrated with ThemeRoller as there is only one icon set for the controls.

3.42 Effect

Effect component is based on the jQuery UI effects library.

Info

| | |
|------------------|-------------------------------------------------------|
| Tag | effect |
| Tag Class | org.primefaces.component.effect.EffectTag |
| Component Class | org.primefaces.component.effect.Effect |
| Component Type | org.primefaces.component.Effect |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.EffectRenderer |
| Renderer Class | org.primefaces.component.effect.EffectRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | 1 | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| event | null | String | Dom event to attach the event that executes the animation |
| type | null | String | Specifies the name of the animation |
| for | null | String | Component that is animated |
| speed | 1000 | Integer | Speed of the animation in ms |
| delay | null | Integer | Time to wait until running the effect. |
| queue | true | Boolean | Specifies if effects should be queued. |

Getting started with Effect

Effect component needs a trigger and target which is effect's parent by default. In example below clicking `outputText` (trigger) will run the `pulsate` effect on `outputText(target)` itself.

```
<h:outputText value="#{bean.value}">
  <p:effect type="pulsate" event="click" />
</h:outputText>
```

Effect Target

There may be cases where you want to display an effect on another target on the same page while keeping the parent as the trigger. Use *for* option to specify a target.

```
<h:outputLink id="lnk" value="#">
  <h:outputText value="Show the Barca Temple" />
  <p:effect type="appear" event="click" for="img" />
</h:outputLink>

<p:graphicImage id="img" value="/ui/barca/campnou.jpg" style="display:none"/>
```

With this setting, outputLink becomes the trigger for the effect on graphicImage. When the link is clicked, initially hidden graphicImage comes up with a fade effect.

Note: It's important for components that have the effect component as a child to have an assigned id because some components do not render their clientId's if you don't give them an id explicitly.

List of Effects

Following is the list of effects;

- blind
- clip
- drop
- explode
- fold
- puff
- slide
- scale
- bounce
- highlight
- pulsate
- shake
- size
- transfer

Effect Configuration

Each effect has different parameters for animation like colors, duration and more. In order to change the configuration of the animation, provide these parameters with the `f:param` tag.

```
<h:outputText value="#{bean.value}">
  <p:effect type="scale" event="mouseover">
    <f:param name="percent" value="90"/>
  </p:effect>
</h:outputText>
```

It's important to provide string options with single quotes.

```
<h:outputText value="#{bean.value}">
  <p:effect type="blind" event="click">
    <f:param name="direction" value="'horizontal'" />
  </p:effect>
</h:outputText>
```

For the full list of configuration parameters for each effect, please see the jquery documentation;

<http://docs.jquery.com/UI/Effects>

Effect on Load

Effects can also be applied to any JSF component when page is loaded for the first time or after an ajax request is completed by using *load* as the event name. Following example animates messages with pulsate effect after ajax request completes.

```
<p:messages id="messages">
  <p:effect type="pulsate" event="load" delay="500">
    <f:param name="mode" value="'show'" />
  </p:effect>
</p:messages>

<p:commandButton value="Save" actionListener="#{bean.action}" update="messages"/>
```

3.43 FeedReader

FeedReader is used to display content from a feed.

Info

| | |
|------------------|---------------------------------------------------------------|
| Tag | feedReader |
| Component Class | org.primefaces.component.feedreader.FeedReader |
| Component Type | org.primefaces.component.FeedReader |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.FeedReaderRenderer |
| Renderer Class | org.primefaces.component.feedreader.FeedReaderRenderer |

Attributes

| Name | Default | Type | Description |
|----------|-----------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | String | URL of the feed. |
| var | null | String | Iterator to refer each item in feed. |
| size | Unlimited | Integer | Number of items to display. |

Getting started with FeedReader

FeedReader requires a feed url to display and renders its content for each feed item.


```
<p:feedReader value="http://rss.news.yahoo.com/rss/sports" var="feed">
  <h:outputText value="#{feed.title}" style="font-weight: bold"/>
  <h:outputText value="#{feed.description.value}" escape="false"/>
  <p:separator />
  <f:facet name="error">
    Something went wrong.
  </f:facet>
</p:feedReader>
```

Note that you need the ROME library in your classpath to make feedreader work.

3.44 Fieldset

Fieldset is a grouping component as an extension to html fieldset.

Simple FieldSet



The story begins as Don Vito Corleone, the head of a New York Mafia family, oversees his daughter's wedding. His beloved son Michael has just come home from the war, but does not intend to become part of his father's business. Through Michael's life the nature of the family business becomes clear. The business of the family is just like the head of the family, kind and benevolent to those who give respect, but given to ruthless violence whenever anything stands against the good of the family.

Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | fieldset |
| Component Class | org.primefaces.component.fieldset.Fieldset |
| Component Type | org.primefaces.component.Fieldset |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.FieldsetRenderer |
| Renderer Class | org.primefaces.component.fieldset.FieldsetRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| legend | null | String | Title text. |
| style | null | String | Inline style of the fieldset. |
| styleClass | null | String | Style class of the fieldset. |
| toggleable | false | Boolean | Makes content toggleable with animation. |
| toggleSpeed | 500 | Integer | Toggle duration in milliseconds. |
| collapsed | false | Boolean | Defines initial visibility state of content. |

Getting started with Fieldset

Fieldset is used as a container component for its children.

```
<p:fieldset legend="Simple Fieldset">
  <h:panelGrid column="2">
    <p:graphicImage value="/images/godfather/1.jpg" />
    <h:outputText value="The story begins as Don Vito Corleone ..." />
  </h:panelGrid>
</p:fieldset>
```

Legend

Legend can be defined in two ways, with legend attribute as in example above or using legend facet. Use facet way if you need to place custom html other than simple text.

```
<p:fieldset>
  <f:facet name="legend">
  </f:facet>

  //content
</p:fieldset>
```

When both legend attribute and legend facet are present, facet is chosen.

Toggleable Content

Clicking on fieldset legend can toggle contents, this is handy to use space efficiently in a layout. Set toggleable to true to enable this feature.

```
<p:fieldset legend="Toggleable Fieldset" toggleable="true">
  <h:panelGrid column="2">
    <p:graphicImage value="/images/godfather/2.jpg" />
    <h:outputText value="Francis Ford Coppola's legendary ..." />
  </h:panelGrid>
</p:fieldset>
```

– Toggleable Fieldset



Francis Ford Coppola's legendary continuation and sequel to his landmark 1972 film, *The Godfather*, parallels the young Vito Corleone's rise with his son Michael's spiritual fall, deepening *The Godfather's* depiction of the dark side of the American dream. In the early 1900s, the child Vito flees his Sicilian village for America after the local Mafia kills his family. Vito struggles to make a living, legally or illegally, for his wife and growing brood in Little Italy, killing the local Black Hand Fanucci after he demands his customary cut of the tyro's business. With Fanucci gone, Vito's communal stature grows.

Ajax Behavior Events

toggle is the default and only ajax behavior event provided by fieldset that is processed when the content is toggled. In case you have a listener defined, it will be invoked by passing an instance of *org.primefaces.event.ToggleEvent*.

Here is an example that adds a `facesmessage` and updates growl component when fieldset is toggled.

```
<p:growl id="messages" />

<p:fieldset legend="Toggleable Fieldset" toggleable="true"
  <p:ajax listener="#{bean.onToggle}" update="messages">

  //content

</p:fieldset>
```

```
public void onToggle(ToggleEvent event) {
    Visibility visibility = event.getVisibility();
    FacesMessage msg = new FacesMessage();
    msg.setSummary("Fieldset " + event.getId() + " toggled");
    msg.setDetail("Visibility: " + visibility);

    FacesContext.getCurrentInstance().addMessage(null, msg);
}
```

Client Side API

Widget: *PrimeFaces.widget.Fieldset*

| Method | Params | Return Type | Description |
|-----------------------|--------|-------------|---------------------------|
| <code>toggle()</code> | - | void | Toggles fieldset content. |

Skinning

`style` and `styleClass` options apply to the fieldset. Following is the list of structural style classes;

| Style Class | Applies |
|----------------------------------------------------------|------------------------------------------------|
| <code>.ui-fieldset</code> | Main container |
| <code>.ui-fieldset-toggleable</code> | Main container when fieldset is toggleable |
| <code>.ui-fieldset .ui-fieldset-legend</code> | Legend of fieldset |
| <code>.ui-fieldset-toggleable .ui-fieldset-legend</code> | Legend of fieldset when fieldset is toggleable |
| <code>.ui-fieldset .ui-fieldset-toggler</code> | Toggle icon on fieldset |

As skinning style classes are global, see the main theming section for more information.

Tips

- A collapsed fieldset will remain collapsed after a postback since fieldset keeps its toggle state internally, you don't need to manage this using `toggleListener` and `collapsed` option.

3.45 FileDownload

The legacy way to present dynamic binary data to the client is to write a servlet or a filter and stream the binary data. FileDownload presents an easier way to do the same.

Info

| | |
|----------------------|-------------------------------------------------------------------------|
| Tag | fileDownload |
| ActionListener Class | org.primefaces.component.filedownload.FileDownloadActionListener |

Attributes

| Name | Default | Type | Description |
|--------------------|------------|-----------------|-----------------------------|
| value | null | StreamedContent | A streamed content instance |
| contextDisposition | attachment | String | Specifies display mode. |

Getting started with FileDownload

A user command action is required to trigger the filedownload process. FileDownload can be attached to any command component like a commandButton or commandLink. The value of the FileDownload must be an *org.primefaces.model.StreamedContent* instance. We suggest using the built-in *DefaultStreamedContent* implementation. First parameter of the constructor is the binary stream, second is the mimeType and the third parameter is the name of the file.

```
public class FileBean {
    private StreamedContent file;

    public FileDownloadController() {
        InputStream stream = this.getClass().getResourceAsStream("yourfile.pdf");
        file = new DefaultStreamedContent(stream, "application/pdf",
            "downloaded_file.pdf");
    }

    public StreamedContent getFile() {
        return this.file;
    }
}
```

This streamed content should be bound to the value of the fileDownload.

```
<h:commandButton value="Download">
    <p:fileDownload value="#{fileBean.file}" />
</h:commandButton>
```

Similarly a more graphical presentation would be to use a commandlink with an image.

```
<h:commandLink value="Download">
  <p:fileDownload value="#{fileBean.file}"/>
  <h:graphicImage value="pdficon.gif" />
</h:commandLink>
```

If you'd like to use PrimeFaces `commandButton` and `commandLink`, disable ajax option as `fileDownload` requires a full page refresh to present the file.

```
<p:commandButton value="Download" ajax="false">
  <p:fileDownload value="#{fileBean.file}" />
</p:commandButton>
```

```
<p:commandLink value="Download" ajax="false">
  <p:fileDownload value="#{fileBean.file}"/>
  <h:graphicImage value="pdficon.gif" />
</p:commandLink>
```

ContentDisposition

By default, content is displayed as an *attachment* with a download dialog box, another alternative is the *inline* mode, in this case browser will try to open the file internally without a prompt. Note that content disposition is not part of the http standard although it is widely implemented.

Monitor Status

As `fileDownload` process is non-ajax, `ajaxStatus` cannot apply. Still PrimeFaces provides a feature to monitor file downloads via client side `monitorDownload(startFunction, endFunction)` method. Example below displays a modal dialog when download begins and hides it on complete.

```
<script type="text/javascript">
  function showStatus() {
    PF('statusDialog').show();
  }

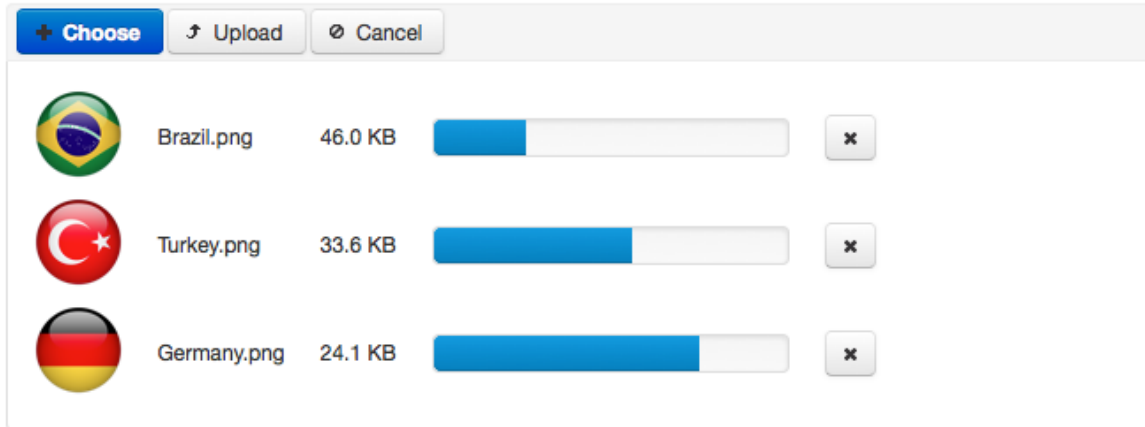
  function hideStatus() {
    PF('statusDialog').hide();
  }
</script>
```

```
<h:form>
  <p:dialog modal="true" widgetVar="statusDialog" header="Status" draggable="false"
    closable="false">
    <p:graphicImage value="/design/ajaxloadingbar.gif" />
  </p:dialog>
  <p:commandButton value="Download" ajax="false"
    onclick="PrimeFaces.monitorDownload(showStatus, hideStatus)">
    <p:fileDownload value="#{fileDownloadController.file}"/>
  </p:commandButton>
</h:form>
```

Cookies must be enabled for monitoring.

3.46 FileUpload

FileUpload goes beyond the browser input type="file" functionality and features an HTML5 powered rich solution with graceful degradation for legacy browsers.



Info

| | |
|------------------|---------------------------------------------------------------|
| Tag | fileUpload |
| Component Class | org.primefaces.component.fileupload.FileUpload |
| Component Type | org.primefaces.component.FileUpload |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.FileUploadRenderer |
| Renderer Class | org.primefaces.component.fileupload.FileUploadRenderer |

Attributes

| Name | Default | | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |

| Name | Default | | Description |
|---------------------|----------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value | null | Object | Value of the component than can be either an EL expression of a literal text. |
| converter | null | Converter /String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id. |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required. |
| validator | null | MethodExpr | A method expression that refers to a method validating the input. |
| valueChangeListener | null | MethodExpr | A method expression that refers to a method for handling a valuchangeevent. |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fails. |
| widgetVar | null | String | Name of the client side widget. |
| update | null | String | Component(s) to update after fileupload completes. |
| process | null | String | Component(s) to process in fileupload request. |
| fileUploadListener | null | MethodExpr | Method to invoke when a file is uploaded. |
| multiple | false | Boolean | Allows choosing of multi file uploads from native file browse dialog |
| auto | false | Boolean | When set to true, selecting a file starts the upload process implicitly. |
| label | Choose | String | Label of the browse button. |
| allowTypes | null | String | Regular expression for accepted file types, e.g. /(\\. \\)(gif jpe?g png)\$/ |
| sizeLimit | null | Integer | Individual file size limit in bytes. |
| fileLimit | null | Integer | Maximum number of files allowed to upload. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| mode | advanced | String | Mode of the fileupload, can be <i>simple</i> or <i>advanced</i> . |
| uploadLabel | Upload | String | Label of the upload button. |
| cancelLabel | Cancel | String | Label of the cancel button. |

| Name | Default | | Description |
|--------------------|------------------|---------|----------------------------------------------------------------------------------------------------------------|
| invalidSizeMessage | null | String | Message to display when size limit exceeds. |
| invalidFileMessage | null | String | Message to display when file is not accepted. |
| fileLimitMessage | null | String | Message to display when file limit exceeds. |
| dragDropSupport | true | Boolean | Specifies dragdrop based file selection from filesystem, default is true and works only on supported browsers. |
| onstart | null | String | Client side callback to execute when upload begins. |
| onerror | null | String | Callback to execute if fileupload request fails. |
| oncomplete | null | String | Client side callback to execute when upload ends. |
| disabled | false | Boolean | Disables component when set true. |
| messageTemplate | {name} {size} | String | Message template to use when displaying file validation errors. |
| previewWidth | 80 | Integer | Width for image previews in pixels. |
| skinSimple | false | Boolean | Applies theming to simple uploader. |
| accept | null | String | Filters files in native file browser dialog. |
| sequential | false | Boolean | Uploads are concurrent by default, set this option to true for sequential uploads. |

Getting started with FileUpload

FileUpload engine on the server side can either be servlet 3.0 or commons fileupload. PrimeFaces selects the most appropriate uploader engine by detection and it is possible to force one or the other using an **optional** configuration param.

```
<context-param>
  <param-name>primefaces.UPLOADER</param-name>
  <param-value>auto|native|commons</param-value>
</context-param>
```

auto: This is the default mode and PrimeFaces tries to detect the best method by checking the runtime environment, if JSF runtime is at least 2.2 native uploader is selected, otherwise commons.

native: Native mode uses servlet 3.x Part API to upload the files and if JSF runtime is less than 2.2 and exception is being thrown.

commons: This option chooses commons fileupload regardless of the environment, advantage of this option is that it works even on a Servlet 2.5 environment.

If you have decided to choose commons fileupload, it requires the following filter configuration in your web deployment descriptor.

```

<filter>
  <filter-name>PrimeFaces FileUpload Filter</filter-name>
  <filter-class>
    org.primefaces.webapp.filter.FileUploadFilter
  </filter-class>
</filter>
<filter-mapping>
  <filter-name>PrimeFaces FileUpload Filter</filter-name>
  <servlet-name>Faces Servlet</servlet-name>
</filter-mapping>

```

Note that the servlet-name should match the configured name of the JSF servlet which is Faces Servlet in this case. Alternatively you can do a configuration based on url-pattern as well.

Simple File Upload

Simple file upload mode works in legacy mode with a file input whose value should be an UploadedFile instance. Ajax uploads are not supported in simple upload.

```

<h:form enctype="multipart/form-data">
  <p:fileUpload value="#{fileBean.file}" mode="simple" />
  <p:commandButton value="Submit" ajax="false"/>
</h:form>

```

```

import org.primefaces.model.UploadedFile;

public class FileBean {

    private UploadedFile file;

    //getter-setter

}

```

Enable skinSimple option to style the simple uploader to have a themed look that works the same across different environments.

Advanced File Upload

FileUploadListener is the way to access the uploaded files in this mode, when a file is uploaded defined fileUploadListener is processed with a FileUploadEvent as the parameter.

```

<p:fileUpload fileUploadListener="#{fileBean.handleFileUpload}" />

```

```

public class FileBean {

    public void handleFileUpload(FileUploadEvent event) {
        UploadedFile file = event.getFile();
        //application code
    }

}

```


Multiple Uploads

Multiple uploads can be enabled using the `multiple` attribute so that multiple files can be selected from browser dialog. Multiple uploads are not supported in legacy browsers. Note that multiple mode is for selection only, it does not send all files in one request. FileUpload component always uses a new request for each file.

```
<p:fileUpload fileUploadListener="#{fileBean.handleFileUpload}" multiple="true" />
```

Auto Upload

Default behavior requires users to trigger the upload process, you can change this way by setting `auto` to true. Auto uploads are triggered as soon as files are selected from the dialog.

```
<p:fileUpload fileUploadListener="#{fileBean.handleFileUpload}" auto="true" />
```

Partial Page Update

After the fileUpload process completes you can use the PrimeFaces PPR to update any component on the page. FileUpload is equipped with the `update` attribute for this purpose. Following example displays a "File Uploaded" message using the growl component after file upload.

```
<p:fileUpload fileUploadListener="#{fileBean.handleFileUpload}" update="msg" />
<p:growl id="msg" />
```

```
public class FileBean {
    public void handleFileUpload(FileUploadEvent event) {
        //add facesmessage to display with growl
        //application code
    }
}
```

File Filters

Users can be restricted to only select the file types you've configured, example below demonstrates how to accept images only.

```
<p:fileUpload fileUploadListener="#{fileBean.handleFileUpload}"
allowTypes="/(\\.|\\\/)(gif|jpe?g|png)$/" />
```

Size Limit

Most of the time you might need to restrict the file upload size for a file, this is as simple as setting the `sizeLimit` configuration. Following fileUpload limits the size to 1000 bytes for each file.

```
<p:fileUpload fileUploadListener="#{fileBean.handleFileUpload}" sizeLimit="1000" />
```

File Limit

FileLimit restricts the number of maximum files that can be uploaded.

```
<p:fileUpload fileUploadListener="#{fileBean.handleFileUpload}" fileLimit="3" />
```

Validation Messages

invalidFileMessage, *invalidSizeMessage* and *fileLimitMessage* options are provided to display validation messages to the users. Similar to the FacesMessage message API, these message define the summary part, the detail part is retrieved from the *messageTemplate* option where default value is "{name} {size}".

Skinning

FileUpload resides in a container element which *style* and *styleClass* options apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes

| Class | Applies |
|--------------------------|------------------------|
| .ui-fileupload | Main container element |
| .ui-fileupload-buttonbar | Button bar |
| .ui-fileupload-choose | Browse button |
| .ui-fileupload-upload | Upload button |
| .ui-fileupload-cancel | Cancel button |
| ui-fileupload-content | Content container |

Browser Compatibility

Advanced uploader is implemented with HTML5 and provides far more features compared to single version. For legacy browsers that do not support HTML5 features like canvas or file api, fileupload uses graceful degradation so that iframe is used for transport, detailed file information is not shown and a gif animation is displayed instead of progress bar. It is suggested to offer simple uploader as a fallback.

Filter Configuration

Filter configuration is required if you are using commons uploader only. Two configuration options exist, threshold size and temporary file upload location.

| Parameter Name | Description |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------|
| thresholdSize | Maximum file size in bytes to keep uploaded files in memory. If a file exceeds this limit, it'll be temporarily written to disk. |
| uploadDirectory | Disk repository path to keep temporary files that exceeds the threshold size. By default it is System.getProperty("java.io.tmpdir") |

An example configuration below defined `thresholdSize` to be 50kb and uploads to users temporary folder.

```
<filter>
  <filter-name>PrimeFaces FileUpload Filter</filter-name>
  <filter-class>
    org.primefaces.webapp.filter.FileUploadFilter
  </filter-class>
  <init-param>
    <param-name>thresholdSize</param-name>
    <param-value>51200</param-value>
  </init-param>
  <init-param>
    <param-name>uploadDirectory</param-name>
    <param-value>/Users/primefaces/temp</param-value>
  </init-param>
</filter>
```

Note that `uploadDirectory` is used internally, you always need to implement the logic to save the file contents yourself in your backing bean.

3.47 Focus

Focus is a utility component that makes it easy to manage the element focus on a JSF page.

Info

| | |
|------------------|-----------------------------------------------------|
| Tag | focus |
| Component Class | org.primefaces.component.focus.Focus |
| Component Type | org.primefaces.component.Focus.FocusTag |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.FocusRenderer |
| Renderer Class | org.primefaces.component.focus.FocusRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| for | null | String | Specifies the exact component to set focus |
| context | null | String | The root component to start first input search. |
| minSeverity | error | String | Minimum severity level to be used when finding the first invalid component |

Getting started with Focus

By default focus will find the *first enabled and visible input component* on page and apply focus. Input component can be any element such as input, textarea and select.

```
<p:focus />

<p:inputText ... />
<h:inputText ... />
<h:selectOneMenu ... />
```

Following is a simple example;

```

<h:form>
  <p:panel id="panel" header="Register">

    <p:focus />

    <p:messages />

    <h:panelGrid columns="3">
      <h:outputLabel for="firstname" value="Firstname: *" />
      <h:inputText id="firstname" value="#{pprBean.firstname}"
required="true" label="Firstname" />
      <p:message for="firstname" />

      <h:outputLabel for="surname" value="Surname: *" />
      <h:inputText id="surname" value="#{pprBean.surname}"
required="true" label="Surname"/>
      <p:message for="surname" />
    </h:panelGrid>

    <p:commandButton value="Submit" update="panel"
actionListener="#{pprBean.savePerson}" />
  </p:panel>
</h:form>

```

When this page initially opens up, input text with id "firstname" will receive focus as it is the first input component.

Validation Aware

Another useful feature of focus is that when validations fail, *first invalid component* will receive a focus. So in previous example if firstname field is valid but surname field has no input, a validation error will be raised for surname, in this case focus will be set on surname field implicitly. Note that for this feature to work on ajax requests, you need to update p:focus component as well.

Explicit Focus

Additionally, using for attribute focus can be set explicitly on an input component which is useful when using a dialog.

```

<p:focus for="text"/>

<h:inputText id="text" value="{bean.value}" />

```

3.48 Fragment

Fragment component is used to define automatically partially process and update sections whenever ajax request is triggered by a descendant component.

Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | fragment |
| Component Class | org.primefaces.component.fragment.Fragment |
| Component Type | org.primefaces.component.Fragment |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.FragmentRenderer |
| Renderer Class | org.primefaces.component.fragment.FragmentRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| autoUpdate | false | Boolean | Updates the fragment automatically. |

Getting started with Fragment

In the following case, required input field outside the fragment is ignored and only the contents of the fragment are processed-updated automatically on button click since button is inside the fragment. Fragment makes it easy to define partial ajax process and update without explicitly defining component identifiers.

Required: *

Name:

```
<h:form>

  <h:panelGrid columns="2">
    <p:outputLabel for="ign" value="Required:" />
    <p:inputText id="ign" required="true" />
  </h:panelGrid>

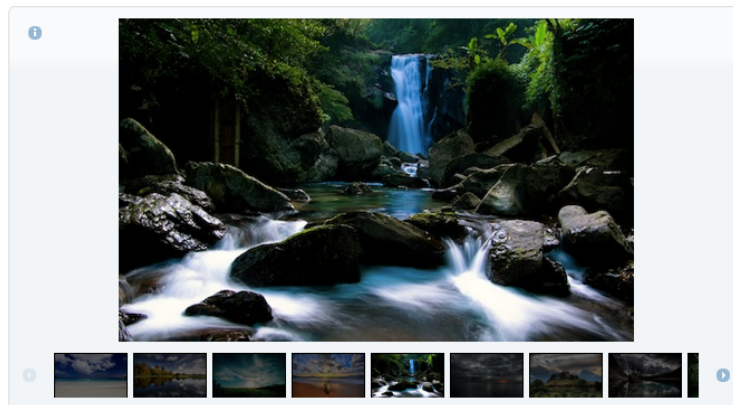
  <p:fragment autoUpdate="true">
    <h:panelGrid columns="4" cellpadding="5">
      <h:outputLabel for="name" value="Name:" />
      <p:inputText id="name" value="#{pprBean.firstname}" />
      <p:commandButton value="Submit"/>
      <h:outputText value="#{pprBean.firstname}" />
    </h:panelGrid>
  </p:fragment>

</h:form>
```

AutoUpdate has different notion compared to autoUpdate of message, growl and outputPanel. The fragment is updated automatically after an ajax request if the source is a descendant. In other mentioned components, there is no such restriction as they are updated for every ajax request regardless of the source.

3.49 Galleria

Galleria is used to display a set of images.



Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | galleria |
| Component Class | org.primefaces.component.galleria.Galleria |
| Component Type | org.primefaces.component.Galleria |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.GalleriaRenderer |
| Renderer Class | org.primefaces.component.galleria.GalleriaRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|------------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| value | null | Collection | Collection of data to display. |
| var | null | String | Name of variable to access an item in collection. |
| style | null | String | Inline style of the container element. |
| styleClass | null | String | Style class of the container element. |
| effect | fade | String | Name of animation to use. |

| Name | Default | Type | Description |
|--------------------|---------|---------|--------------------------------------------------|
| effectSpeed | 700 | Integer | Duration of animation in milliseconds. |
| panelWidth | 600 | Integer | Width of the viewport. |
| panelHeight | 400 | Integer | Height of the viewport. |
| frameWidth | 60 | Integer | Width of the frames. |
| frameHeight | 40 | Integer | Height of the frames. |
| showFilmstrip | true | Boolean | Defines visibility of filmstrip. |
| showCaption | false | Boolean | Defines visibility of captions. |
| transitionInterval | 4000 | Integer | Defines interval of slideshow. |
| autoPlay | true | Boolean | Images are displayed in a slideshow in autoPlay. |

Getting Started with Galleria

Images to displayed are defined as children of galleria;

```
<p:galleria effect="slide" effectDuration="1000">
  <p:graphicImage value="/images/image1.jpg" title="image1" alt="image1 desc" />
  <p:graphicImage value="/images/image2.jpg" title="image1" alt=" image2 desc" />
  <p:graphicImage value="/images/image3.jpg" title="image1" alt=" image3 desc" />
  <p:graphicImage value="/images/image4.jpg" title="image1" alt=" image4 desc" />
</p:galleria>
```

Galleria displays the details of an image using an overlay which is displayed by clicking the information icon. Title of this popup is retrieved from the image *title* attribute and description from *alt* attribute so it is suggested to provide these attributes as well.

Dynamic Collection

Most of the time, you would need to display a dynamic set of images rather than defining each image declaratively. For this you can use built-in data iteration feature.

```
<p:galleria value="#{galleriaBean.images}" var="image" >
  <p:graphicImage value="#{image.path}"
    title="#{image.title}" alt="#{image.description}" />
</p:galleria>
```

Effects

There are various effect options to be used in transitions; blind, bounce, clip, drop, explode, fade, fold, highlight, puff, pulsate, scale, shake, size, slide and transfer.

By default animation takes 500 milliseconds, use *effectSpeed* option to tune this.

```
<p:galleria effect="slide" effectSpeed="1000">
  //images
</p:galleria>
```

Skinning

Galleria resides in a main container element which *style* and *styleClass* options apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes

| Style Class | Applies |
|----------------------------------------------|---------------------------------|
| .ui-galleria | Container element for galleria. |
| .ui-galleria-panel-wrapper | Container of panels. |
| .ui-galleria-panel | Container of each image. |
| .ui-galleria-caption | Caption element. |
| .ui-galleria-nav-prev, .ui-galleria-nav-next | Navigators of filmstrip. |
| .ui-galleria-filmstrip-wrapper | Container of filmstrip. |
| .ui-galleria-filmstrip | Filmstrip element. |
| .ui-galleria-frame | Frame element in a filmstrip. |
| .ui-galleria-frame-content | Content of a frame. |
| .ui-galleria-frame-image | Thumbnail image. |

3.50 GMap

GMap is a map component integrated with Google Maps API V3.



Info

| | |
|------------------|---------------------------------------------------|
| Tag | gmap |
| Component Class | org.primefaces.component.gmap.GMap |
| Component Type | org.primefaces.component.Gmap |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.GmapRenderer |
| Renderer Class | org.primefaces.component.gmap.GmapRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|----------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| widgetVar | null | String | Name of the client side widget. |
| model | null | MapModel | An org.primefaces.model.MapModel instance. |

| Name | Default | Type | Description |
|-------------------------|---------|---------|--------------------------------------------------------------------------------------------------|
| style | null | String | Inline style of the map container. |
| styleClass | null | String | Style class of the map container. |
| type | null | String | Type of the map. |
| center | null | String | Center point of the map. |
| zoom | 8 | Integer | Defines the initial zoom level. |
| streetView | false | Boolean | Controls street view support. |
| disableDefaultUI | false | Boolean | Disables default UI controls |
| navigationControl | true | Boolean | Defines visibility of navigation control. |
| mapTypeControl | true | Boolean | Defines visibility of map type control. |
| draggable | true | Boolean | Defines draggability of map. |
| disabledDoubleClickZoom | false | Boolean | Disables zooming on mouse double click. |
| onPointClick | null | String | Javascript callback to execute when a point on map is clicked. |
| fitBounds | true | Boolean | Defines if center and zoom should be calculated automatically to contain all markers on the map. |
| scrollWheel | false | Boolean | Controls scrollwheel zooming on the map. |

Getting started with GMap

First thing to do is placing V3 of the Google Maps API that the GMap is based on. Ideal location is the head section of your page.

```
<script src="http://maps.google.com/maps/api/js?sensor=true|false"
  type="text/javascript"></script>
```

As Google Maps api states, mandatory sensor parameter is used to specify if your application requires a sensor like GPS locator. Four options are required to place a gmap on a page, these are center, zoom, type and style.

```
<p:gmap center="41.381542, 2.122893" zoom="15" type="hybrid"
  style="width:600px;height:400px" />
```

center: Center of the map in lat, lng format

zoom: Zoom level of the map

type: Type of map, valid values are, "hybrid", "satellite", "hybrid" and "terrain".

style: Dimensions of the map.

MapModel

GMap is backed by an *org.primefaces.model.map.MapModel* instance, PrimeFaces provides *org.primefaces.model.map.DefaultMapModel* as the default implementation. API Docs of all GMap related model classes are available at the end of GMap section and also at javadocs of PrimeFaces.

Markers

A marker is represented by *org.primefaces.model.map.Marker*.

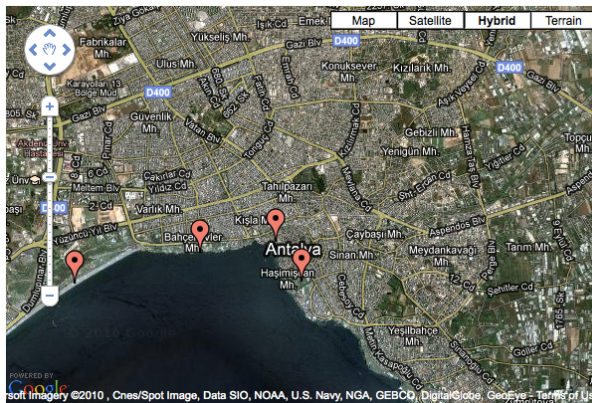
```
<p:gmap center="41.381542, 2.122893" zoom="15" type="hybrid"
        style="width:600px;height:400px" model="#{mapBean.model}"/>
```

```
public class MapBean {

    private MapModel model = new DefaultMapModel();

    public MapBean() {
        model.addOverlay(new Marker(new LatLng(36.879466, 30.667648), "M1"));
        //more overlays
    }

    public MapModel getModel() { return this.model; }
}
```



Polylines

A polyline is represented by *org.primefaces.model.map.Polyline*.

```
<p:gmap center="41.381542, 2.122893" zoom="15" type="hybrid"
        style="width:600px;height:400px" model="#{mapBean.model}"/>
```

```

public class MapBean {

    private MapModel model;

    public MapBean() {
        model = new DefaultMapModel();

        Polyline polyline = new Polyline();
        polyline.getPaths().add(new LatLng(36.879466, 30.667648));
        polyline.getPaths().add(new LatLng(36.883707, 30.689216));
        polyline.getPaths().add(new LatLng(36.879703, 30.706707));
        polyline.getPaths().add(new LatLng(36.885233, 37.702323));

        model.addOverlay(polyline);
    }

    public MapModel getModel() { return this.model; }
}

```

Polygons

A polygon is represented by *org.primefaces.model.map.Polygon*.

```

<p:gmap center="41.381542, 2.122893" zoom="15" type="hybrid"
        style="width:600px;height:400px" model="#{mapBean.model}"/>

```

```

public class MapBean {

    private MapModel model;

    public MapBean() {
        model = new DefaultMapModel();

        Polygon polygon = new Polygon();
        polyline.getPaths().add(new LatLng(36.879466, 30.667648));
        polyline.getPaths().add(new LatLng(36.883707, 30.689216));
        polyline.getPaths().add(new LatLng(36.879703, 30.706707));

        model.addOverlay(polygon);
    }

    public MapModel getModel() { return this.model; }
}

```

Circles

A circle is represented by *org.primefaces.model.map.Circle*.

```

<p:gmap center="41.381542, 2.122893" zoom="15" type="hybrid"
        style="width:600px;height:400px" model="#{mapBean.model}"/>

```

```

public class MapBean {

    private MapModel model;

    public MapBean() {
        model = new DefaultMapModel();
        Circle circle = new Circle(new LatLng(36.879466, 30.667648), 500);
        model.addOverlay(circle);
    }

    public MapModel getModel() { return this.model; }
}

```

Rectangles

A circle is represented by *org.primefaces.model.map.Rectangle*.

```

<p:gmap center="41.381542, 2.122893" zoom="15" type="hybrid"
        style="width:600px;height:400px" model="#{mapBean.model}"/>

```

```

public class MapBean {

    private MapModel model;

    public MapBean() {
        model = new DefaultMapModel();
        LatLng coord1 = new LatLng(36.879466, 30.667648);
        LatLng coord2 = new LatLng(36.883707, 30.689216);

        Rectangle rectangle = new Rectangle(coord1, coord2);

        model.addOverlay(circle);
    }

    public MapModel getModel() { return this.model; }
}

```

GeoCoding

Geocoding support is provided by client side api. Results are then passed to the backing bean using *GeocodeEvent* and *ReverseGeocodeEvent* instances via ajax behavior callbacks.

```

<p:gmap widgetVar="pmap">
    <p:ajax event="geocode" listener="#{bean.onGeocode}" />
</p:map>
<script>
    PF('pmap').geocode('Barcelona');
</script>

```

```

public void onGeocode(GeocodeEvent event) {
    List<GeocodeResult> results = event.getResults();
}

```

Ajax Behavior Events

GMap provides many custom ajax behavior events for you to hook-in to various features.

| Event | Listener Parameter | Fired |
|---------------|---------------------------------------------|----------------------------------|
| overlaySelect | org.primefaces.event.map.OverlaySelectEvent | When an overlay is selected. |
| stateChange | org.primefaces.event.map.StateChangeEvent | When map state changes. |
| pointSelect | org.primefaces.event.map.PointSelectEvent | When an empty point is selected. |
| markerDrag | org.primefaces.event.map.MarkerDragEvent | When a marker is dragged. |

Following example displays a FacesMessage about the selected marker with growl component.

```
<h:form>
  <p:growl id="growl" />

  <p:gmap center="41.381542, 2.122893" zoom="15" type="hybrid"
    style="width:600px;height:400px" model="#{mapBean.model}">
    <p:ajax event="overlaySelect" listener="#{mapBean.onMarkerSelect}"
      update="growl" />
  </p:gmap>
</h:form>
```

```
public class MapBean {

  private MapModel model;

  public MapBean() {
    model = new DefaultMapModel();
    //add markers
  }

  public MapModel getModel() {
    return model
  }

  public void onMarkerSelect(OverlaySelectEvent event) {
    Marker selectedMarker = (Marker) event.getOverlay();
    //add facesmessage
  }
}
```

InfoWindow

A common use case is displaying an info window when a marker is selected. *gmapInfoWindow* is used to implement this special use case. Following example, displays an info window that contains an image of the selected marker data.


```

<h:form>

  <p:gmap center="41.381542, 2.122893" zoom="15" type="hybrid"
    style="width:600px;height:400px" model="#{mapBean.model}">

    <p:ajax event="overlaySelect" listener="#{mapBean.onMarkerSelect}" />

    <p:gmapInfoWindow>
      <p:graphicImage value="/images/#{mapBean.marker.data.image}" />
      <h:outputText value="#{mapBean.marker.data.title}" />
    </p:gmapInfoWindow>
  </p:gmap>

</h:form>

```

```

public class MapBean {

  private MapModel model;

  private Marker marker;

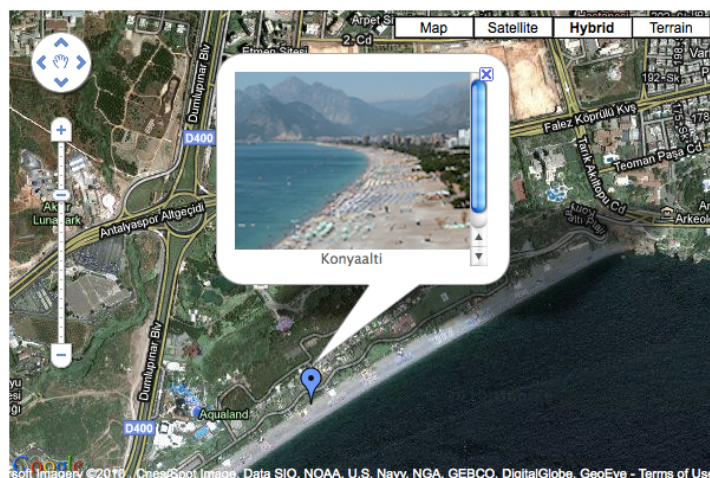
  public MapBean() {
    model = new DefaultMapModel();
    //add markers
  }

  public MapModel getModel() { return model; }

  public Marker getMarker() { return marker; }

  public void onMarkerSelect(OverlaySelectEvent event) {
    this.marker = (Marker) event.getOverlay();
  }
}

```



Street View

StreetView is enabled simply by setting *streetView* option to true.

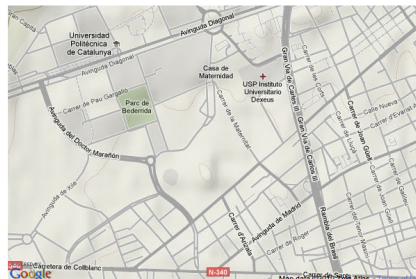
```
<p:gmap center="41.381542, 2.122893" zoom="15" type="hybrid"
style="width:600px;height:400px" streetView="true" />
```



Map Controls

Controls on map can be customized via attributes like *navigationControl* and *mapTypeControl*. Alternatively setting *disableDefaultUI* to true will remove all controls at once.

```
<p:gmap center="41.381542, 2.122893" zoom="15" type="terrain"
style="width:600px;height:400px"
mapTypeControl="false" navigationControl="false" />
```



Native Google Maps API

In case you need to access native google maps api with javascript, use provided *getMap()* method.

```
var gmap = PF('yourWidgetVar').getMap();
//gmap is a google.maps.Map instance
```

Full map api is provided at;

<http://code.google.com/apis/maps/documentation/javascript/reference.html>

GMap API

org.primefaces.model.map.MapModel (*org.primefaces.model.map.DefaultMapModel* is the default implementation)

| Method | Description |
|---------------------------------|------------------------------------|
| addOverlay(Overlay overlay) | Adds an overlay to map |
| List<Marker> getMarkers() | Returns the list of markers |
| List<Polyline> getPolylines() | Returns the list of polylines |
| List<Polygon> getPolygons() | Returns the list of polygons |
| List<Circle> getCircles() | Returns the list of circles |
| List<Rectangle> getRectangles() | Returns the list of rectangles. |
| Overlay findOverlay(String id) | Finds an overlay by it's unique id |

org.primefaces.model.map.Overlay

| Property | Default | Type | Description |
|----------|---------|---------|--------------------------------------------------|
| id | null | String | Id of the overlay, generated and used internally |
| data | null | Object | Data represented in marker |
| zindex | null | Integer | Z-Index of the overlay |

org.primefaces.model.map.Marker extends *org.primefaces.model.map.Overlay*

| Property | Default | Type | Description |
|-----------|---------|---------|-------------------------------------------|
| title | null | String | Text to display on rollover |
| latlng | null | LatLng | Location of the marker |
| icon | null | String | Icon of the foreground |
| shadow | null | String | Shadow image of the marker |
| cursor | pointer | String | Cursor to display on rollover |
| draggable | 0 | Boolean | Defines if marker can be dragged |
| clickable | 1 | Boolean | Defines if marker can be dragged |
| flat | 0 | Boolean | If enabled, shadow image is not displayed |
| visible | 1 | Boolean | Defines visibility of the marker |

org.primefaces.model.map.Polyline extends *org.primefaces.model.map.Overlay*

| Property | Default | Type | Description |
|---------------|---------|---------|---------------------|
| paths | null | List | List of coordinates |
| strokeColor | null | String | Color of a line |
| strokeOpacity | 1 | Double | Opacity of a line |
| strokeWeight | 1 | Integer | Width of a line |

org.primefaces.model.map.Polygon extends *org.primefaces.model.map.Overlay*

| Property | Default | Type | Description |
|---------------|---------|---------|---------------------------------|
| paths | null | List | List of coordinates |
| strokeColor | null | String | Color of a line |
| strokeOpacity | 1 | Double | Opacity of a line |
| strokeWeight | 1 | Integer | Weight of a line |
| fillColor | null | String | Background color of the polygon |
| fillOpacity | 1 | Double | Opacity of the polygon |

org.primefaces.model.map.Circle extends *org.primefaces.model.map.Overlay*

| Property | Default | Type | Description |
|---------------|---------|---------|---------------------------------|
| center | null | LatLng | Center of the circle |
| radius | null | Double | Radius of the circle. |
| strokeColor | null | String | Stroke color of the circle. |
| strokeOpacity | 1 | Double | Stroke opacity of circle. |
| strokeWeight | 1 | Integer | Stroke weight of the circle. |
| fillColor | null | String | Background color of the circle. |
| fillOpacity | 1 | Double | Opacity of the circle. |

org.primefaces.model.map.Rectangle extends *org.primefaces.model.map.Overlay*

| Property | Default | Type | Description |
|---------------|---------|--------------|--------------------------------|
| bounds | null | LatLngBounds | Boundaries of the rectangle. |
| strokeColor | null | String | Stroke color of the rectangle. |
| strokeOpacity | 1 | Double | Stroke opacity of rectangle. |

| Property | Default | Type | Description |
|--------------|---------|---------|------------------------------------|
| strokeWeight | 1 | Integer | Stroke weight of the rectangle. |
| fillColor | null | String | Background color of the rectangle. |
| fillOpacity | 1 | Double | Opacity of the rectangle. |

org.primefaces.model.map.LatLng

| Property | Default | Type | Description |
|----------|---------|--------|-----------------------------|
| lat | null | double | Latitude of the coordinate |
| lng | null | double | Longitude of the coordinate |

org.primefaces.model.map.LatLngBounds

| Property | Default | Type | Description |
|-----------|---------|--------|--------------------------------------|
| center | null | LatLng | Center coordinate of the boundary |
| northEast | null | LatLng | NorthEast coordinate of the boundary |
| southWest | null | LatLng | SouthWest coordinate of the boundary |

org.primefaces.model.map.GeocodeResult

| Property | Default | Type | Description |
|----------|---------|--------|---------------------------------------|
| address | null | String | String representation of the address. |
| latLng | null | LatLng | Coordinates of the address. |

GMap Event API

All classes in event api extends from *javax.faces.event.FacesEvent*.

org.primefaces.event.map.MarkerDragEvent

| Property | Default | Type | Description |
|----------|---------|--------|-------------------------|
| marker | null | Marker | Dragged marker instance |

org.primefaces.event.map.OverlaySelectEvent

| Property | Default | Type | Description |
|----------|---------|---------|---------------------------|
| overlay | null | Overlay | Selected overlay instance |

org.primefaces.event.map.PointSelectEvent

| Property | Default | Type | Description |
|----------|---------|--------|-----------------------------------|
| latLng | null | LatLng | Coordinates of the selected point |

org.primefaces.event.map.StateChangeEvent

| Property | Default | Type | Description |
|-----------|---------|--------------|-----------------------|
| bounds | null | LatLngBounds | Boundaries of the map |
| zoomLevel | 0 | Integer | Zoom level of the map |

org.primefaces.event.map.GeocodeEvent

| Property | Default | Type | Description |
|----------|---------|---------------------|-----------------------------------------------|
| query | null | String | Query of the geocode search. |
| results | null | List<GeocodeResult> | List of results represented as GeocodeResult. |

org.primefaces.event.map.ReverseGeocodeEvent

| Property | Default | Type | Description |
|-----------|---------|--------------|-------------------------------------------|
| latlng | null | LatLng | Coordinates of the reverse geocode query. |
| addresses | null | List<String> | List of results represented as strings. |

3.51 GMapInfoWindow

GMapInfoWindow is used with GMap component to open a window on map when an overlay is selected.



Info

| | |
|------------------|--------------------------------------------------------|
| Tag | gmapInfoWindow |
| Tag Class | org.primefaces.component.gmap.GMapInfoWindowTag |
| Component Class | org.primefaces.component.gmap.GMapInfoWindow |
| Component Type | org.primefaces.component.GMapInfoWindow |
| Component Family | org.primefaces.component |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UICoMponent instance in a backing bean |
| maxWidth | null | Integer | Maximum width of the info window |

Getting started with GMapInfoWindow

See GMap section for more information about how gmapInfoWindow is used.

3.52 GraphicImage

GraphicImage extends standard JSF graphic image component with the ability of displaying binary data like an inputstream. Main use cases of GraphicImage is to make displaying images stored in database or on-the-fly images easier. Legacy way to do this is to come up with a Servlet that does the streaming, GraphicImage does all the hard work without the need of a Servlet.

Info

| | |
|------------------|-------------------------------------------------------------------|
| Tag | graphicImage |
| Component Class | org.primefaces.component.graphicimage.GraphicImage |
| Component Type | org.primefaces.component.GraphicImage |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.GraphicImageRenderer |
| Renderer Class | org.primefaces.component.graphicimage.GraphicImageRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Binary data to stream or context relative path. |
| alt | null | String | Alternate text for the image |
| url | null | String | Alias to value attribute |
| width | null | String | Width of the image |
| height | null | String | Height of the image |
| title | null | String | Title of the image |
| dir | null | String | Direction of the text displayed |
| lang | null | String | Language code |
| ismap | false | Boolean | Specifies to use a server-side image map |
| usemap | null | String | Name of the client side map |
| style | null | String | Style of the image |
| styleClass | null | String | Style class of the image |

| Name | Default | Type | Description |
|-------------|---------|---------|-----------------------------------------------------------------------------------------------------|
| onclick | null | String | onclick dom event handler |
| ondblclick | null | String | ondblclick dom event handler |
| onkeydown | null | String | onkeydown dom event handler |
| onkeypress | null | String | onkeypress dom event handler |
| onkeyup | null | String | onkeyup dom event handler |
| onmousedown | null | String | onmousedown dom event handler |
| onmousemove | null | String | onmousemove dom event handler |
| onmouseout | null | String | onmouseout dom event handler |
| onmouseover | null | String | onmouseover dom event handler |
| onmouseup | null | String | onmouseup dom event handler |
| cache | true | String | Enables/Disables browser from caching the image |
| name | null | String | Name of the image. |
| library | null | String | Library name of the image. |
| stream | true | Boolean | Defines if the image is streamed or rendered directly as data uri / base64 with ViewScoped support. |

Getting started with GraphicImage

GraphicImage requires an *org.primefaces.model.StreamedContent* content as it's value for dynamic images. StreamedContent is an interface and PrimeFaces provides a built-in implementation called *DefaultStreamedContent*. Following examples loads an image from the classpath.

```
<p:graphicImage value="#{imageBean.image}" />
```

```
public class ImageBean {
    private StreamedContent image;

    public DynamicImageController() {
        InputStream stream = this.getClass().getResourceAsStream("barcalogo.jpg");
        image = new DefaultStreamedContent(stream, "image/jpeg");
    }

    public StreamedContent getImage() {
        return this.image;
    }
}
```

DefaultStreamedContent gets an inputstream as the first parameter and mime type as the second.

In a real life application, you can create the inputStream after reading the image from the database. For example *java.sql.ResultSet* API has the `getBinaryStream()` method to read blob files stored in database.

Displaying Charts with JFreeChart

See static images section at chart component for a sample usage of `graphicImage` with `jFreeChart`.

Displaying a Barcode

Similar to the chart example, a barcode can be generated as well. This sample uses `barbecue` project for the barcode API.

```
<p:graphicImage value="#{backingBean.barcode}" />
```

```
public class BarcodeBean {
    private StreamedContent barcode;

    public BackingBean() {
        try {
            File barcodeFile = new File("dynamicbarcode");
            BarcodeImageHandler.saveJPEG(
                BarcodeFactory.createCode128("PRIMEFACES"), barcodeFile);
            barcode = new DefaultStreamedContent(
                new FileInputStream(barcodeFile), "image/jpeg");
        } catch (Exception e) {
            e.printStackTrace();
        }
    }

    public BarcodeBean getBarcode() {
        return this.barcode;
    }
}
```



Displaying Regular Images

As `GraphicImage` extends standard `graphicImage` component, it can also display regular non dynamic images just like standard `graphicImage` component using name and optional library.

```
<p:graphicImage name="barcalogo.jpg" library="yourapp" />
```

How It Works

Default dynamic image display works as follows;

- Streamed content is put in http session with an encrypted key
- This key is appended to the image url that points to JSF resource handler.

- Custom PrimeFaces ResourceHandler gets the key from the url, decrypts it to get the instance of StreamedContent from session, evaluates the content and streams it to client. Finally key is removed from http session.

As a result there will be 2 requests to display an image, at first browser will make a request to load the page initially and then another one to the dynamic image url that points to JSF resource handler. Note that you cannot use viewscope beans in this way as they are not available in resource loading request. See Data URI section below for an alternative to support view scope.

You can pass request parameters to the graphicImage via f:param tags, as a result the actual request rendering the image can have access to these values. This is extremely handy to display dynamic images if your image is in a data iteration component like datatable or ui:repeat.

ViewScope Support via Data URI

Setting stream attribute to false uses an alternative approach by converting the value to base64 and displays the image via data uri. In this approach, only one request is required so view scope is supported.

StreamedContent

There are two StreamedContent implementations out of the box; DefaultStreamedContent is not uses an InputStream and not serializable whereas the serializable ByteArrayContent uses a byte array.

3.53 Grid CSS

Grid CSS is a lightweight responsive layout utility optimized for mobile devices, tablets and desktops. Up to 12 columns are supported based on fluid layout.

The image shows a PrimeFaces showcase page for Grid CSS. It features a header with the PrimeFaces logo and navigation icons for Themes, Mobile, Push, Extensions, and MockOSX. Below the header, the title 'Grid CSS' is displayed in orange, followed by a description: 'Grid CSS is a responsive layout utility optimized for mobile devices, tablets and desktops.' The main content area displays a grid of 12 columns, with various combinations of column widths and counts shown in a grid format. The grid is composed of 12 columns, each 1 column wide. The grid is divided into 12 rows, each representing a different layout configuration. The first row shows 12 columns of width 1. The second row shows 6 columns of width 2. The third row shows 4 columns of width 3. The fourth row shows 3 columns of width 4. The fifth row shows 2 columns of width 6. The sixth row shows 1 column of width 12. The seventh row shows 4 columns of width 4 and 8 columns of width 4. The eighth row shows 3 columns of width 4 and 9 columns of width 4. The ninth row shows 2 columns of width 4, 5 columns of width 4, and 5 columns of width 4. The tenth row shows 4 columns of width 3, 2 columns of width 3, 2 columns of width 3, 3 columns of width 3, and 1 column of width 3.

Getting Started with Grid

Grid CSS is based on a 12 column layout. Columns are prefixed with `ui-g-*` and they should be a descendant of a container having `ui-g` class. A simple 3 column layout can be defined as;

```
<div class="ui-g">
  <div class="ui-g-4">Col1</div>
  <div class="ui-g-4">Col2</div>
  <div class="ui-g-4">Col3</div>
</div>
```

Multi Line

When the number of columns exceed 12, columns wrap to a new line.

```
<div class="ui-g">
  <div class="ui-g-6">Col1</div>
  <div class="ui-g-6">Col2</div>
  <div class="ui-g-6">Col3</div>
  <div class="ui-g-6">Col4</div>
</div>
```

Same can also be achieved by having two ui-g containers to semantically define a row.

```
<div class="ui-g">
  <div class="ui-g-6">Col1</div>
  <div class="ui-g-6">Col2</div>
</div>
<div class="ui-g">
  <div class="ui-g-6">Col3</div>
  <div class="ui-g-6">Col4</div>
</div>
```

Nested

Columns can be nested to create more complex layouts.

```
<div class="ui-g">
  <div class="ui-g-8 ui-g-nopad">
    <div class="ui-g-6">6</div>
    <div class="ui-g-6">6</div>
    <div class="ui-g-12">12</div>
  </div>
  <div class="ui-g-4">4</div>
</div>
```

Direct children of ui-g has the same height automatically, in example above if the inside columns is likely to have different height with different content.

```
<div class="ui-g">
  <div class="ui-g-8 ui-g-nopad">
    <div class="ui-g-6">6 <br /><br /> Content </div>
    <div class="ui-g-6">6</div>
    <div class="ui-g-12">12</div>
  </div>
  <div class="ui-g-4">4</div>
</div>
```

Solution is wrapping the internal divs inside a ui-g as well.

```
<div class="ui-g">
  <div class="ui-g-8 ui-g-nopad">
    <div class="ui-g">
      <div class="ui-g-6">6 <br /><br /><br /> Content </div>
      <div class="ui-g-6">6</div>
      <div class="ui-g-12">12</div>
    </div>
  </div>
  <div class="ui-g-4">4</div>
</div>
```

Responsive

Responsive layout is achieved by applying additional classes to the columns whereas ui-g-* define the default behavior. Four screen sizes are supported with different breakpoints.

| Prefix | Devices | Media Query | Example |
|---------|---------------------|------------------------------|-------------------|
| ui-sm-* | Phones | max-width: 40em (640px) | ui-sm-6, ui-sm-4 |
| ui-md-* | Tablets | min-width: 40.063em (641px) | ui-md-2, ui-sm-8 |
| ui-lg-* | Desktops | min-width: 64.063em (1025px) | ui-lg-6, ui-sm-12 |
| ui-xl-* | Big screen monitors | min-width: 90.063em (1441px) | ui-xl-2, ui-sm-10 |

Most of the time, ui-md-* styles are used with default ui-g-* classes, to customize small or large screens apply ui-sm, ui-lg and ui-xl can be utilized.

In example below, large screens display 4 columns, medium screens display 2 columns in 2 rows and default behavior gets only displayed in a mobile phone where each column is rendered in a separate row.

```
<div class="ui-g">
  <div class="ui-g-12 ui-md-6 ui-lg-3">ui-g-12 ui-md-6 ui-lg-3</div>
  <div class="ui-g-12 ui-md-6 ui-lg-3">ui-g-12 ui-md-6 ui-lg-3</div>
  <div class="ui-g-12 ui-md-6 ui-lg-3">ui-g-12 ui-md-6 ui-lg-3</div>
  <div class="ui-g-12 ui-md-6 ui-lg-3">ui-g-12 ui-md-6 ui-lg-3</div>
</div>
```

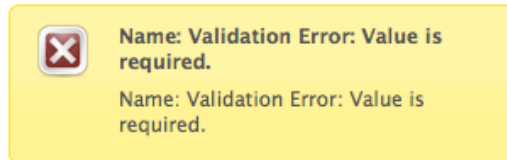
In this second example below, 3 columns are displayed in large screens and in medium screens first two columns are placed side by side where the last column displayed below them. In a mobile phone, they all get displayed in a separate row.

```
<div class="ui-g">
  <div class="ui-g-12 ui-md-6 ui-lg-4">ui-g-12 ui-md-6 ui-lg-4</div>
  <div class="ui-g-12 ui-md-6 ui-lg-4">ui-g-12 ui-md-6 ui-lg-4</div>
  <div class="ui-g-12 ui-lg-4">ui-g-12 ui-lg-4</div>
</div>
```

Note: A column has a default padding by default, to remove it you may apply ui-g-nopad style class.

3.54 Growl

Growl is based on the Mac's growl notification widget and used to display FacesMessages in an overlay.



Info

| | |
|------------------|-----------------------------------------------------|
| Tag | growl |
| Component Class | org.primefaces.component.growl.Growl |
| Component Type | org.primefaces.component.Growl |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.GrowlRenderer |
| Renderer Class | org.primefaces.component.growl.GrowlRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| sticky | false | Boolean | Specifies if the message should stay instead of hidden automatically. |
| showSummary | true | Boolean | Specifies if the summary of message should be displayed. |
| showDetail | false | Boolean | Specifies if the detail of message should be displayed. |
| globalOnly | false | Boolean | When true, only facesmessages without clientids are displayed. |
| life | 6000 | Integer | Duration in milliseconds to display non-sticky messages. |

| Name | Default | Type | Description |
|------------|---------|---------|---------------------------------------------------------------------|
| autoUpdate | false | Boolean | Specifies auto update mode. |
| redisplay | true | Boolean | Defines if already rendered messages should be displayed. |
| for | null | String | Name of associated key, takes precedence when used with globalOnly. |
| escape | true | Boolean | Defines whether html would be escaped or not. |
| severity | null | String | Comma separated list of severities to display only. |

Getting Started with Growl

Growl usage is similar to standard h:messages component. Simply place growl anywhere on your page, since messages are displayed as an overlay, the location of growl in JSF page does not matter.

```
<p:growl />
```

Lifetime of messages

By default each message will be displayed for 6000 ms and then hidden. A message can be made sticky meaning it'll never be hidden automatically.

```
<p:growl sticky="true" />
```

If growl is not working in sticky mode, it's also possible to tune the duration of displaying messages. Following growl will display the messages for 5 seconds and then fade-out.

```
<p:growl life="5000" />
```

Growl with Ajax Updates

If you need to display messages with growl after an ajax request you just need to update it. Note that if you enable autoUpdate, growl will be updated automatically with each ajax request anyway.

```
<p:growl id="messages"/>
<p:commandButton value="Submit" update="messages" />
```

Positioning

Growl is positioned at top right corner by default, position can be controlled with a CSS selector called *ui-growl*. With the below setting growl will be located at top left corner.

```
.ui-growl {
    left:20px;
}
```


Targetable Messages

There may be times where you need to target one or more messages to a specific message component, for example suppose you have growl and messages on same page and you need to display some messages on growl and some on messages. Use for attribute to associate messages with specific components.

```
<p:messages for="somekey" />
<p:growl for="anotherkey" />
```

```
FacesContext context = FacesContext.getCurrentInstance();

context.addMessage("somekey", facesMessage1);
context.addMessage("somekey", facesMessage2);

context.addMessage("anotherkey", facesMessage3);
```

In sample above, messages will display first and second message and growl will only display the 3rd message.

Severity Levels

Using severity attribute, you can define which severities can be displayed by the component. For instance, you can configure growl to only display infos and warnings.

```
<p:growl severity="info,warn" />
```

Escaping

Growl escapes html content in messages, in case you need to display html via growl set escape option to false.

```
<p:growl escape="false" />
```

Skinning

Following is the list of structural style classes;

| Style Class | Applies |
|--------------------------|---------------------------------|
| .ui-growl | Main container element of growl |
| .ui-growl-item-container | Container of messages |
| .ui-growl-item | Container of a message |
| .ui-growl-message | Text message container |
| .ui-growl-title | Summary of the message |
| .ui-growl-message p | Detail of the message |
| .ui-growl-image | Severity icon |

| Style Class | Applies |
|-----------------------|-----------------------|
| .ui-growl-image-info | Info severity icon |
| .ui-growl-image-warn | Warning severity icon |
| .ui-growl-image-error | Error severity icon |
| .ui-growl-image-fatal | Fatal severity icon |

As skinning style classes are global, see the main theming section for more information.

3.55 HotKey

HotKey is a generic key binding component that can bind any formation of keys to javascript event handlers or ajax calls.

Info

| | |
|------------------|-------------------------------------------------------|
| Tag | hotkey |
| Component Class | org.primefaces.component.hotkey.HotKey |
| Component Type | org.primefaces.component.HotKey |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.HotKeyRenderer |
| Renderer Class | org.primefaces.component.hotkey.HotKeyRenderer |

Attributes

| Name | Default | Type | Description |
|----------------|---------|------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| bind | null | String | The Key binding. |
| handler | null | String | Javascript event handler to be executed when the key binding is pressed. |
| action | null | MethodExpr | A method expression that'd be processed in the partial request caused by uiajax. |
| actionListener | null | MethodExpr | An actionlistener that'd be processed in the partial request caused by uiajax. |
| immediate | false | Boolean | Boolean value that determines the phaseId, when true actions are processed at apply_request_values, when false at invoke_application phase. |
| async | false | Boolean | When set to true, ajax requests are not queued. |
| process | null | String | Component id(s) to process partially instead of whole view. |
| update | null | String | Client side id of the component(s) to be updated after async partial submit request. |
| onstart | null | String | Javascript handler to execute before ajax request is |

| Name | Default | Type | Description |
|---------------------|---------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | begins. |
| oncomplete | null | String | Javascript handler to execute when ajax request is completed. |
| onsuccess | null | String | Javascript handler to execute when ajax request succeeds. |
| onerror | null | String | Javascript handler to execute when ajax request fails. |
| global | true | Boolean | Global ajax requests are listened by ajaxStatus component, setting global to false will not trigger ajaxStatus. |
| delay | null | String | If less than <i>delay</i> milliseconds elapses between calls to <i>request()</i> only the most recent one is sent and all other requests are discarded. If this option is not specified, or if the value of <i>delay</i> is the literal string 'none' without the quotes, no delay is used. |
| partialSubmit | false | Boolean | Enables serialization of values belonging to the partially processed components only. |
| partialSubmitFilter | null | String | Selector to use when partial submit is on, default is ":input" to select all descendant inputs of a partially processed components. |
| resetValues | false | Boolean | If true, local values of input components to be updated within the ajax request would be reset. |
| ignoreAutoUpdate | false | Boolean | If true, components which autoUpdate="true" will not be updated for this request. If not specified, or the value is false, no such indication is made. |
| timeout | 0 | Integer | Timeout for the ajax request in milliseconds. |
| form | null | String | Form to serialize for an ajax request. Default is the enclosing form. |

Getting Started with HotKey

HotKey is used in two ways, either on client side with the event handler or with ajax support. Simplest example would be;

```
<p:hotkey bind="a" handler="alert('Pressed a');" />
```

When this hotkey is on page, pressing the a key will alert the 'Pressed key a' text.

Key combinations

Most of the time you'd need key combinations rather than a single key.

```
<p:hotkey bind="ctrl+s" handler="alert('Pressed ctrl+s');" />
<p:hotkey bind="ctrl+shift+s" handler="alert('Pressed ctrl+shift+s');" />
```

Integration

Here's an example demonstrating how to integrate hotkeys with a client side api. Using left and right keys will switch the images displayed via the p:imageSwitch component.

```
<p:hotkey bind="left" handler="PF('switcher').previous();" />
<p:hotkey bind="right" handler="PF('switcher').next();" />

<p:imageSwitch widgetVar="switcher">
  //content
</p:imageSwitch>
```

Ajax Support

Ajax is a built-in feature of hotKeys meaning you can do ajax calls with key combinations. Following form can be submitted with the *ctrl+shift+s* combination.

```
<h:form>

  <p:hotkey bind="ctrl+shift+s" update="display" />

  <h:panelGrid columns="2">
    <h:outputLabel for="name" value="Name:" />
    <h:inputText id="name" value="#{bean.name}" />
  </h:panelGrid>

  <h:outputText id="display" value="Hello: #{bean.firstname}" />

</h:form>
```

Note that hotkey will not be triggered if there is a focused input on page.

3.56 IdleMonitor

IdleMonitor watches user actions on a page and notify callbacks in case they go idle or active again.

Info

| | |
|------------------|---------------------------------------------------------|
| Tag | idleMonitor |
| Component Class | org.primefaces.component.idlemonitor.IdleMonitor |
| Component Type | org.primefaces.component.IdleMonitor |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.IdleMonitorRenderer |
| Renderer Class | org.primefaces.component.idlemonitor.IdleMonitor |

Attributes

| Name | Default | Type | Description |
|-----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UICoMponent instance in a backing bean |
| timeout | 300000 | Integer | Time to wait in milliseconds until deciding if the user is idle. Default is 5 minutes. |
| onidle | null | String | Client side callback to execute when user goes idle. |
| onactive | null | String | Client side callback to execute when user goes idle. |
| widgetVar | null | String | Name of the client side widget. |

Getting Started with IdleMonitor

To begin with, you can hook-in to client side events that are called when a user goes idle or becomes active again. Example below toggles visibility of a dialog to respond these events.

```
<p:idleMonitor onidle="PF('idleDialog').show();"
  onactive="PF('idleDialog').hide();"/>

<p:dialog header="What's happening?" widgetVar="idleDialog" modal="true">
  <h:outputText value="Dude, are you there?" />
</p:dialog>
```

Controlling Timeout

By default, `idleMonitor` waits for 5 minutes (300000 ms) until triggering the `onidle` event. You can customize this duration with the `timeout` attribute.

Ajax Behavior Events

`IdleMonitor` provides two ajax behavior events which are *idle* and *active* that are fired according to user status changes. Example below displays messages for each event;

```
<p:idleMonitor timeout="5000" update="messages">
  <p:ajax event="idle" listener="#{bean.idleListener}" update="msg" />
  <p:ajax event="active" listener="#{bean.activeListener}" update="msg" />
</p:idleMonitor>

<p:growl id="msg" />
```

```
public class Bean {

    public void idleListener() {
        //Add facesmessage
    }

    public void idle() {
        //Add facesmessage
    }
}
```

Client Side API

Widget: *PrimeFaces.widget.IdleMonitor*

| Method | Params | Return Type | Description |
|-----------------------|--------|-------------|------------------------------|
| <code>pause()</code> | - | void | Pauses the monitor. |
| <code>resume()</code> | - | void | Resumes monitoring |
| <code>reset()</code> | - | void | Resets the timer of monitor. |

3.57 ImageCompare

ImageCompare provides a user interface to compare two images.



Info

| | |
|------------------|-------------------------------------------------------------------|
| Tag | imageCompare |
| Component Class | org.primefaces.component.imagecompare.ImageCompare |
| Component Type | org.primefaces.component.ImageCompare |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ImageCompareRenderer |
| Renderer Class | org.primefaces.component.imagecompare.ImageCompareRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |

| Name | Default | Type | Description |
|------------|---------|--------|----------------------------------------------|
| leftImage | null | String | Source of the image placed on the left side |
| rightImage | null | String | Source of the image placed on the right side |
| width | null | String | Width of the images |
| height | null | String | Height of the images |
| style | null | String | Inline style of the container element |
| styleClass | null | String | Style class of the container element |

Getting started with ImageCompare

ImageCompare is created with two images with same height and width. It is required to set width and height of the images as well.

```
<p:imageCompare leftImage="xbox.png" rightImage="ps3.png"
width="438" height="246"/>
```

Skinning

Both images are placed inside a div container element, *style* and *styleClass* attributes apply to this element.

3.58 ImageCropper

ImageCropper allows cropping a certain region of an image. A new image is created containing the cropped area and assigned to a `CroppedImage` instantiated on the server side.



Info

| | |
|------------------|-------------------------------------------------------------------|
| Tag | imageCropper |
| Component Class | org.primefaces.component.imagecropper.ImageCropper |
| Component Type | org.primefaces.component.ImageCropper |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ImageCropperRenderer |
| Renderer Class | org.primefaces.component.imagecropper.ImageCropperRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side <code>UICComponent</code> instance in a backing bean |
| value | null | Object | Value of the component than can be either an EL expression of a literal text |
| converter | null | Converter /String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |

| Name | Default | Type | Description |
|---------------------|---------|-------------|------------------------------------------------------------------------------------|
| validator | null | Method Expr | A method binding expression that refers to a method validating the input |
| valueChangeListener | null | Method Expr | A method binding expression that refers to a method for handling a valuchangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| image | null | String | Context relative path to the image. |
| alt | null | String | Alternate text of the image. |
| aspectRatio | null | Double | Aspect ratio of the cropper area. |
| minSize | null | String | Minimum size of the cropper area. |
| maxSize | null | String | Maximum size of the cropper area. |
| backgroundColor | null | String | Background color of the container. |
| backgroundOpacity | 0,6 | Double | Background opacity of the container |
| initialCoords | null | String | Initial coordinates of the cropper area. |
| boxWidth | 0 | Integer | Maximum box width of the cropping area. |
| boxHeight | 0 | Integer | Maximum box height of the cropping area. |

Getting started with the ImageCropper

ImageCropper is an input component and image to be cropped is provided via the *image* attribute. The cropped area of the original image is used to create a new image, this new image can be accessed on the backing bean by setting the value attribute of the image cropper. Assuming the image is at %WEBAPP_ROOT%/campnou.jpg

```
<p:imageCropper value="#{cropper.croppedImage}" image="/campnou.jpg" />
```

```
public class Cropper {
    private CroppedImage croppedImage;

    //getter and setter
}
```

org.primefaces.model.CroppedImage belongs a PrimeFaces API and contains handy information about the crop process. Following table describes CroppedImage properties.

| Property | Type | Description |
|------------------|--------|----------------------------------------------|
| originalFileName | String | Name of the original file that's cropped |
| bytes | byte[] | Contents of the cropped area as a byte array |
| left | int | Left coordinate |
| right | int | Right coordinate |
| width | int | Width of the cropped image |
| height | int | Height of the cropped image |

External Images

ImageCropper has the ability to crop external images as well.

```
<p:imageCropper value="#{cropper.croppedImage}"
  image="http://primefaces.prime.com.tr/en/images/schema.png">
</p:imageCropper>
```

Context Relative Path

For local images, ImageCropper always requires the image path to be context relative. So to accomplish this simply just add slash ("/path/to/image.png") and imagecropper will recognize it at %WEBAPP_ROOT%/path/to/image.png. Action url relative local images are not supported.

Initial Coordinates

By default, user action is necessary to initiate the cropper area on an image, you can specify an initial area to display on page load using *initialCoords* option in *x,y,w,h* format.

```
<p:imageCropper value="#{cropper.croppedImage}" image="/campnou.jpg"
  initialCoords="225,75,300,125"/>
```

Boundaries

minSize and maxSize attributes are control to limit the size of the area to crop.

```
<p:imageCropper value="#{cropper.croppedImage}" image="/campnou.jpg"
  minSize="50,100" maxSize="150,200"/>
```

Saving Images

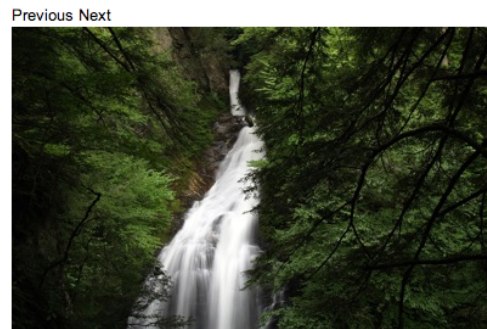
Below is an example to save the cropped image to file system.

```
<p:imageCropper value="#{cropper.croppedImage}" image="/campnou.jpg" />
<p:commandButton value="Crop" actionListener="#{myBean.crop}" />
```

```
public class Cropper {  
  
    private CroppedImage croppedImage;  
  
    //getter and setter  
  
    public String crop() {  
        ServletContext servletContext = (ServletContext)  
FacesContext.getCurrentInstance().getExternalContext().getContext();  
        String newFileName = servletContext.getRealPath("/") + File.separator +  
"ui" + File.separator + "barca" + File.separator+ croppedImage.getOriginalFileName()  
+ "cropped.jpg";  
  
        FileOutputStream imageOutput;  
        try {  
            imageOutput = new FileOutputStream(new File(newFileName));  
            imageOutput.write(croppedImage.getBytes(), 0,  
croppedImage.getBytes().length);  
            imageOutput.close();  
        } catch (Exception e) {  
            e.printStackTrace();  
        }  
        return null;  
    }  
}
```

3.59 ImageSwitch

Imageswitch component is a simple image gallery component.



Info

| | |
|------------------|-----------------------------------------------------------------|
| Tag | imageSwitch |
| Component Class | org.primefaces.component.imageswitch.ImageSwitch |
| Component Type | org.primefaces.component.ImageSwitch |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ImageSwitchRenderer |
| Renderer Class | org.primefaces.component.imageswitch.ImageSwitchRenderer |

Attributes

| Name | Default | Type | Description |
|----------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| effect | null | String | Name of the effect for transition. |
| speed | 500 | Integer | Speed of the effect in milliseconds. |
| slideshowSpeed | 3000 | Integer | Slideshow speed in milliseconds. |
| slideshowAuto | true | Boolean | Starts slideshow automatically on page load. |
| style | null | String | Style of the main container. |
| styleClass | null | String | Style class of the main container. |
| activeIndex | 0 | Integer | Index of the first image. |

Getting Started with ImageSwitch

ImageSwitch component needs a set of images to display. Provide the image collection as a set of children components.

```
<p:imageSwitch effect="FlyIn">
  <p:graphicImage value="/images/nature1.jpg" />
  <p:graphicImage value="/images/nature2.jpg" />
  <p:graphicImage value="/images/nature3.jpg" />
  <p:graphicImage value="/images/nature4.jpg" />
</p:imageSwitch>
```

Most of the time, images could be dynamic, ui:repeat is supported to implement this case.

```
<p:imageSwitch>
  <ui:repeat value="#{bean.images}" var="image">
    <p:graphicImage value="#{image}" />
  </ui:repeat>
</p:imageSwitch>
```

Slideshow or Manual

ImageSwitch is in slideShow mode by default, if you'd like manual transitions disable slideshow and use client side api to create controls.

```
<p:imageSwitch effect="FlyIn" widgetVar="imageswitch">
  //images
</p:imageSwitch>

<span onclick="PF('imageswitch').previous();">Previous</span>
<span onclick="PF('imageswitch').next();">Next</span>
```

Client Side API

Widget: *PrimeFaces.widget.ImageSwitch*

| Method | Params | Return Type | Description |
|-------------------|--------|-------------|----------------------------------|
| resumelideshow() | - | void | Starts slideshow mode. |
| stopSlideshow() | - | void | Stops slideshow mode. |
| toggleSlideshow() | - | void | Toggles slideshow mode. |
| pauseSlideshow() | - | void | Pauses slideshow mode. |
| next() | - | void | Switches to next image. |
| previous() | - | void | Switches to previous image. |
| switchTo(index) | index | void | Displays image with given index. |

Effect Speed

The speed is considered in terms of milliseconds and specified via the speed attribute.

```
<p:imageSwitch effect="FlipOut" speed="150">  
    //set of images  
</p:imageSwitch>
```

List of Effects

ImageSwitch supports a wide range of transition effects. Following is the full list, note that values are case sensitive.

- blindX
- blindY
- blindZ
- cover
- curtainX
- curtainY
- fade
- fadeZoom
- growX
- growY
- none
- scrollUp
- scrollDown
- scrollLeft
- scrollRight
- scrollVert
- shuffle
- slideX
- slideY
- toss
- turnUp
- turnDown
- turnLeft
- turnRight
- uncover
- wipe
- zoom

3.60 ImportConstants

In older EL versions (< 3.0), it's not possible to use constants or any other static fields/methods in an EL expression. As it is not really a good practice to create beans with getter/setter for each constants class. ImportConstant is an utility tag which allows to import constant fields in a page.

The constants can be accessed via the name of the class (default setting) or via a custom name (var attribute).

Info

| | |
|---------|---------------------------------------------------------------------------|
| Tag | importConstants |
| Handler | org.primefaces.component.importconstants.ImportConstantsTagHandler |

Attributes

| Name | Default | Type | Description |
|------|---------|--------|---------------------------------------------|
| type | null | String | Name of the class containing the constants. |
| var | null | String | Variable name to expose to EL. |

Getting Started with ImportConstants

Class whose constants would be imported is defined with type property and the var property specifies the variable name to use via EL.

```
package org.primefaces.util;

public class Constants {

    public static final String DOWNLOAD_COOKIE = "primefaces.download";

    public final static String LIBRARY = "primefaces";

    public final static String PUSH_PATH = "/primepush";

}
```

```
<p:importConstants type="org.primefaces.util.Constants" var="PFConstants" />
<h:outputText value="#{PFConstants.LIBRARY}" />
<h:outputText value="#{PFConstants.DOWNLOAD_COOKIE}" />
```

3.61 ImportEnum

In older EL versions (< 3.0), it's not possible to use enum constants or any other static fields/methods in an EL expression. As it is not really a good practice to create beans with getter/setter for each constants class, we provide an `importEnum` tag which allows to import enum values in a page.

The enum values can be accessed via the name of the class (default setting) or via a custom name (`var` attribute). It also possible to get all enum values of the class with the "ALL_VALUES" suffix or a custom prefix via the "allSuffix" attribute.

Info

| | |
|---------|-----------------------------------------------------------------|
| Tag | importEnums |
| Handler | org.primefaces.component.importenum.ImportEnumTagHandler |

Attributes

| Name | Default | Type | Description |
|-----------|---------|--------|---------------------------------------------|
| type | null | String | Name of the class containing the constants. |
| var | null | String | Variable name to expose to EL. |
| allSuffix | null | String | Suffix name to retrieve all values. |

Getting Started with ImportEnum

Class whose enums would be imported is defined with `type` property and the `var` property specifies the variable name to use via EL.

```
<p:importEnum type="javax.faces.application.ProjectStage" var="JsfpProjectStages"
allSuffix="ALL_ENUM_VALUES" />
```

```
Development: \#{JsfpProjectStages.Development}
```

ALL:

```
<ui:repeat var="current" value="\#{JsfpProjectStages.ALL_ENUM_VALUES}">
  <h:outputText value="\#{current}" />
</ui:repeat>>
```

3.62 Inplace

Inplace provides easy inplace editing and inline content display. Inplace consists of two members, display element is the initial clickable label and inline element is the hidden content that is displayed when display element is toggled.

Basic Input: Edit Me

Basic Input:

Info

| | |
|------------------|---------------------------------------------------------|
| Tag | inplace |
| Component Class | org.primefaces.component.inplace.Inplace |
| Component Type | org.primefaces.component.Inplace |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.InplaceRenderer |
| Renderer Class | org.primefaces.component.inplace.InplaceRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| label | null | String | Label to be shown in display mode. |
| emptyLabel | null | String | Label to be shown in display mode when value is empty. |
| effect | fade | String | Effect to be used when toggling. |
| effectSpeed | normal | String | Speed of the effect. |
| disabled | false | Boolean | Prevents hidden content to be shown. |
| style | null | String | Inline style of the main container element. |
| styleClass | null | String | Style class of the main container element. |
| editor | false | Boolean | Specifies the editor mode. |
| saveLabel | Save | String | Tooltip text of save button in editor mode. |

| Name | Default | Type | Description |
|-------------|---------|---------|----------------------------------------------------------|
| cancelLabel | Cancel | String | Tooltip text of cancel button in editor mode. |
| event | click | String | Name of the client side event to display inline content. |
| toggable | true | Boolean | Defines if inplace is toggable or not. |

Getting Started with Inplace

The inline component needs to be a child of inplace.

```
<p:inplace>
  <h:inputText value="Edit me" />
</p:inplace>
```

Custom Labels

By default inplace displays its first child's value as the label, you can customize it via the label attribute.

```
<h:outputText value="Select One:" />

<p:inplace label="Cities">
  <h:selectOneMenu>
    <f:selectItem itemLabel="Istanbul" itemValue="Istanbul" />
    <f:selectItem itemLabel="Ankara" itemValue="Ankara" />
  </h:selectOneMenu>
</p:inplace>
```

Select One: Cities
 Select One:

Facets

For advanced customization, *output* and *input* facets are provided.

```
<p:inplace id="checkboxInplace">
  <f:facet name="output">
    Yes or No
  </f:facet>
  <f:facet name="input">
    <h:selectBooleanCheckbox />
  </f:facet>
</p:inplace>
```

Effects

Default effect is *fade* and other possible effect is *slide*, also effect speed can be tuned with values *slow*, *normal* and *fast*.

```
<p:inplace label="Show Image" effect="slide" effectSpeed="fast">
  <p:graphicImage value="/images/nature1.jpg" />
</p:inplace>
```

Editor

Inplace editing is enabled via the *editor* option.

```
public class InplaceBean {
    private String text;
    //getter-setter
}
```

```
<p:inplace editor="true">
  <h:inputText value="#{inplaceBean.text}" />
</p:inplace>
```



save and *cancel* are two provided ajax behaviors events you can use to hook-in the editing process.

```
public class InplaceBean {
    private String text;
    public void handleSave() {
        //add faces message with update text value
    }
    //getter-setter
}
```

```
<p:inplace editor="true">
  <p:ajax event="save" listener="#{inplaceBean.handleSave}" update="msgs" />
  <h:inputText value="#{inplaceBean.text}" />
</p:inplace>
<p:growl id="msgs" />
```

Client Side API

Widget: *PrimeFaces.widget.Inplace*

| Method | Params | Return Type | Description |
|----------|--------|-------------|------------------------------------------------------------|
| show() | - | void | Shows content and hides display element. |
| hide() | - | void | Shows display element and hides content. |
| toggle() | - | void | Toggles visibility of between content and display element. |
| save() | - | void | Triggers an ajax request to process inplace input. |
| cancel() | - | void | Triggers an ajax request to revert inplace input. |

Skinning

Inplace resides in a main container element which *style* and *styleClass* options apply. Following is the list of structural style classes;

| Style Class | Applies |
|----------------------|---------------------------------------|
| .ui-inplace | Main container element. |
| .ui-inplace-disabled | Main container element when disabled. |
| .ui-inplace-display | Display element. |
| .ui-inplace-content | Inline content. |
| .ui-inplace-editor | Editor controls container. |
| .ui-inplace-save | Save button. |
| .ui-inplace-cancel | Cancel button. |

As skinning style classes are global, see the main theming section for more information.

3.63 InputMask

InputMask forces an input to fit in a defined mask template.

| | |
|-----------------|----------------------------------------------------|
| Date: | <input type="text" value="11/12/2010"/> |
| Phone: | <input type="text" value="(523) 453-4253"/> |
| Phone with Ext: | <input type="text" value="(234) 532-4524 x35254"/> |
| taxId: | <input type="text" value="52-3434234"/> |
| SSN: | <input type="text" value="234-52-3452"/> |
| Product Key: | <input type="text" value="_ - _ - _"/> |

Info

| | |
|------------------|-------------------------------------------------------------|
| Tag | inputMask |
| Component Class | org.primefaces.component.inputmask.InputMask |
| Component Type | org.primefaces.component.InputMask |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.InputMaskRenderer |
| Renderer Class | org.primefaces.component.inputmask.InputMaskRenderer |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| mask | null | String | Mask template |
| slotChar | null | String | Placeholder in mask template. |
| value | null | Object | Value of the component than can be either an EL expression of a literal text |

| Name | Default | Type | Description |
|---------------------|---------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| converter | null | Converter/String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |
| validator | null | MethodExpr | A method binding expression that refers to a method validating the input |
| valueChangeListener | null | MethodExpr | A method binding expression that refers to a method for handling a valuchangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| accesskey | null | String | Access key that when pressed transfers focus to the input element. |
| alt | null | String | Alternate textual description of the input field. |
| autocomplete | null | String | Controls browser autocomplete behavior. |
| dir | null | String | Direction indication for text that does not inherit directionality. Valid values are LTR and RTL. |
| disabled | false | Boolean | Disables input field |
| label | null | String | A localized user presentable name. |
| lang | null | String | Code describing the language used in the generated markup for this component. |
| maxlength | null | Integer | Maximum number of characters that may be entered in this field. |
| onblur | null | String | Client side callback to execute when input element loses focus. |
| onchange | null | String | Client side callback to execute when input element loses focus and its value has been modified since gaining focus. |
| onclick | null | String | Client side callback to execute when input element is clicked. |
| ondblclick | null | String | Client side callback to execute when input element is double clicked. |

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------|
| onfocus | null | String | Client side callback to execute when input element receives focus. |
| onkeydown | null | String | Client side callback to execute when a key is pressed down over input element. |
| onkeypress | null | String | Client side callback to execute when a key is pressed and released over input element. |
| onkeyup | null | String | Client side callback to execute when a key is released over input element. |
| onmousedown | null | String | Client side callback to execute when a pointer button is pressed down over input element |
| onmousemove | null | String | Client side callback to execute when a pointer button is moved within input element. |
| onmouseout | null | String | Client side callback to execute when a pointer button is moved away from input element. |
| onmouseover | null | String | Client side callback to execute when a pointer button is moved onto input element. |
| onmouseup | null | String | Client side callback to execute when a pointer button is released over input element. |
| onselect | null | String | Client side callback to execute when text within input element is selected by user. |
| placeholder | null | String | Specifies a short hint. |
| readonly | false | Boolean | Flag indicating that this component will prevent changes by the user. |
| size | null | Integer | Number of characters used to determine the width of the input element. |
| style | null | String | Inline style of the input element. |
| styleClass | null | String | Style class of the input element. |
| tabindex | null | Integer | Position of the input element in the tabbing order. |
| title | null | String | Advisory tooltip informaton. |
| autoClear | true | Boolean | Clears the field on blur when incomplete input is entered. |

Getting Started with InputMask

InputMask below enforces input to be in 99/99/9999 date format.

```
<p:inputMask value="#{bean.field}" mask="99/99/9999" />
```

Mask Samples

Here are more samples based on different masks;

```
<h:outputText value="Phone: " />
<p:inputMask value="#{bean.phone}" mask="(999) 999-9999"/>

<h:outputText value="Phone with Ext: " />
<p:inputMask value="#{bean.phoneExt}" mask="(999) 999-9999? x99999"/>

<h:outputText value="SSN: " />
<p:inputMask value="#{bean.ssn}" mask="999-99-9999"/>

<h:outputText value="Product Key: " />
<p:inputMask value="#{bean.productKey}" mask="a*-999-a999"/>
```

Skinning

style and *styleClass* options apply to the displayed input element. As skinning style classes are global, see the main theming section for more information.

3.64 InputNumber

InputNumber formats input fields with numeric Strings. It supports currency symbols, minimum and maximum value, negative numbers, and a lot of round methods.

Info

| | |
|------------------|-----------------------------------------------------------------|
| Tag | inputNumber |
| Component Class | org.primefaces.component.inputnumber.InputNumber |
| Component Type | org.primefaces.component.InputNumber |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.InputNumberRenderer |
| Renderer Class | org.primefaces.component.inputnumber.InputNumberRenderer |

Attributes

| Name | Default | Type | Description |
|---------------------|---------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component than can be either an EL expression of a literal text |
| converter | null | Converter /String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |
| validator | null | Method Expr | A method binding expression that refers to a method validating the input |
| valueChangeListener | null | Method Expr | A method binding expression that refers to a method for handling a valuchangeevent |
| requiredMessage | null | String | Message to be displayed after failed validation. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |

| Name | Default | Type | Description |
|--------------|---------|---------|---------------------------------------------------------------------------------------------------------------------|
| widgetVar | null | String | Name of the client side widget. |
| accesskey | null | String | Access key that when pressed transfers focus to the input element. |
| alt | null | String | Alternate textual description of the input field. |
| autocomplete | null | String | Controls browser autocomplete behavior. |
| dir | null | String | Direction indication for text that does not inherit directionality. Valid values are LTR and RTL. |
| disabled | 0 | Boolean | Disables input field |
| label | null | String | A localized user presentable name. |
| lang | null | String | Code describing the language used in the generated markup for this component. |
| maxlength | null | Integer | Maximum number of characters that may be entered in this field. |
| onblur | null | String | Client side callback to execute when input element loses focus. |
| onchange | null | String | Client side callback to execute when input element loses focus and its value has been modified since gaining focus. |
| onclick | null | String | Client side callback to execute when input element is clicked. |
| ondblclick | null | String | Client side callback to execute when input element is double clicked. |
| onfocus | null | String | Client side callback to execute on input element focus. |
| onkeydown | null | String | Client side callback to execute when a key is pressed down over input element. |
| onkeypress | null | String | Client side callback to execute when a key is pressed and released over input element. |
| onkeyup | null | String | Client side callback to execute when a key is released over input element. |
| onmousedown | null | String | Client side callback to execute when a pointer button is pressed down over input element |
| onmousemove | null | String | Client side callback to execute when a pointer button is moved within input element. |
| onmouseout | null | String | Client side callback to execute when a pointer button is moved away from input element. |
| onmouseover | null | String | Client side callback to execute when a pointer button is moved onto input element. |
| onmouseup | null | String | Client side callback to execute when a pointer button is |

| Name | Default | Type | Description |
|-------------------|----------------------------------------|---------|-------------------------------------------------------------------------------------|
| | | | released over input element. |
| onselect | null | String | Client side callback to execute when text within input element is selected by user. |
| placeholder | null | String | Specifies a short hint. |
| readonly | 0 | Boolean | Flag indicating that this component will prevent changes by the user. |
| size | null | Integer | Number of characters used to determine the width of the input element. |
| style | null | String | Inline style of the input element. |
| styleClass | null | String | Style class of the input element. |
| tabindex | null | Integer | Position of the input element in the tabbing order. |
| title | null | String | Advisory tooltip informaton. |
| type | text | String | Input field type. |
| decimalSeparator | . | String | Decimal separator char. |
| thousandSeparator | , | String | Thousand separator char. |
| symbol | none | String | Desired symbol or unit. |
| symbolPosition | prefix | String | Position of the symbol. |
| minValue | 0.00 | String | Minimum value allowed |
| maxValue | 999999 999.99 | String | Minimum values allowed. |
| roundMethod | Round- Half- Up Symme tric | String | Controls the rounding method. |
| decimalPlaces | | | Number of decimal places. Default are taken from minValue and MaxValue. |
| emptyValue | empty | String | Controls empty input display behavior, options are empty, zero, sign. |
| inputStyle | null | String | Inline style of the input element. |
| inputStyleClass | null | String | Style class of the input element. |

Getting Started with InputNumber

Without any configuration, input number will parse the value and format it as a number using decimal and thousand separator.

```
<p:inputNumber value="#{bean.propertyName}" />
```

Examples

Here are some examples demonstrating various cases;

Suffix currency symbol and comma for decimal separator

```
<p:inputNumber id="input2" value="0.0" symbol=" CHF" symbolPosition="s"
    decimalSeparator="," thousandSeparator="." />
```

Maximum and minimum values (-1000.999 to 1000.000)

```
<p:inputNumber id="input3" value="0.0" minValue="-1000.999" maxValue="1000" />
```

Custom decimal places

```
<p:inputNumber id="input4" value="0.0" decimalPlaces="6" />
```

Empty value (empty) and required

```
<p:inputNumber id="input5" value="251.31" symbol="%"
    symbolPosition="s" required="true" emptyValue="empty" />
```

Empty value (zero)

```
<p:inputNumber id="input6" value="60.0" symbol="%" symbolPosition="s"
    emptyValue="zero" />
```

Empty value (sign)

```
<p:inputNumber id="Input7" value="" symbol="%" symbolPosition="s"
    emptyValue="sign" />
```

15 Decimals using BigDecimal

```
<p:inputNumber id="Input8" value="1234.000000001" decimalPlaces="15" />
```

3.65 InputSwitch

InputSwitch is used to select a boolean value.



Info

| | |
|------------------|-----------------------------------------------------------------|
| Tag | inputSwitch |
| Component Class | org.primefaces.component.inputswitch.InputSwitch |
| Component Type | org.primefaces.component.InputSwitch |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.InputSwitchRenderer |
| Renderer Class | org.primefaces.component.inputswitch.InputSwitchRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component than can be either an EL expression of a literal text |
| converter | null | Converter /String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |
| validator | null | MethodExpr | A method binding expression that refers to a method validating the input |

| Name | Default | Type | Description |
|---------------------|---------|------------|------------------------------------------------------------------------------------------------------------|
| valueChangeListener | null | MethodExpr | A method binding expression that refers to a method for handling a valuchangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| onLabel | on | String | Label for on state. |
| offLabel | off | String | Label for off state. |
| label | null | String | User presentable name. |
| disabled | null | String | Disables or enables the switch. |
| onchange | false | Boolean | Client side callback to execute on value change event. |
| style | null | String | Inline style of the main container. |
| styleClass | null | String | Style class of the main container. |
| tabindex | null | Integer | The tabindex attribute specifies the tab order of an element when the "tab" button is used for navigating. |
| showLabels | null | String | Controls the visibility of the labels, defaults to true. |
| onfocus | null | String | Client side callback to execute when component receives focus. |
| onblur | null | Sring | Client side callback to execute when component loses focus. |

Getting started with InputSwitch

InputSwitch requires a boolean reference as the value.

```
<p:inputSwitch value="#{bean.propertyName}" />
```

```
public class Bean {
    private boolean propertyName;

    //getter and setter
}
```

Labels

Labels are customized using onLabel and offLabel options. Setting showLabels as false, turns off labels altogether.


```
<p:inputSwitch value="#{bean.propertyName}" onLabel="yes" offLabel="no"/>
```

Client Side API

Widget: *PrimeFaces.widget.InputSwitch*

| Method | Params | Return Type | Description |
|-----------|--------|-------------|------------------------|
| toggle() | - | void | Toggles the state. |
| check() | - | void | Switches to on state. |
| uncheck() | - | void | Switches to off state. |

Skinning

InputSwitch resides in a main container element which *style* and *styleClass* options apply. Following is the list of structural style classes;

| Style Class | Applies |
|------------------------|-------------------------|
| .ui-inputswitch | Main container element. |
| .ui-inputswitch-off | Off state element. |
| .ui-inputswitch-on | On state element. |
| .ui-inputswitch-handle | Switch handle. |

As skinning style classes are global, see the main theming section for more information.

3.66 InputText

InputText is an extension to standard inputText with skinning capabilities.


 A screenshot of the PrimeFaces InputText component, which is a text input field with a blue border and a light blue background. The text "PrimeFaces" is entered into the field.

Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | inputText |
| Component Class | org.primefaces.component.inputtext.InputText |
| Component Type | org.primefaces.component.InputText |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.InputTextRenderer |
| Renderer Class | org.primefaces.component.inputtext.InputTextRender |

Attributes

| Name | Default | Type | Description |
|---------------------|---------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component than can be either an EL expression of a literal text |
| converter | null | Converter /String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |
| validator | null | Method Expr | A method binding expression that refers to a method validating the input |
| valueChangeListener | null | Method Expr | A method binding expression that refers to a method for handling a valuchangeevent |
| requiredMessage | null | String | Message to be displayed after failed validation. |

| Name | Default | Type | Description |
|------------------|---------|---------|---------------------------------------------------------------------------------------------------------------------|
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| accesskey | null | String | Access key that when pressed transfers focus to the input element. |
| alt | null | String | Alternate textual description of the input field. |
| autocomplete | null | String | Controls browser autocomplete behavior. |
| dir | null | String | Direction indication for text that does not inherit directionality. Valid values are LTR and RTL. |
| disabled | 0 | Boolean | Disables input field |
| label | null | String | A localized user presentable name. |
| lang | null | String | Code describing the language used in the generated markup for this component. |
| maxlength | null | Integer | Maximum number of characters that may be entered in this field. |
| onblur | null | String | Client side callback to execute when input element loses focus. |
| onchange | null | String | Client side callback to execute when input element loses focus and its value has been modified since gaining focus. |
| onclick | null | String | Client side callback to execute when input element is clicked. |
| ondblclick | null | String | Client side callback to execute when input element is double clicked. |
| onfocus | null | String | Client side callback to execute on input element focus. |
| onkeydown | null | String | Client side callback to execute when a key is pressed down over input element. |
| onkeypress | null | String | Client side callback to execute when a key is pressed and released over input element. |
| onkeyup | null | String | Client side callback to execute when a key is released over input element. |
| onmousedown | null | String | Client side callback to execute when a pointer button is pressed down over input element |
| onmousemove | null | String | Client side callback to execute when a pointer button is moved within input element. |
| onmouseout | null | String | Client side callback to execute when a pointer button is moved away from input element. |

| Name | Default | Type | Description |
|-------------|---------|---------|---------------------------------------------------------------------------------------|
| onmouseover | null | String | Client side callback to execute when a pointer button is moved onto input element. |
| onmouseup | null | String | Client side callback to execute when a pointer button is released over input element. |
| onselect | null | String | Client side callback to execute when text within input element is selected by user. |
| placeholder | null | String | Specifies a short hint. |
| readonly | 0 | Boolean | Flag indicating that this component will prevent changes by the user. |
| size | null | Integer | Number of characters used to determine the width of the input element. |
| style | null | String | Inline style of the input element. |
| styleClass | null | String | Style class of the input element. |
| tabindex | null | Integer | Position of the input element in the tabbing order. |
| title | null | String | Advisory tooltip informaton. |
| type | text | String | Input field type. |

Getting Started with InputText

InputText usage is same as standard inputText;

```
<p:inputText value="#{bean.propertyName}" />
```

```
public class Bean {
    private String propertyName;

    //getter and setter
}
```

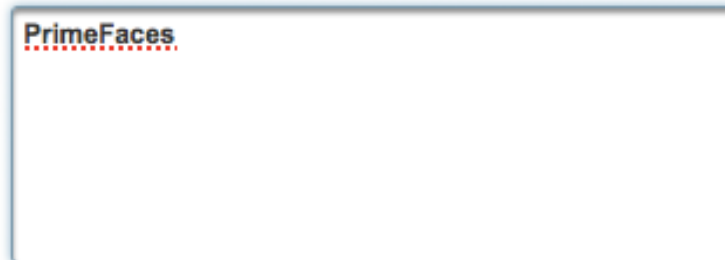
Client Side API

Widget: *PrimeFaces.widget.InputText*

| Method | Params | Return Type | Description |
|-----------|--------|-------------|---------------------------|
| enable() | - | void | Enables the input field. |
| disable() | - | void | Disables the input field. |

3.67 InputTextarea

InputTextarea is an extension to standard inputTextarea with autoComplete, autoResize, remaining characters counter and theming features.



Info

| | |
|------------------|-------------------------------------------------------------------|
| Tag | inputTextarea |
| Component Class | org.primefaces.component.inputtextarea.InputTextarea |
| Component Type | org.primefaces.component.InputTextarea |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.InputTextareaRenderer |
| Renderer Class | org.primefaces.component.inputtextarea.InputTextareaRender |

Attributes

| Name | Default | Type | Description |
|-----------|---------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component than can be either an EL expression of a literal text |
| converter | null | Converter/ String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |

| Name | Default | Type | Description |
|---------------------|---------|-------------|---------------------------------------------------------------------------------------------------------------------|
| validator | null | Method Expr | A method binding expression that refers to a method validating the input |
| valueChangeListener | null | Method Expr | A method binding expression that refers to a method for handling a valuchangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| accesskey | null | String | Access key that when pressed transfers focus to the input element. |
| alt | null | String | Alternate textual description of the input field. |
| autocomplete | null | String | Controls browser autocomplete behavior. |
| dir | null | String | Direction indication for text that does not inherit directionality. Valid values are LTR and RTL. |
| disabled | false | Boolean | Disables input field |
| label | null | String | A localized user presentable name. |
| lang | null | String | Code describing the language used in the generated markup for this component. |
| onblur | null | String | Client side callback to execute when input element loses focus. |
| onchange | null | String | Client side callback to execute when input element loses focus and its value has been modified since gaining focus. |
| onclick | null | String | Client side callback to execute when input element is clicked. |
| ondblclick | null | String | Client side callback to execute when input element is double clicked. |
| onfocus | null | String | Client side callback to execute when input element receives focus. |
| onkeydown | null | String | Client side callback to execute when a key is pressed down over input element. |
| onkeypress | null | String | Client side callback to execute when a key is pressed and released over input element. |
| onkeyup | null | String | Client side callback to execute when a key is released over input element. |
| onmousedown | null | String | Client side callback to execute when a pointer button is |

| Name | Default | Type | Description |
|-----------------|---------|-------------|-----------------------------------------------------------------------------------------|
| | | | pressed down over input element |
| onmousemove | null | String | Client side callback to execute when a pointer button is moved within input element. |
| onmouseout | null | String | Client side callback to execute when a pointer button is moved away from input element. |
| onmouseover | null | String | Client side callback to execute when a pointer button is moved onto input element. |
| onmouseup | null | String | Client side callback to execute when a pointer button is released over input element. |
| onselect | null | String | Client side callback to execute when text within input element is selected by user. |
| readonly | false | Boolean | Flag indicating that this component will prevent changes by the user. |
| size | null | Integer | Number of characters used to determine the width of the input element. |
| style | null | String | Inline style of the input element. |
| styleClass | null | String | Style class of the input element. |
| tabindex | null | Integer | Position of the input element in the tabbing order. |
| title | null | String | Advisory tooltip informaton. |
| autoResize | true | Boolean | Specifies auto growing when being typed. |
| maxLength | null | Integer | Maximum number of characters that may be entered in this field. |
| counter | null | String | Id of the output component to display remaining chars. |
| counterTemplate | {0} | String | Template text to display in counter. |
| completeMethod | null | Method Expr | Method to provide suggestions. |
| minQueryLength | 3 | Integer | Number of characters to be typed to run a query. |
| queryDelay | 700 | Integer | Delay in ms before sending each query. |
| scrollHeight | null | Integer | Height of the viewport for autocomplete suggestions. |

Getting Started with InputTextarea

InputTextarea usage is same as standard inputTextarea;

```
<p:inputTextarea value="#{bean.propertyName}" />
```

AutoResize

While textarea is being typed, if content height exceeds the allocated space, textarea can grow automatically. Use autoResize option to turn on/off this feature.

```
<p:inputTextarea value="#{bean.propertyName}" autoResize="true|false"/>
```

Remaining Characters

InputTextarea can limit the maximum allowed characters with maxLength option and display the remaining characters count as well.

```
<p:inputTextarea value="#{bean.propertyName}" counter="display"
    maxLength="20" counterTemplate="{0} characters remaining" />

<h:outputText id="display" />
```

AutoComplete

InputTextarea supports ajax autocomplete functionality as well. You need to provide a completeMethod to provide the suggestions to use this feature. In sample below, completeArea method will be invoked with the query being the four characters before the caret.

```
public class AutoCompleteBean {

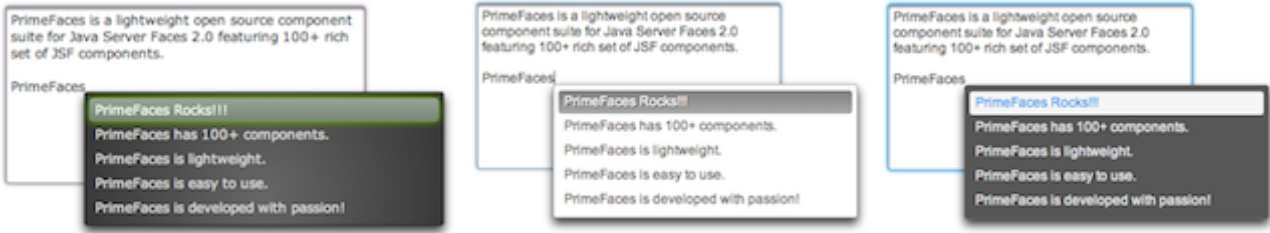
    public List<String> completeArea(String query) {
        List<String> results = new ArrayList<String>();

        if(query.equals("PrimeFaces")) {
            results.add("PrimeFaces Rocks!!!");
            results.add("PrimeFaces has 100+ components.");
            results.add("PrimeFaces is lightweight.");
            results.add("PrimeFaces is easy to use.");
            results.add("PrimeFaces is developed with passion!");
        }
        else {
            for(int i = 0; i < 10; i++) {
                results.add(query + i);
            }
        }

        return results;
    }
}
```



```
<p:inputTextarea rows="10" cols="50" minQueryLength="4"
    completeMethod="#{autoCompleteBean.completeArea}" />
```



Skinning

InputTextarea renders a textarea element which *style* and *styleClass* options apply. Following is the list of structural style classes;

| Style Class | Applies |
|------------------------|--------------------------|
| ui-inputtextarea | Textarea element. |
| ui-inputfield | Textarea element. |
| .ui-autocomplete-panel | Overlay for suggestions. |
| .ui-autocomplete-items | Suggestions container. |
| .ui-autocomplete-item | Each suggestion. |

As skinning style classes are global, see the main theming section for more information.

3.68 Keyboard

Keyboard is an input component that uses a virtual keyboard to provide the input. Notable features are the customizable layouts and skinning capabilities.



Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | keyboard |
| Component Class | org.primefaces.component.keyboard.Keyboard |
| Component Type | org.primefaces.component.Keyboard |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.KeyboardRenderer |
| Renderer Class | org.primefaces.component.keyboard.KeyboardRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component than can be either an EL expression of a literal text |
| converter | null | Converter/String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |

| Name | Default | Type | Description |
|---------------------|---------|------------|---------------------------------------------------------------------------------------------------|
| validator | null | MethodExpr | A method binding expression that refers to a method validating the input |
| valueChangeListener | null | MethodExpr | A method binding expression that refers to a method for handling a valuechange event |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fails. |
| password | false | Boolean | Makes the input a password field. |
| showMode | focus | String | Specifies the showMode, 'focus', 'button', 'both' |
| buttonImage | null | String | Image for the button. |
| buttonImageOnly | false | boolean | When set to true only image of the button would be displayed. |
| effect | fadeIn | String | Effect of the display animation. |
| effectDuration | null | String | Length of the display animation. |
| layout | qwerty | String | Built-in layout of the keyboard. |
| layoutTemplate | null | String | Template of the custom layout. |
| keypadOnly | focus | Boolean | Specifies displaying a keypad instead of a keyboard. |
| promptLabel | null | String | Label of the prompt text. |
| closeLabel | null | String | Label of the close key. |
| clearLabel | null | String | Label of the clear key. |
| backspaceLabel | null | String | Label of the backspace key. |
| accesskey | null | String | Access key that when pressed transfers focus to the input element. |
| alt | null | String | Alternate textual description of the input field. |
| autocomplete | null | String | Controls browser autocomplete behavior. |
| dir | null | String | Direction indication for text that does not inherit directionality. Valid values are LTR and RTL. |
| disabled | false | Boolean | Disables input field |
| label | null | String | A localized user presentable name. |
| lang | null | String | Code describing the language used in the generated markup for this component. |
| maxlength | null | Integer | Maximum number of characters that may be entered in this field. |

| Name | Default | Type | Description |
|-------------|---------|---------|---------------------------------------------------------------------------------------------------------------------|
| onblur | null | String | Client side callback to execute when input element loses focus. |
| onchange | null | String | Client side callback to execute when input element loses focus and its value has been modified since gaining focus. |
| onclick | null | String | Client side callback to execute when input element is clicked. |
| ondblclick | null | String | Client side callback to execute when input element is double clicked. |
| onfocus | null | String | Client side callback to execute when input element receives focus. |
| onkeydown | null | String | Client side callback to execute when a key is pressed down over input element. |
| onkeypress | null | String | Client side callback to execute when a key is pressed and released over input element. |
| onkeyup | null | String | Client side callback to execute when a key is released over input element. |
| onmousedown | null | String | Client side callback to execute when a pointer button is pressed down over input element |
| onmousemove | null | String | Client side callback to execute when a pointer button is moved within input element. |
| onmouseout | null | String | Client side callback to execute when a pointer button is moved away from input element. |
| onmouseover | null | String | Client side callback to execute when a pointer button is moved onto input element. |
| onmouseup | null | String | Client side callback to execute when a pointer button is released over input element. |
| onselect | null | String | Client side callback to execute when text within input element is selected by user. |
| placeholder | null | String | Specifies a short hint. |
| readonly | false | Boolean | Flag indicating that this component will prevent changes by the user. |
| size | null | Integer | Number of characters used to determine the width of the input element. |
| style | null | String | Inline style of the input element. |
| styleClass | null | String | Style class of the input element. |
| tabindex | null | Integer | Position of the input element in the tabbing order. |
| title | null | String | Advisory tooltip informaton. |

| Name | Default | Type | Description |
|-----------|---------|--------|---------------------------------|
| widgetVar | null | String | Name of the client side widget. |

Getting Started with Keyboard

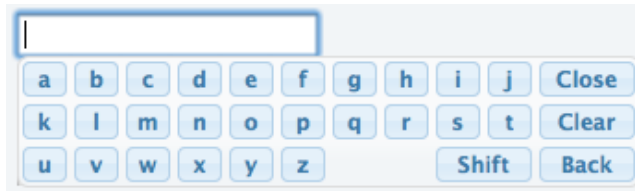
Keyboard is used just like a simple `inputText`, by default when the input gets the focus a keyboard is displayed.

```
<p:keyboard value="#{bean.value}" />
```

Built-in Layouts

There're a couple of built-in keyboard layouts these are 'qwerty', 'qwertyBasic' and 'alphabetic'. For example keyboard below has the alphabetic layout.

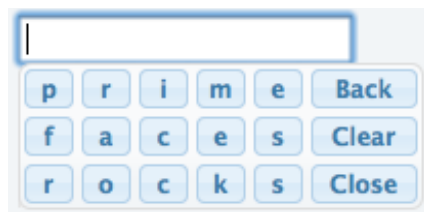
```
<p:keyboard value="#{bean.value}" layout="alphabetic"/>
```



Custom Layouts

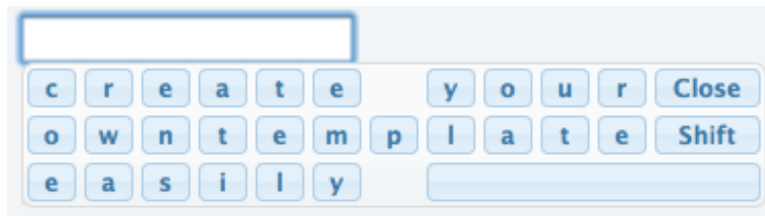
Keyboard has a very flexible layout mechanism allowing you to come up with your own layout.

```
<p:keyboard value="#{bean.value}"
  layout="custom"
  layoutTemplate="prime-back,faces-clear,rocks-close"/>
```



Another example;

```
<p:keyboard value="#{bean.value}"
  layout="custom"
  layoutTemplate="create-space-your-close,owntemplate-shift,easily-space-spacebar"/>
```



A layout template basically consists of built-in keys and your own keys. Following is the list of all built-in keys.

- back
- clear
- close
- shift
- spacebar
- space
- halfspace

All other text in a layout is realized as separate keys so "prime" would create 5 keys as "p" "r" "i" "m" "e". Use dash to separate each member in layout and use commas to create a new row.

Keypad

By default keyboard displays whole keys, if you only need the numbers use the keypad mode.

```
<p:keyboard value="#{bean.value}" keypadOnly="true"/>
```

ShowMode

There're a couple of different ways to display the keyboard, by default keyboard is shown once input field receives the focus. This is customized using the showMode feature which accept values 'focus', 'button', 'both'. Keyboard below displays a button next to the input field, when the button is clicked the keyboard is shown.

```
<p:keyboard value="#{bean.value}" showMode="button"/>
```



Button can also be customized using the *buttonImage* and *buttonImageOnly* attributes.

3.69 KeyFilter

KeyFilter is used to filter keyboard input on specified input components.

Info

| | |
|------------------|-------------------------------------------------------------|
| Tag | keyFilter |
| Component Class | org.primefaces.component.keyfilter.KeyFilter |
| Component Type | org.primefaces.component.KeyFilter |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.KeyFilter |
| Renderer Class | org.primefaces.component.keyfilter.KeyFilterRenderer |

Attributes

| Name | Default | Type | Description |
|--------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component than can be either an EL expression of a literal text |
| widgetVar | null | String | Name of the client side widget. |
| for | null | String | The target input expression, defaults to parent. |
| regEx | null | String | Defines the regular expression which should be used for filtering the input. |
| inputRegEx | null | String | Defines the regular expression which should be used to test the complete input text content. |
| mask | null | String | Defines the predefined mask which should be used (pint, int, pnum, num, hex, email, alpha, alphanum). |
| testFunction | null | String | Defines a javascript code or function which should be used for filtering. |
| preventPaste | true | Boolean | Boolean value to specify if the component also should prevent paste. |

Getting Started with KeyFilter

KeyFilter can either be attached to an input using for property or by being nested inside the target input component. Filtering is applied using regex, mask or testFunction properties.

```
<h:form>
  <h:panelGrid columns="2">
    <h:outputText value="KeyFilter with regex on a p:inputText"/>
    <p:inputText id="text1">
      <p:keyFilter regex="/[ABC]/i"/>
    </p:inputText>

    <h:outputText value="KeyFilter with mask on a h:inputText"/>
    <h:inputText id="text2" />

    <h:outputText value="KeyFilter with testFunction on a p:autoComplete" />
    <p:autoComplete id="autoComplete1" value="#{autoCompleteView.txt1}"
      completeMethod="#{autoCompleteView.completeText}" />
  </h:panelGrid>

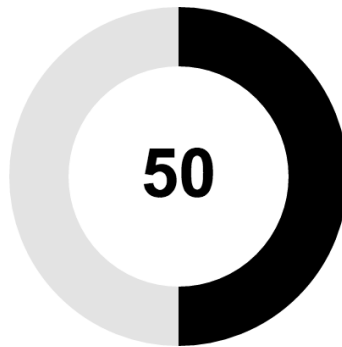
  <p:keyFilter for="text2" mask="num" />
  <p:keyFilter for="autoComplete1" testFunction="return c == 'z';" />
</h:form>
```

There are also predefined masks for common formats;

| Mask | Pattern |
|----------|--------------------|
| pint | /[\d]/ |
| int | /[\d\-/]/ |
| pnum | /[\d\./]/ |
| money | /[\d\.\s,]/ |
| num | /[\d\-\./]/ |
| hex | /[0-9a-f]/i |
| email | /[a-z0-9_\. \-@]/i |
| alpha | /[a-z_]/i |
| alphanum | /[a-z0-9_]/i |

3.70 Knob

Knob is an input component to insert numeric values in a range.



Info

| | |
|------------------|---------------------------------------------------|
| Tag | knob |
| Component Class | org.primefaces.component.knob.Knob |
| Component Type | org.primefaces.component.Knob |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.KnobRenderer |
| Renderer Class | org.primefaces.component.knob.KnobRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component than can be either an EL expression of a literal text |
| converter | null | Converter /String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |

| Name | Default | Type | Description |
|---------------------|---------|-------------|---------------------------------------------------------------------------------------------------------|
| validator | null | Method Expr | A method binding expression that refers to a method validating the input |
| valueChangeListener | null | Method Expr | A method binding expression that refers to a method for handling a valuchangeevent |
| requiredMessage | null | String | Message to be displayed after failed validation. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| min | 0 | Integer | Min valid value of the component. |
| max | 100 | Integer | Max valid value of the component. |
| step | 1 | Integer | Increment/decrement step of the component. |
| thickness | null | Float | Thickness of the bar. |
| width | auto | String | Width of the component. |
| height | auto | String | Height of the component. |
| foregroundColor | null | Object | Foreground color of the component, you can use an hex value, a css constant or a java.awt.Color object |
| backgroundColor | null | Object | Background color of the component, you can use an hex value, a css constant or a java.awt.Color object. |
| colorTheme | null | String | Theme of the knob. |
| disabled | false | Boolean | Disables the input element |
| showLabel | true | Boolean | Set false to hide the label. |
| cursor | false | Boolean | Set true to show only a cursor instead of the full bar. |
| labelTemplate | {value} | String | Template of the progress value e.g. "{value}%" |
| onchange | null | String | Client side callback to invoke when value changes. |

Getting Started with Knob

Knob is used as an input component with a value.

```
<p:knob value="#{bean.propertyName}" />
```

Boundaries and Step

Boundaries and step can be customized using min, max and step properties.

```
<p:knob value="#{bean.propertyName}" min="100" max="1000" step="50"/>
```

Label

Label at the center is visible by default and can be hidden by setting `showLabel` to `false`. In addition it can be customized using `labelTemplate` option.

```
<p:knob value="#{bean.propertyName}" labelTemplate="{value}%" />
```

Colors

Color scheme of the knob are changed with `foregroundColor` and `backgroundColor` options.

```
<p:knob foregroundColor="red" backgroundColor="#000000" value="25" />
```

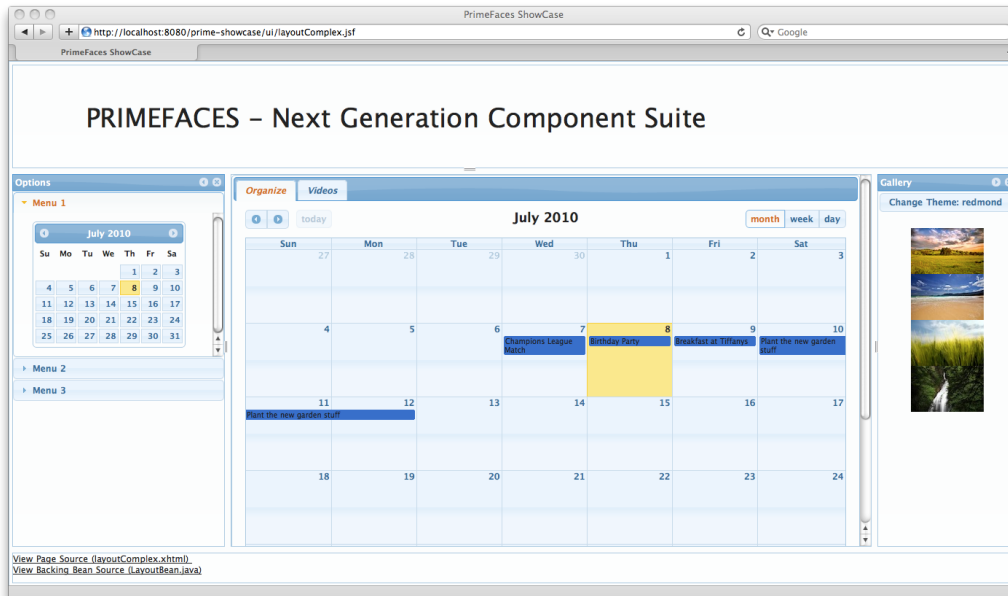
Client Side API

Widget: *PrimeFaces.widget.Knob*

| Method | Params | Return Type | Description |
|------------------------------|--------------------|---------------------|-------------------------------------------|
| <code>setValue(value)</code> | <code>value</code> | <code>void</code> | Updates the value with given value |
| <code>getValue()</code> | - | <code>number</code> | Returns the current knob value. |
| <code>increment()</code> | - | <code>void</code> | Increments current value by step factor. |
| <code>Decrement/()</code> | - | <code>void</code> | Decremenets current value by step factor. |

3.71 Layout

Layout component features a highly customizable borderLayout model making it very easy to create complex layouts even if you're not familiar with web design.



Info

| | |
|------------------|-------------------------------------------------------|
| Tag | layout |
| Component Class | org.primefaces.component.layout.Layout |
| Component Type | org.primefaces.component.Layout |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.LayoutRenderer |
| Renderer Class | org.primefaces.component.layout.LayoutRenderer |

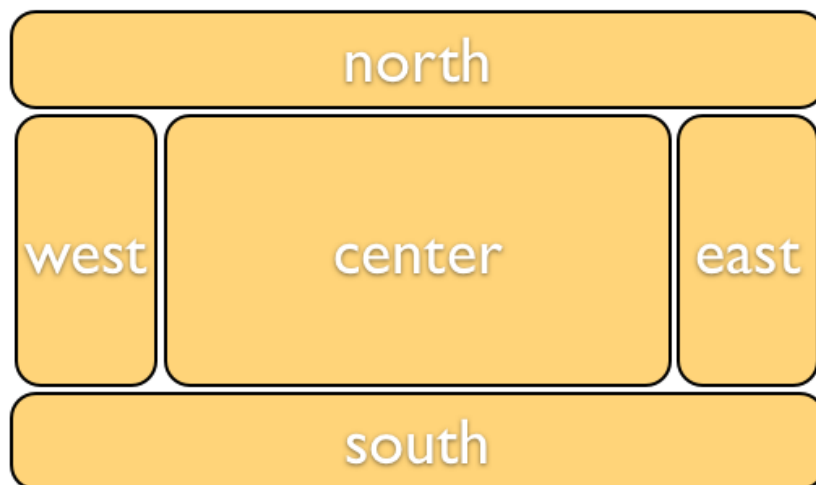
Attributes

| Name | Default | Type | Description |
|-----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| fullPage | false | Boolean | Specifies whether layout should span all page or not. |

| Name | Default | Type | Description |
|---------------|---------|--------|----------------------------------------------------------------------------------------------|
| style | null | String | Style to apply to container element, this is only applicable to element based layouts. |
| styleClass | null | String | Style class to apply to container element, this is only applicable to element based layouts. |
| onResize | null | String | Client side callback to execute when a layout unit is resized. |
| onClose | null | String | Client side callback to execute when a layout unit is closed. |
| onToggle | null | String | Client side callback to execute when a layout unit is toggled. |
| resizeTitle | null | String | Title label of the resize button. |
| collapseTitle | null | String | Title label of the collapse button. |
| expandTitle | null | String | Title label of the expand button. |
| closeTitle | null | String | Title label of the close button. |

Getting started with Layout

Layout is based on a BorderLayout model that consists of 5 different layout units which are top, left, center, right and bottom. This model is visualized in the schema below;



Full Page Layout

Layout has two modes, you can either use it for a full page layout or for a specific region in your page. This setting is controlled with the fullPage attribute which is false by default.

The regions in a layout are defined by layoutUnits, following is a simple full page layout with all possible units. Note that you can place any content in each layout unit.

```

<p:layout fullPage="true">
  <p:layoutUnit position="north" size="50">
    <h:outputText value="Top content." />
  </p:layoutUnit>
  <p:layoutUnit position="south" size="100">
    <h:outputText value="Bottom content." />
  </p:layoutUnit>
  <p:layoutUnit position="west" size="300">
    <h:outputText value="Left content" />
  </p:layoutUnit>
  <p:layoutUnit position="east" size="200">
    <h:outputText value="Right Content" />
  </p:layoutUnit>
  <p:layoutUnit position="center">
    <h:outputText value="Center Content" />
  </p:layoutUnit>
</p:layout>

```

Forms in Full Page Layout

When working with forms and full page layout, avoid using a form that contains layoutunits as generated dom may not be the same. So following is **invalid**.

```

<p:layout fullPage="true">
  <h:form>
    <p:layoutUnit position="west" size="100">
      h:outputText value="Left Pane" />
    </p:layoutUnit>
    <p:layoutUnit position="center">
      <h:outputText value="Right Pane" />
    </p:layoutUnit>
  </h:form>
</p:layout>

```

A layout unit must have it's own form instead, also avoid trying to update layout units because of same reason, update it's content instead.

Dimensions

Except center layoutUnit, other layout units **must** have dimensions defined via *size* option.

Element based layout

Another use case of layout is the element based layout. This is the default case actually so just ignore fullPage attribute or set it to false. Layout example below demonstrates creating a split panel implementation.

```

<p:layout style="width:400px;height:200px">

    <p:layoutUnit position="west" size="100">
        <h:outputText value="Left Pane" />
    </p:layoutUnit>

    <p:layoutUnit position="center">
        <h:outputText value="Right Pane" />
    </p:layoutUnit>

    //more layout units

</p:layout>

```

Ajax Behavior Events

Layout provides custom ajax behavior events for each layout state change.

| Event | Listener Parameter | Fired |
|--------|----------------------------------|---------------------------------------|
| toggle | org.primefaces.event.ToggleEvent | When a unit is expanded or collapsed. |
| close | org.primefaces.event.CloseEvent | When a unit is closed. |
| resize | org.primefaces.event.ResizeEvent | When a unit is resized. |

Stateful Layout

Making layout stateful would be easy, once you create your data to store the user preference, you can update this data using ajax event listeners provided by layout. For example if a layout unit is collapsed, you can save and persist this information. By binding this persisted information to the collapsed attribute of the layout unit layout will be rendered as the user left it last time.

Client Side API

Widget: *PrimeFaces.widget.Layout*

| Method | Params | Return Type | Description |
|------------------|----------|-------------|----------------------|
| toggle(position) | position | void | Toggles layout unit. |
| show(position) | position | void | Shows layout unit. |
| hide(unit) | position | void | Hides layout unit. |

Skinning

Following is the list of structural style classes;

| Style Class | Applies |
|-------------------------|--------------------------------|
| .ui-layout | Main wrapper container element |
| .ui-layout-doc | Layout container |
| .ui-layout-unit | Each layout unit container |
| .ui-layout-{position} | Position based layout unit |
| .ui-layout-unit-header | Layout unit header |
| .ui-layout-unit-content | Layout unit body |

As skinning style classes are global, see the main theming section for more information.

3.72 LayoutUnit

LayoutUnit represents a region in the border layout model of the Layout component.

Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | layoutUnit |
| Component Class | org.primefaces.component.layout.LayoutUnit |
| Component Type | org.primefaces.component.LayoutUnit |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.LayoutUnitRenderer |
| Renderer Class | org.primefaces.component.layout.LayoutUnitRenderer |

Attributes

| Name | Default | Type | Description |
|--------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| position | null | String | Position of the unit. |
| size | null | String | Size of the unit. |
| resizable | false | Boolean | Makes the unit resizable. |
| closable | false | Boolean | Makes the unit closable. |
| collapsible | false | Boolean | Makes the unit collapsible. |
| header | null | String | Text of header. |
| footer | null | String | Text of footer. |
| minSize | null | Integer | Minimum dimension for resize. |
| maxSize | null | Integer | Maximum dimension for resize. |
| gutter | 4px | String | Gutter size of layout unit. |
| visible | true | Boolean | Specifies default visibility |
| collapsed | false | Boolean | Specifies toggle status of unit |
| collapseSize | null | Integer | Size of the unit when collapsed |

| Name | Default | Type | Description |
|-------------|---------|--------|----------------------------------------|
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| effect | null | String | Effect name of the layout transition. |
| effectSpeed | null | String | Effect speed of the layout transition. |

Getting started with LayoutUnit

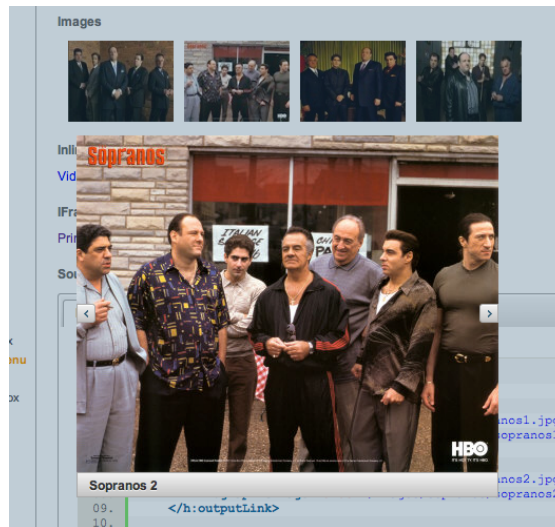
See layout component documentation for more information regarding the usage of layoutUnits.

Facets

In addition to *header* and *footer* attributes to display text at these locations, facets are also provided with the same name to display custom content.

3.73 LightBox

Lightbox is a powerful overlay that can display images, multimedia content, custom content and external urls.



Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | lightbox |
| Component Class | org.primefaces.component.lightbox.LightBox |
| Component Type | org.primefaces.component.LightBox |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.LightBoxRenderer |
| Renderer Class | org.primefaces.component.lightbox.LightBoxRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| style | null | String | Style of the container element not the overlay element. |
| styleClass | null | String | Style class of the container element not the overlay element. |
| width | null | String | Width of the overlay in iframe mode. |

| Name | Default | Type | Description |
|-------------|---------|---------|----------------------------------------------------------------------|
| height | null | String | Height of the overlay in iframe mode. |
| iframe | false | Boolean | Specifies an iframe to display an external url in overlay. |
| iframeTitle | null | String | Title of the iframe element. |
| visible | false | Boolean | Displays lightbox without requiring any user interaction by default. |
| onHide | null | String | Client side callback to execute when lightbox is displayed. |
| onShow | null | String | Client side callback to execute when lightbox is hidden. |

Images

The images displayed in the lightBox need to be nested as child outputLink components. Following lightBox is displayed when any of the links are clicked.

```
<p:lightBox>
  <h:outputLink value="sopranos/sopranos1.jpg" title="Sopranos 1">
    <h:graphicImage value="sopranos/sopranos1_small.jpg"/>
  </h:outputLink>

  <h:outputLink value="sopranos/sopranos2.jpg" title="Sopranos 2">
    <h:graphicImage value="sopranos/sopranos2_small.jpg"/>
  </h:outputLink>

  <h:outputLink value="sopranos/sopranos3.jpg" title="Sopranos 3">
    <h:graphicImage value="sopranos/sopranos3_small.jpg"/>
  </h:outputLink>

  //more
</p:lightBox>
```

IFrame Mode

LightBox also has the ability to display iframes inside the page overlay, following lightbox displays the PrimeFaces homepage when the link inside is clicked.

```
<p:lightBox iframe="true">
  <h:outputLink value="http://www.primefaces.org" title="PrimeFaces HomePage">
    <h:outputText value="PrimeFaces HomePage"/>
  </h:outputLink>
</p:lightBox>
```

Clicking the outputLink will display PrimeFaces homepage within an iframe.

Inline Mode

Inline mode acts like a modal dialog, you can display other JSF content on the page using the lightbox overlay. Simply place your overlay content in the "inline" facet. Clicking the link in the example below will display the panelGrid contents in overlay.

```

<p:lightBox>
  <h:outputLink value="#" title="Leo Messi" >
    <h:outputText value="The Messiah"/>
  </h:outputLink>
  <f:facet name="inline">
    //content here
  </f:facet>
</p:lightBox>

```

Lightbox inline mode doesn't support advanced content like complex widgets. Use a dialog instead for advanced cases involving custom content.

Client Side API

Widget: *PrimeFaces.widget.LightBox*

| Method | Params | Return Type | Description |
|--------------|--------|-------------|---------------------------------------------------------------------------------------------------------------------------------|
| show() | - | void | Displays lightbox. |
| hide() | - | void | Hides lightbox. |
| showURL(opt) | opt | void | Displays a URL in a iframe. opt parameter has three variables. width and height for iframe dimensions and src for the page url. |

Skinning

Lightbox resides in a main container element which *style* and *styleClass* options apply. Following is the list of structural style classes;

| Style Class | Applies |
|------------------------------|---------------------------|
| .ui-lightbox | Main container element. |
| .ui-lightbox-content-wrapper | Content wrapper element. |
| .ui-lightbox-content | Content container. |
| .ui-lightbox-nav-right | Next image navigator. |
| .ui-lightbox-nav-left | Previous image navigator. |
| .ui-lightbox-loading | Loading image. |
| .ui-lightbox-caption | Caption element. |

3.74 Link

Link is an extension to standard h:link component.

Info

| | |
|------------------|---------------------------------------------------|
| Tag | link |
| Component Class | org.primefaces.component.link.Link |
| Component Type | org.primefaces.component.Link |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.LinkRenderer |
| Renderer Class | org.primefaces.component.link.LinkRenderer |

Attributes

| Name | Default | Type | Description |
|---------------------|---------|---------|---------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| value | null | Object | Value of the component than can be either an EL expression of a literal text. |
| outcome | null | String | Used to resolve a navigation case. |
| includeViewParams | false | Boolean | Whether to include page parameters in target URI |
| fragment | null | String | Identifier of the target page which should be scrolled to. |
| disabled | false | Boolean | Disables button. |
| disableClientWindow | false | Boolean | Disable appending the ClientWindow on the rendering of this element. |
| accesskey | null | String | Access key that when pressed transfers focus to button. |
| charset | null | String | Character encoding of the resource designated by this hyperlink. |
| coords | null | String | Position and shape of the hot spot on the screen for client use in image maps. |
| dir | null | String | Direction indication for text that does not inherit directionality. Valid values are LTR and RTL. |
| hreflang | null | String | Language code of the resource designated by the link. |

| Name | Default | Type | Description |
|-------------|---------|--------|---------------------------------------------------------------------------------------------------------------------------------------------|
| rel | null | String | Relationship from the current document to the anchor specified by the link, values are provided by a space-separated list of link types. |
| rev | null | String | A reverse link from the anchor specified by this link to the current document, values are provided by a space-separated list of link types. |
| shape | null | String | Shape of hot spot on the screen, valid values are default, rect, circle and poly. |
| tabindex | null | String | Position of the element in the tabbing order. |
| target | null | String | Name of a frame where the resource targeted by this link will be displayed. |
| title | null | String | Advisory tooltip informaton. |
| type | null | String | Type of resource referenced by the link. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| onblur | null | String | Client side callback to execute when button loses focus. |
| onclick | null | String | Client side callback to execute when button is clicked. |
| ondblclick | null | String | Client side callback to execute when button is double clicked. |
| onfocus | null | String | Client side callback to execute when button receives focus. |
| onkeydown | null | String | Client side callback to execute when a key is pressed down over button. |
| onkeypress | null | String | Client side callback to execute when a key is pressed and released over button. |
| onkeyup | null | String | Client side callback to execute when a key is released over button. |
| onmousedown | null | String | Client side callback to execute when a pointer button is pressed down over button. |
| onmousemove | null | String | Client side callback to execute when a pointer button is moved within button |
| onmouseout | null | String | Client side callback to execute when a pointer button is moved away from button. |
| onmouseover | null | String | Client side callback to execute when a pointer button is moved onto button. |
| onmouseup | null | String | Client side callback to execute when a pointer button is released over button. |
| href | null | String | Inline style of the button. |

| Name | Default | Type | Description |
|--------|---------|---------|------------------------------------------------------|
| escape | true | Boolean | Defines if label of the component is escaped or not. |

Getting Started with Link

p:link usage is same as standard h:link, an outcome is necessary to navigate using GET requests. Assume you are at source.xhtml and need to navigate target.xhtml.

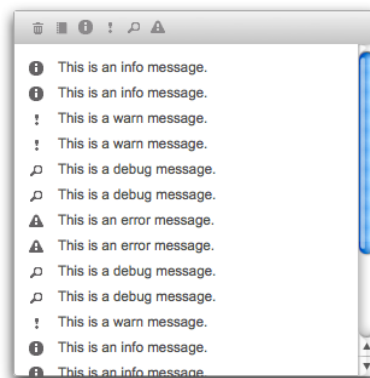
```
<p:link outcome="target" value="Navigate"/>
```

To navigate without outcome based approach, use href attribute.

```
<p:link href="http://www.primefaces.org" value="Navigate"/>
```


3.75 Log

Log component is a visual console to display logs on JSF pages.



Info

| | |
|------------------|-------------------------------------------------|
| Tag | log |
| Component Class | org.primefaces.component.log.Log |
| Component Type | org.primefaces.component.Log |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.LogRenderer |
| Renderer Class | org.primefaces.component.log.LogRenderer |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |

Getting started with Log

Log component is used simply as adding the component to the page.

```
<p:log />
```

Log API

PrimeFaces uses client side log apis internally, for example you can use log component to see details of an ajax request. Log API is also available via global PrimeFaces object in case you'd like to use the log component to display your logs.

```
<script type="text/javascript">
    PrimeFaces.info('Info message');
    PrimeFaces.debug('Debug message');
    PrimeFaces.warn('Warning message');
    PrimeFaces.error('Error message');
</script>
```

If project stage is development, log messages are also available at browser console.

Client Side API

Widget: *PrimeFaces.widget.Log*

| Method | Params | Return Type | Description |
|--------|--------|-------------|------------------------------|
| show() | - | void | Show the container element. |
| hide() | - | void | Hides the container element. |

3.76 Media

Media component is used for embedding multimedia content.

Info

| | |
|------------------|-----------------------------------------------------|
| Tag | media |
| Component Class | org.primefaces.component.media.Media |
| Component Type | org.primefaces.component.Media |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.MediaRenderer |
| Renderer Class | org.primefaces.component.media.MediaRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| value | null | String | Media source to play. |
| player | null | String | Type of the player, possible values are "quicktime", "windows", "flash", "real" and "pdf". |
| width | null | String | Width of the player. |
| height | null | String | Height of the player. |
| style | null | String | Style of the player. |
| styleClass | null | String | StyleClass of the player. |
| cache | true | Boolean | Controls browser caching mode of the resource. |

Getting started with Media

In its simplest form media component requires a source to play;

```
<p:media value="/media/ria_with_primefaces.mov" />
```

Player Types

By default, players are identified using the value extension so for instance mov files will be played by quicktime player. You can customize which player to use with the player attribute.

```
<p:media value="http://www.youtube.com/v/ABCDEFGH" player="flash"/>
```

Following is the supported players and file types.

| Player | Types |
|-----------|---------------------------------------------------------------------------------------------------------------------------|
| windows | asx, asf, avi, wma, wmv |
| quicktime | aif, aiff, aac, au, bmp, gsm, mov, mid, midi, mpg, mpeg, mp4, m4a, psd, qt, qtif, qif, qti, snd, tif, tiff, wav, 3g2, 3pg |
| flash | flv, mp3, swf |
| real | ra, ram, rm, rpm, rv, smi, smil |
| pdf | pdf |

Parameters

Different proprietary players might have different configuration parameters, these can be specified using f:param tags.

```
<p:media value="/media/ria_with_primefaces.mov">
  <f:param name="param1" value="value1" />
</p:media>
```

StreamedContent Support

Media component can also play binary media content, example for this use case is storing media files in database using binary format. In order to implement this, bind a StreamedContent.

```
<p:media value="#{mediaBean.media}" width="250" height="225" player="quicktime"/>
```

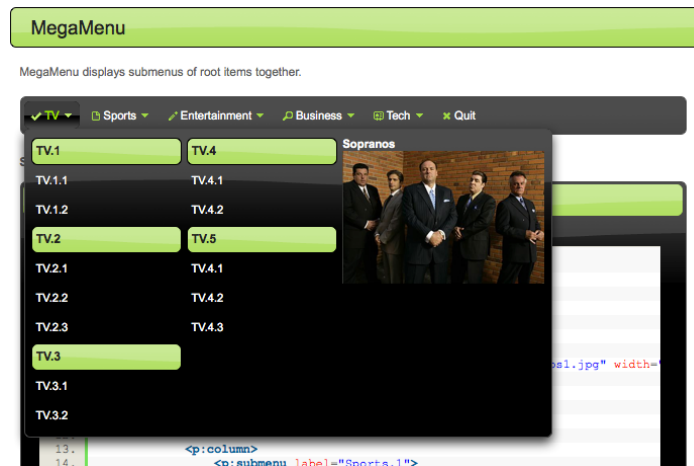
```
public class MediaBean {

    private StreamedContent media;

    public MediaController() {
        InputStream stream = //Create binary stream from database
        media = new DefaultStreamedContent(stream, "video/quicktime");
    }
    public StreamedContent getMedia() { return media; }
}
```

3.77 MegaMenu

MegaMenu is a horizontal navigation component that displays submenus together.



Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | megaMenu |
| Component Class | org.primefaces.component.megamenu.MegaMenu |
| Component Type | org.primefaces.component.MegaMenu |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.MegaMenuRenderer |
| Renderer Class | org.primefaces.component.megamenu.MegaMenuRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|-----------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| widgetVar | null | String | Name of the client side widget |
| model | null | MenuModel | MenuModel instance to create menus programmatically |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |

| Name | Default | Type | Description |
|-------------|------------|---------|------------------------------------------------------------------------------------------------------------------------|
| autoDisplay | true | Boolean | Defines whether submenus will be displayed on mouseover or not. When set to false, click event is required to display. |
| activeIndex | null | Integer | Index of the active root menu to display as highlighted. By default no root is highlighted. |
| orientation | horizontal | String | Defines the orientation of the root menuitems, valid values are "horizontal" and "vertical". |

Getting Started with MegaMenu

Layout of MegaMenu is grid based and root items require columns as children.

```

<p:megaMenu>
  <p:submenu label="TV" icon="ui-icon-check">
    <p:column>
      <p:submenu label="TV.1">
        <p:menuitem value="TV.1.1" url="#" />
        <p:menuitem value="TV.1.2" url="#" />
      </p:submenu>
      <p:submenu label="TV.2">
        <p:menuitem value="TV.2.1" url="#" />
        <p:menuitem value="TV.2.2" url="#" />
        <p:menuitem value="TV.2.3" url="#" />
      </p:submenu>
      <p:submenu label="TV.3">
        <p:menuitem value="TV.3.1" url="#" />
        <p:menuitem value="TV.3.2" url="#" />
      </p:submenu>
    </p:column>

    <p:column>
      <p:submenu label="TV.4">
        <p:menuitem value="TV.4.1" url="#" />
        <p:menuitem value="TV.4.2" url="#" />
      </p:submenu>
      <p:submenu label="TV.5">
        <p:menuitem value="TV.5.1" url="#" />
        <p:menuitem value="TV.5.2" url="#" />
        <p:menuitem value="TV.5.3" url="#" />
      </p:submenu>
      <p:submenu label="TV.6">
        <p:menuitem value="TV.6.1" url="#" />
        <p:menuitem value="TV.6.2" url="#" />
        <p:menuitem value="TV.6.3" url="#" />
      </p:submenu>
    </p:column>

  </p:submenu>

  //more root items
</p:megaMenu>

```

Custom Content

Any content can be placed inside columns.

```
<p:column>
  <strong>Sopranos</strong>
  <p:graphicImage value="/images/sopranos/sopranos1.jpg" width="200"/>
</p:column>
```

Root MenuItem

MegaMenu supports menuItem as root menu options as well. Following example allows a root menu item to execute an action to logout the user.

```
<p:megaMenu>
  //submenus
  <p:menuItem label="Logout" action="#{bean.logout}"/>
</p:megaMenu>
```

Dynamic Menus

Menus can be created programmatically as well, see the dynamic menus part in menu component section for more information and an example.

Skinning

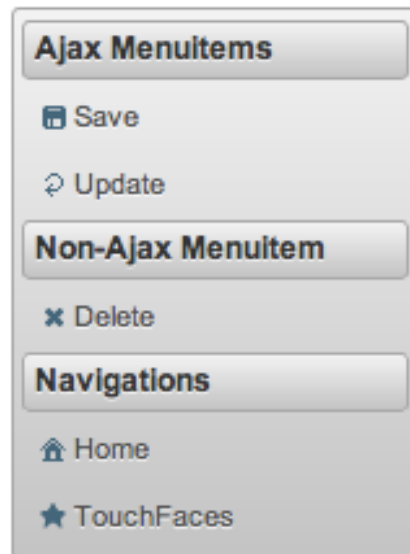
MegaMenu resides in a main container which *style* and *styleClass* attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|-------------------|-------------------------------|
| .ui-megamenu | Container element of menubar. |
| .ui-menu-list | List container |
| .ui-menuitem | Each menu item |
| .ui-menuitem-link | Anchor element in a link item |
| .ui-menuitem-text | Text element in an item |

As skinning style classes are global, see the main theming section for more information.

3.78 Menu

Menu is a navigation component with submenus and menuitems.



Info

| | |
|------------------|---------------------------------------------------|
| Tag | menu |
| Component Class | org.primefaces.component.menu.Menu |
| Component Type | org.primefaces.component.Menu |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.MenuRenderer |
| Renderer Class | org.primefaces.component.menu.MenuRenderer |

Attributes

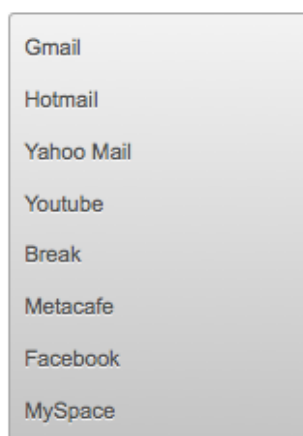
| Name | Default | Type | Description |
|-----------|---------|-----------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| widgetVar | null | String | Name of the client side widget. |
| model | null | MenuModel | A menu model instance to create menu programmatically. |
| trigger | null | String | Target component to attach the overlay menu. |

| Name | Default | Type | Description |
|--------------|---------|---------|------------------------------------------------------------------------------------------------|
| my | null | String | Corner of menu to align with trigger element. |
| at | null | String | Corner of trigger to align with menu element. |
| overlay | false | Boolean | Defines positioning type of menu, either static or overlay. |
| style | null | String | Inline style of the main container element. |
| styleClass | null | String | Style class of the main container element. |
| triggerEvent | click | String | Event to show the dynamic positioned menu. |
| tabindex | 0 | String | Position of the element in the tabbing order. Default is 0. |
| toggleable | false | Boolean | Defines whether clicking the header of a submenu toggles the visibility of children menuitems. |

Getting started with the Menu

A menu is composed of submenus and menuitems.

```
<p:menu>
  <p:menuitem value="Gmail" url="http://www.google.com" />
  <p:menuitem value="Hotmail" url="http://www.hotmail.com" />
  <p:menuitem value="Yahoo Mail" url="http://mail.yahoo.com" />
  <p:menuitem value="Youtube" url="http://www.youtube.com" />
  <p:menuitem value="Break" url="http://www.break.com" />
  <p:menuitem value="Metacafe" url="http://www.metacafe.com" />
  <p:menuitem value="Facebook" url="http://www.facebook.com" />
  <p:menuitem value="MySpace" url="http://www.myspace.com" />
</p:menu>
```

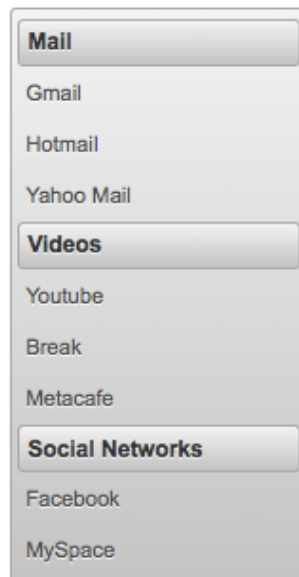


Submenus are used to group menuitems;

```
<p:menu>
  <p:submenu label="Mail">
    <p:menuitem value="Gmail" url="http://www.google.com" />
    <p:menuitem value="Hotmail" url="http://www.hotmail.com" />
    <p:menuitem value="Yahoo Mail" url="http://mail.yahoo.com" />
  </p:submenu>

  <p:submenu label="Videos">
    <p:menuitem value="Youtube" url="http://www.youtube.com" />
    <p:menuitem value="Break" url="http://www.break.com" />
    <p:menuitem value="Metacafe" url="http://www.metacafe.com" />
  </p:submenu>

  <p:submenu label="Social Networks">
    <p:menuitem value="Facebook" url="http://www.facebook.com" />
    <p:menuitem value="MySpace" url="http://www.myspace.com" />
  </p:submenu>
</p:menu>
```



Overlay Menu

Menu can be positioned on a page in two ways; "static" and "dynamic". By default it's static meaning the menu is in normal page flow. In contrast dynamic menus is not on the normal flow of the page allowing them to overlay other elements.

A dynamic menu is created by setting *overlay* option to true and defining a trigger to show the menu. Location of menu on page will be relative to the trigger and defined by *my* and *at* options that take combination of four values;

- left
- right
- bottom
- top

For example, clicking the button below will display the menu whose top left corner is aligned with bottom left corner of button.

```
<p:menu overlay="true" trigger="btn" my="left top" at="bottom left">
    ...submenus and menuitems
</p:menu>

<p:commandButton id="btn" value="Show Menu" type="button"/>
```

Ajax and Non-Ajax Actions

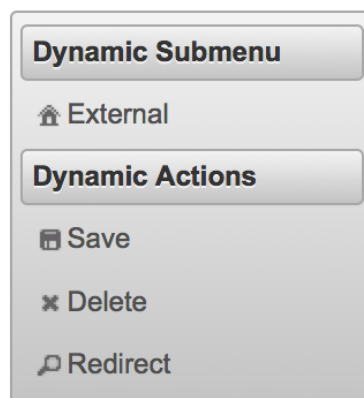
As menu uses menuitems, it is easy to invoke actions with or without ajax as well as navigation. See menuitem documentation for more information about the capabilities.

```
<p:menu>
  <p:submenu label="Options">
    <p:menuitem value="Save" actionListener="#{bean.save}" update="comp"/>
    <p:menuitem value="Update" actionListener="#{bean.update}" ajax="false"/>
    <p:menuitem value="Navigate" url="http://www.primefaces.org"/>
  </p:submenu>
</p:menu>
```

Dynamic Menus

Menus can be created programmatically as well, this is more flexible compared to the declarative approach. Menu metadata is defined using an *org.primefaces.model.MenuModel* instance, PrimeFaces provides the built-in *org.primefaces.model.DefaultMenuModel* implementation.

For further customization you can also create and bind your own MenuModel implementation. (e.g. One with JPA @Entity annotation to able able to persist to a database).



```
<p:menu model="#{menuBean.model}" />
```

```

public class MenuBean {

    private MenuModel model;

    public MenuBean() {
        model = new DefaultMenuModel();

        //First submenu
        DefaultSubMenu firstSubMenu = new DefaultSubMenu("Dynamic Submenu");

        DefaultMenuItem item = new DefaultMenuItem("External");
        item.setUrl("http://www.primefaces.org");
        item.setIcon("ui-icon-home");
        firstSubMenu.addElement(item);

        model.addElement(firstSubMenu);

        //Second submenu
        DefaultSubMenu secondSubMenu = new DefaultSubMenu("Dynamic Actions");

        item = new DefaultMenuItem("Save");
        item.setIcon("ui-icon-disk");
        item.setCommand("#{menuBean.save}");
        item.setUpdate("messages");
        secondSubMenu.addElement(item);

        item = new DefaultMenuItem("Delete");
        item.setIcon("ui-icon-close");
        item.setCommand("#{menuBean.delete}");
        item.setAjax(false);
        secondSubMenu.addElement(item);

        item = new DefaultMenuItem("Redirect");
        item.setIcon("ui-icon-search");
        item.setCommand("#{menuBean.redirect}");
        secondSubMenu.addElement(item);

        model.addElement(secondSubMenu);
    }

    public MenuModel getModel() { return model; }
}

```

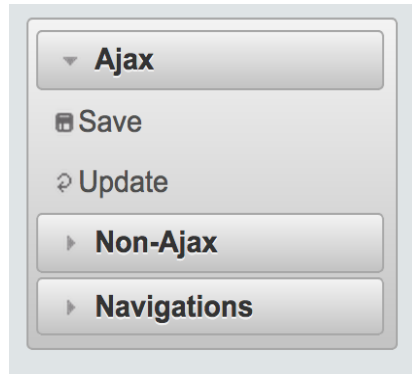
For all UI component counterpart such as p:menumenuitem, p:submenu, p:separator a corresponding interface with a default implementation exists in MenuModel API. Regarding actions, if you need to pass parameters in ajax or non-ajax commands, use setParam(key, value) method.

MenuModel API is supported by all menu components that have model attribute.

Toggleable

Enabling toggleable option makes the header of submenus clickable to expand and collapse their content.

```
<p:menu toggleable="true">
```



Skinning

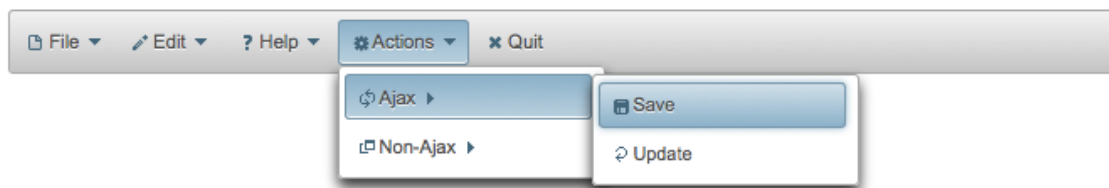
Menu resides in a main container element which *style* and *styleClass* attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|-------------------|-------------------------------------|
| .ui-menu | Container element of menu |
| .ui-menu-list | List container |
| .ui-menuitem | Each menu item |
| .ui-menuitem-link | Anchor element in a link item |
| .ui-menuitem-text | Text element in an item |
| .ui-menu-sliding | Container of ipod like sliding menu |

As skinning style classes are global, see the main theming section for more information.

3.79 Menubar

Menubar is a horizontal navigation component.



Info

| | |
|------------------|---------------------------------------------------------|
| Tag | menubar |
| Component Class | org.primefaces.component.menubar.Menubar |
| Component Type | org.primefaces.component.Menubar |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.MenubarRenderer |
| Renderer Class | org.primefaces.component.menubar.MenubarRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| widgetVar | null | String | Name of the client side widget |
| model | null | MenuModel | MenuModel instance to create menus programmatically |
| style | null | String | Inline style of menubar |
| styleClass | null | String | Style class of menubar |
| autoDisplay | false | Boolean | Defines whether the first level of submenus will be displayed on mouseover or not. When set to false, click event is required to display. |
| tabindex | 0 | String | Position of the element in the tabbing order. |

| Name | Default | Type | Description |
|-------------|---------|--------|---------------------------------------------------------------------|
| toggleEvent | hover | String | Event to toggle the submenus, valid values are "hover" and "click". |

Getting started with Menubar

Submenus and menuitems as child components are required to compose the menubar.

```
<p:menubar>
  <p:submenu label="Mail">
    <p:menuitem value="Gmail" url="http://www.google.com" />
    <p:menuitem value="Hotmail" url="http://www.hotmail.com" />
    <p:menuitem value="Yahoo Mail" url="http://mail.yahoo.com" />
  </p:submenu>
  <p:submenu label="Videos">
    <p:menuitem value="Youtube" url="http://www.youtube.com" />
    <p:menuitem value="Break" url="http://www.break.com" />
  </p:submenu>
</p:menubar>
```

Nested Menus

To create a menubar with a higher depth, nest submenus in parent submenus.

```
<p:menubar>
  <p:submenu label="File">
    <p:submenu label="New">
      <p:menuitem value="Project" url="#" />
      <p:menuitem value="Other" url="#" />
    </p:submenu>
    <p:menuitem value="Open" url="#"></p:menuitem>
    <p:menuitem value="Quit" url="#"></p:menuitem>
  </p:submenu>
  <p:submenu label="Edit">
    <p:menuitem value="Undo" url="#"></p:menuitem>
    <p:menuitem value="Redo" url="#"></p:menuitem>
  </p:submenu>
  <p:submenu label="Help">
    <p:menuitem label="Contents" url="#" />
    <p:submenu label="Search">
      <p:submenu label="Text">
        <p:menuitem value="Workspace" url="#" />
      </p:submenu>
    <p:menuitem value="File" url="#" />
  </p:submenu>
</p:menubar>
```

Root MenuItem

Menubar supports menuItem as root menu options as well;

```
<p:menubar>
  <p:menuItem label="Logout" action="#{bean.logout}"/>
</p:menubar>
```

Ajax and Non-Ajax Actions

As menu uses menuitems, it is easy to invoke actions with or without ajax as well as navigation. See menuItem documentation for more information about the capabilities.

```
<p:menubar>
  <p:submenu label="Options">
    <p:menuItem value="Save" actionListener="#{bean.save}" update="comp"/>
    <p:menuItem value="Update" actionListener="#{bean.update}" ajax="false"/>
    <p:menuItem value="Navigate" url="http://www.primefaces.org"/>
  </p:submenu>
</p:menubar>
```

Dynamic Menus

Menus can be created programmatically as well, see the dynamic menus part in menu component section for more information and an example.

Skinning

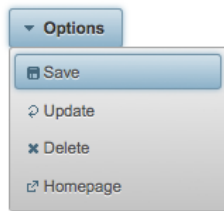
Menubar resides in a main container which *style* and *styleClass* attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|-------------------|-------------------------------|
| .ui-menubar | Container element of menubar. |
| .ui-menu-list | List container |
| .ui-menuitem | Each menu item |
| .ui-menuitem-link | Anchor element in a link item |
| .ui-menuitem-text | Text element in an item |

As skinning style classes are global, see the main theming section for more information.

3.80 MenuButton

MenuButton displays different commands in a popup menu.



Info

| | |
|------------------|---------------------------------------------------------------|
| Tag | menuButton |
| Component Class | org.primefaces.component.menubutton.MenuButton |
| Component Type | org.primefaces.component.MenuButton |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.MenuButtonRenderer |
| Renderer Class | org.primefaces.component.menubutton.MenuButtonRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|-----------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| value | null | String | Label of the button |
| style | null | String | Style of the main container element |
| styleClass | null | String | Style class of the main container element |
| widgetVar | null | String | Name of the client side widget |
| model | null | MenuModel | MenuModel instance to create menus programmatically |
| disabled | false | Boolean | Disables or enables the button. |
| iconPos | left | String | Position of the icon, valid values are left and right. |
| appendTo | null | String | Appends the overlay to the element defined by search expression. Defaults to document body. |

| Name | Default | Type | Description |
|----------------|---------|--------|------------------------------------------|
| menuStyleClass | null | String | Style class of the overlay menu element. |

Getting started with the MenuButton

MenuButton consists of one or more menuitems. Following menubutton example has three menuitems, first one is used triggers an action with ajax, second one does the similar but without ajax and third one is used for redirect purposes.

```
<p:menuButton value="Options">
  <p:menuitem value="Save" actionListener="#{bean.save}" update="comp" />
  <p:menuitem value="Update" actionListener="#{bean.update}" ajax="false" />
  <p:menuitem value="Go Home" url="/home.jsf" />
</p:menuButton>
```

Dynamic Menus

Menus can be created programmatically as well, see the dynamic menus part in menu component section for more information and an example.

Skinning

MenuButton resides in a main container which *style* and *styleClass* attributes apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|-------------------|-------------------------------|
| .ui-menu | Container element of menu. |
| .ui-menu-list | List container |
| .ui-menuitem | Each menu item |
| .ui-menuitem-link | Anchor element in a link item |
| .ui-menuitem-text | Text element in an item |
| .ui-button | Button element |
| .ui-button-text | Label of button |

3.81 MenuItem

MenuItem is used by various menu components.

Info

| | |
|------------------|------------------------------------------------------|
| Tag | menuItem |
| Tag Class | org.primefaces.component.menuitem.MenuItemTag |
| Component Class | org.primefaces.component.menuitem.MenuItem |
| Component Type | org.primefaces.component.MenuItem |
| Component Family | org.primefaces.component |

Attributes

| Name | Default | Type | Description |
|----------------|---------|-------------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| value | null | String | Label of the menuitem |
| actionListener | null | Method Expr | Action listener to be invoked when menuitem is clicked. |
| action | null | Method Expr | Action to be invoked when menuitem is clicked. |
| immediate | false | Boolean | When true, action of this menuitem is processed after apply request phase. |
| url | null | String | Url to be navigated when menuitem is clicked |
| target | null | String | Target type of url navigation |
| style | null | String | Style of the menuitem label |
| styleClass | null | String | StyleClass of the menuitem label |
| onclick | null | String | Javascript event handler for click event |
| async | false | Boolean | When set to true, ajax requests are not queued. |
| process | null | String | Components to process partially instead of whole view. |
| update | null | String | Components to update after ajax request. |
| disabled | false | Boolean | Disables the menuitem. |

| Name | Default | Type | Description |
|---------------------|---------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| onstart | null | String | Javascript handler to execute before ajax request is begins. |
| oncomplete | null | String | Javascript handler to execute when ajax request is completed. |
| onsuccess | null | String | Javascript handler to execute when ajax request succeeds. |
| onerror | null | String | Javascript handler to execute when ajax request fails. |
| global | true | Boolean | Global ajax requests are listened by ajaxStatus component, setting global to false will not trigger ajaxStatus. |
| delay | null | String | If less than <i>delay</i> milliseconds elapses between calls to <i>request()</i> only the most recent one is sent and all other requests are discarded. If this option is not specified, or if the value of <i>delay</i> is the literal string 'none' without the quotes, no delay is used. |
| partialSubmit | false | Boolean | Enables serialization of values belonging to the partially processed components only. |
| partialSubmitFilter | null | String | Selector to use when partial submit is on, default is ":input" to select all descendant inputs of a partially processed components. |
| resetValues | false | Boolean | If true, local values of input components to be updated within the ajax request would be reset. |
| ignoreAutoUpdate | false | Boolean | If true, components which autoUpdate="true" will not be updated for this request. If not specified, or the value is false, no such indication is made. |
| timeout | 0 | Integer | Timeout for the ajax request in milliseconds. |
| ajax | true | Boolean | Specifies submit mode. |
| icon | null | String | Path of the menuitem image. |
| title | null | String | Advisory tooltip information. |
| outcome | null | String | Navigation case outcome. |
| includeViewParams | false | Boolean | Defines if page parameters should be in target URI. |
| fragment | null | String | Identifier of the target page element to scroll to. |
| disableClientWindow | false | Boolean | Disable appending the ClientWindow on the rendering of this element. |
| containerStyle | null | String | Inline style of the menuitem container. |
| containerStyleClass | null | String | Style class of the menuitem container. |
| form | null | String | Form to serialize for an ajax request. Default is the enclosing form. |
| escape | true | Boolean | Defines whether value would be escaped or not |

| Name | Default | Type | Description |
|------|---------|--------|--------------------------------------------------------------------------------|
| rel | null | String | Defines the relationship between the current document and the linked document. |

Getting started with MenuItem

MenuItem is a generic component used by the following components.

- Menu
- MenuBar
- MegaMenu
- Breadcrumb
- Dock
- Stack
- MenuButton
- SplitButton
- PanelMenu
- TabMenu
- SlideMenu
- TieredMenu

Note that some attributes of menuItem might not be supported by these menu components. Refer to the specific component documentation for more information.

Navigation vs Action

MenuItem has two use cases, directly navigating to a url with GET or doing a POST to execute an action. This is decided by url or outcome attributes, if either one is present menuItem does a GET request, if not parent form is posted with or without ajax decided by *ajax* attribute.

Icons

There are two ways to specify an icon of a menuItem, you can either use bundled icons within PrimeFaces or provide your own via css.

ThemeRoller Icons

```
<p:menuItem icon="ui-icon-disk" ... />
```

Custom Icons

```
<p:menuItem icon="barca" ... />
```

```
.barca {
    background: url(barca_logo.png) no-repeat;
    height:16px;
    width:16px;
}
```

3.82 Message

Message is a pre-skinned extended version of the standard JSF message component.

Text: * text: Validation Error: Value is required.

Info

| | |
|------------------|---------------------------------------------------------|
| Tag | message |
| Component Class | org.primefaces.component.message.Message |
| Component Type | org.primefaces.component.Message |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.MessageRenderer |
| Renderer Class | org.primefaces.component.message.MessageRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| showSummary | false | Boolean | Specifies if the summary of the FacesMessage should be displayed. |
| showDetail | true | Boolean | Specifies if the detail of the FacesMessage should be displayed. |
| for | null | String | Id of the component whose messages to display. |
| redisplay | true | Boolean | Defines if already rendered messages should be displayed |
| display | both | String | Defines the display mode. |
| escape | true | Boolean | Defines whether html would be escaped or not. |
| severity | null | String | Comma separated list of severities to display only. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |

Getting started with Message

Message usage is exactly same as standard message.

```
<h:inputText id="txt" value="#{bean.text}" />
<p:message for="txt" />
```

Display Mode

Message component has three different display modes;

- text : Only message text is displayed.
- icon : Only message severity is displayed and message text is visible as a tooltip.
- both (default) : Both icon and text are displayed.

Severity Levels

Using severity attribute, you can define which severities can be displayed by the component. For instance, you can configure messages to only display infos and warnings.

```
<p:message severity="info,warn" for="txt"/>
```

Escaping

Component escapes html content in messages by default, in case you need to display html, disable escape option.

```
<p:message escape="false" for="txt" />
```

Skinning

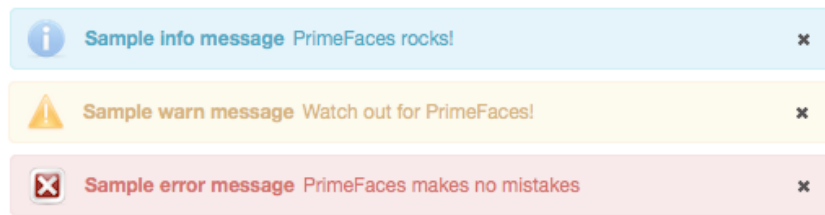
Full list of CSS selectors of message is as follows;

| Style Class | Applies |
|-------------------------------|----------------------------------|
| ui-message-{severity} | Container element of the message |
| ui-message-{severity}-summary | Summary text |
| ui-message-{severity}-detail | Detail text |

{severity} can be 'info', 'error', 'warn' and error.

3.83 Messages

Messages is a pre-skinned extended version of the standard JSF messages component.



Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | messages |
| Component Class | org.primefaces.component.messages.Messages |
| Component Type | org.primefaces.component.Messages |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.MessagesRenderer |
| Renderer Class | org.primefaces.component.messages.MessagesRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| showSummary | true | Boolean | Specifies if the summary of the FacesMessages should be displayed. |
| showDetail | false | Boolean | Specifies if the detail of the FacesMessages should be displayed. |
| globalOnly | false | String | When true, only facesmessages with no clientIds are displayed. |
| redisplay | true | Boolean | Defines if already rendered messages should be displayed |
| autoUpdate | false | Boolean | Enables auto update mode if set true. |
| for | null | String | Name of associated key, takes precedence when used with globalOnly. |
| escape | true | Boolean | Defines whether html would be escaped or not. |

| Name | Default | Type | Description |
|------------|---------|---------|-----------------------------------------------------|
| severity | null | String | Comma separated list of severities to display only. |
| closable | false | Boolean | Adds a close icon to hide the messages. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| showIcon | true | Boolean | Defines if severity icons would be displayed. |

Getting started with Messages

Message usage is exactly same as standard messages.

```
<p:messages />
```

AutoUpdate

When auto update is enabled, messages component is updated with each ajax request automatically.

Targetable Messages

There may be times where you need to target one or more messages to a specific message component, for example suppose you have growl and messages on same page and you need to display some messages on growl and some on messages. Use for attribute to associate messages with specific components.

```
<p:messages for="somekey" />
<p:growl for="anotherkey" />
```

```
FacesContext context = FacesContext.getCurrentInstance();

context.addMessage("somekey", facesMessage1);
context.addMessage("somekey", facesMessage2);

context.addMessage("anotherkey", facesMessage3);
```

In sample above, messages will display first and second message and growl will only display the 3rd message.

Severity Levels

Using severity attribute, you can define which severities can be displayed by the component. For instance, you can configure messages to only display infos and warnings.

```
<p:messages severity="info,warn" />
```

Escaping

Messages escapes html content in messages, disable escape option to display content as html.

```
<p:messages escape="false" />
```

Skinning

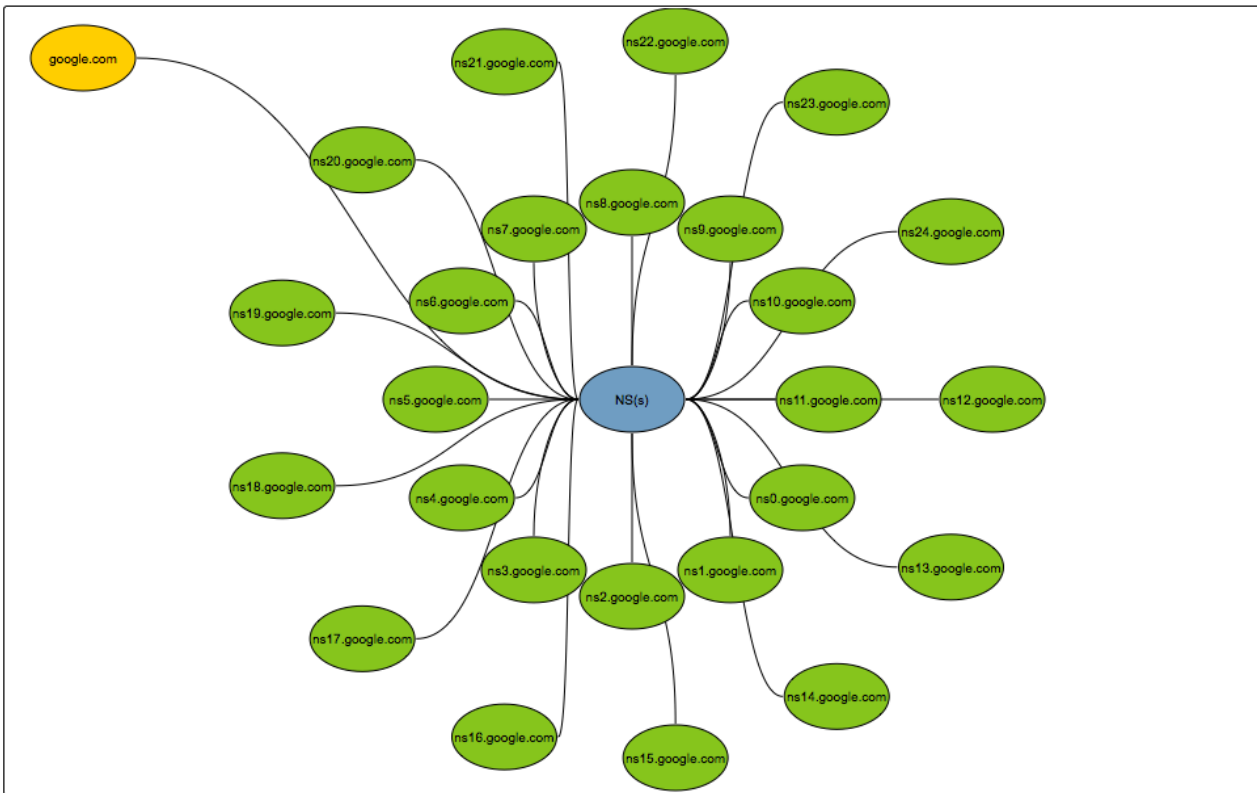
Full list of CSS selectors of message is as follows;

| Style Class | Applies |
|--------------------------------|----------------------------------|
| ui-messages-{severity} | Container element of the message |
| ui-messages-{severity}-summary | Summary text |
| ui-messages-{severity}-detail | Detail text |
| ui-messages-{severity}-icon | Icon of the message. |

{severity} can be 'info', 'error', 'warn' and error.

3.84 Mindmap

Mindmap is an interactive tool to visualize mindmap data featuring lazy loading, callbacks, animations and more.



Info

| | |
|------------------|---------------------------------------------------------|
| Tag | mindmap |
| Component Class | org.primefaces.component.mindmap.Mindmap |
| Component Type | org.primefaces.component.Mindmap |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.MindmapRenderer |
| Renderer Class | org.primefaces.component.mindmap.MindmapRenderer |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |

| Name | Default | Type | Description |
|-------------|---------|-------------|------------------------------------------------------------------------------------|
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | MindmapNode | MenuModel instance to build menu dynamically. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| effectSpeed | 300 | Integer | Speed of the animations in milliseconds. |
| widgetVar | null | String | Name of the client side widget. |

Getting started with Mindmap

Mindmap requires an instance of *org.primefaces.model.mindmap.MindmapNode* as the root. Due to it's lazy nature, a select ajax behavior must be provided to load children of selected node on the fly with ajax.

```
public class MindmapBean {
    private MindmapNode root;

    public MindmapBean() {
        root = new DefaultMindmapNode("google.com", "Google", "FFCC00", false);

        MindmapNode ips = new DefaultMindmapNode("IPs", "IP Nos", "6e9ebf", true);
        MindmapNode ns = new DefaultMindmapNode("NS(s)", "Names", "6e9ebf", true);
        MindmapNode mw = new DefaultMindmapNode("Mw", "Malicious ", "6e9ebf", true);

        root.addNode(ips);
        root.addNode(ns);
        root.addNode(malware);
    }

    public MindmapNode getRoot() {
        return root;
    }

    public void onNodeSelect(SelectEvent event) {
        MindmapNode node = (MindmapNode) event.getObject();
        //load children of select node and add via node.addNode(childNode);
    }
}
```

```
<p:mindmap value="#{mindmapBean.root}" style="width:100%;height:600px">
    <p:ajax event="select" listener="#{mindmapBean.onNodeSelect}" />
</p:mindmap>
```

DoubleClick Behavior

Selecting a node with single click is used to load subnodes, double click behavior is also provided for further customization. Following sample, displays the details of the subnode in a dialog.

```
<p:mindmap value="#{mindmapBean.root}" style="width:100%;height:600px;">
  <p:ajax event="select" listener="#{mindmapBean.onNodeSelect}" />
  <p:ajax event="dblselect" listener="#{mindmapBean.onNodeDbselect}"
    update="output" oncomplete="PF('details').show()"/>
</p:mindmap>

<p:dialog widgetVar="details" header="Node Details" resizable="false" modal="true"
  showEffect="fade" hideEffect="fade">
  <h:outputText id="output" value="#{mindmapBean.selectedNode.data}" />
</p:dialog>
```

```
public void onNodeDbselect(SelectEvent event) {
    this.selectedNode = (MindmapNode) event.getObject();
}
```

MindmapNode API

org.primefaces.model.mindmap.MindmapNode

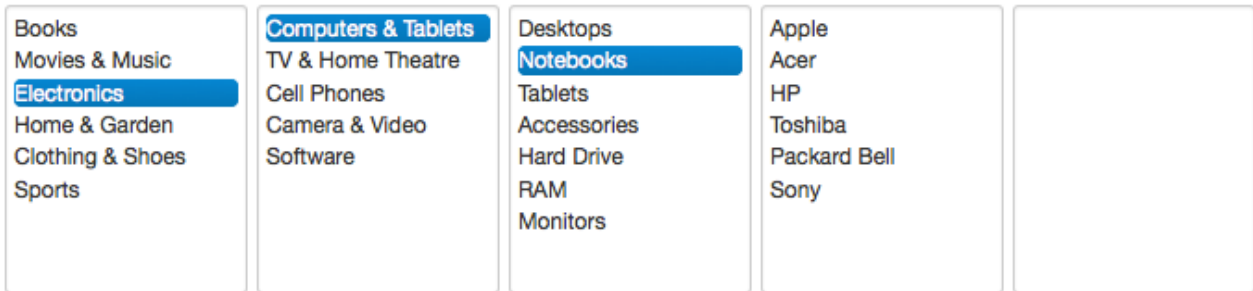
| Property | Default | Type | Description |
|------------|---------|-------------|-----------------------------------------|
| label | null | String | Label of the node. |
| data | null | Object | Optional data associated with the node. |
| fill | null | String | Color code of the node. |
| selectable | 1 | Boolean | Flag to define if node is clickable. |
| parent | null | MindmapNode | Parent node instance. |

Tips

- IE 7 and IE 8 are not supported due to technical limitations, IE 9 is supported.

3.85 MultiSelectListbox

MultiSelectListbox is used to select an item from a collection of listboxes that are in parent-child relationship.



Info

| | |
|------------------|-------------------------------------------------------------------------------|
| Tag | multiSelectListbox |
| Component Class | org.primefaces.component.multiselectlistbox.MultiSelectListbox |
| Component Type | org.primefaces.component.MultiSelectListbox |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.MultiSelectListboxRenderer |
| Renderer Class | org.primefaces.component.multiselectlistbox.MultiSelectListboxRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UICoMponent instance in a backing bean. |
| widgetVar | null | String | Name of the client side widget. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| disabled | false | Boolean | If true, disables the component. |
| effect | null | String | Effect to use when showing a group of items. |
| showHeaders | false | Boolean | Displays label of a group at header section of the children items. |
| header | null | String | Label of the root group items. |

Getting started with MultiSelectListbox

MultiSelectListbox needs a collection of SelectItemGroups.

```
public class MultiSelectListboxBean {

    private List<SelectItem> categories;
    private String selection;

    @PostConstruct
    public void init() {
        categories = new ArrayList<SelectItem>();
        SelectItemGroup group1 = new SelectItemGroup("Group 1");
        SelectItemGroup group2 = new SelectItemGroup("Group 2");
        SelectItemGroup group3 = new SelectItemGroup("Group 3");
        SelectItemGroup group4 = new SelectItemGroup("Group 4");

        SelectItemGroup group11 = new SelectItemGroup("Group 1.1");
        SelectItemGroup group12 = new SelectItemGroup("Group 1.2");

        SelectItemGroup group21 = new SelectItemGroup("Group 2.1");

        SelectItem option31 = new SelectItem("Option 3.1", "Option 3.1");
        SelectItem option32 = new SelectItem("Option 3.2", "Option 3.2");
        SelectItem option33 = new SelectItem("Option 3.3", "Option 3.3");
        SelectItem option34 = new SelectItem("Option 3.4", "Option 3.4");

        SelectItem option41 = new SelectItem("Option 4.1", "Option 4.1");

        SelectItem option111 = new SelectItem("Option 1.1.1");
        SelectItem option112 = new SelectItem("Option 1.1.2");
        group11.setSelectItems(new SelectItem[]{option111, option112});

        SelectItem option121 = new SelectItem("Option 1.2.1", "Option 1.2.1");
        SelectItem option122 = new SelectItem("Option 1.2.2", "Option 1.2.2");
        SelectItem option123 = new SelectItem("Option 1.2.3", "Option 1.2.3");
        group12.setSelectItems(new SelectItem[]{option121, option122, option123});

        SelectItem option211 = new SelectItem("Option 2.1.1", "Option 2.1.1");
        group21.setSelectItems(new SelectItem[]{option211});

        group1.setSelectItems(new SelectItem[]{group11, group12});
        group2.setSelectItems(new SelectItem[]{group21});
        group3.setSelectItems(new SelectItem[]{option31, option32, option33,
                                                option34});
        group4.setSelectItems(new SelectItem[]{option41});

        categories.add(group1);
        categories.add(group2);
        categories.add(group3);
        categories.add(group4);
    }

    //getters-setters of categories and selection
}
```

```
<p:multiSelectListbox value="#{multiSelectListboxBean.selection}">
  <f:selectItems value="#{multiSelectListboxBean.categories}" />
</p:multiSelectListbox>
```

Note that `SelectItemGroups` are not selectable, only values of `SelectItems` can be passed to the bean.

Effects

An animation is executed during toggling of a group, following options are available for *effect* attribute; blind, bounce, clip, drop, explode, fold, highlight, puff, pulsate, scale, shake, size, slide (suggested).

Client Side API

Widget: *PrimeFaces.widget.MultiSelectListbox*

| Method | Params | Return Type | Description |
|----------------------------------|-----------------------------|-------------|--------------------------------------|
| <code>enable()</code> | - | void | Enables the component. |
| <code>disable()</code> | - | void | Disables the component. |
| <code>showItemGroup(item)</code> | li element as jQuery object | void | Shows subcategories of a given item. |

Skinning

`MultiSelectListbox` resides in a main container which *style* and *styleClass* attributes apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|------------------------------------------|-------------------------|
| <code>.ui-multiselectlistbox</code> | Main container element. |
| <code>.ui-multiselectlistbox-list</code> | List container. |
| <code>.ui-multiselectlistbox-item</code> | Each item in a list. |

3.86 NotificationBar

NotificationBar displays a multipurpose fixed positioned panel for notification.

Info

| | |
|------------------|-------------------------------------------------------------------------|
| Tag | notificationBar |
| Component Class | org.primefaces.component.notificationbar.NotificationBar |
| Component Type | org.primefaces.component.NotificationBar |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.NotificationBarRenderer |
| Renderer Class | org.primefaces.component.notificationbar.NotificationBarRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| style | null | String | Style of the container element |
| styleClass | null | String | StyleClass of the container element |
| position | top | String | Position of the bar, "top" or "bottom". |
| effect | fade | String | Name of the effect, "fade", "slide" or "none". |
| effectSpeed | normal | String | Speed of the effect, "slow", "normal" or "fast". |
| autoDisplay | false | Boolean | When true, panel is displayed on page load. |
| widgetVar | null | String | Name of the client side widget. |

Getting started with NotificationBar

As notificationBar is a panel component, any content can be placed inside.

```
<p:notificationBar>
  //Content
</p:notificationBar>
```

Showing and Hiding

To show and hide the content, notificationBar provides an easy to use client side api that can be accessed through the widgetVar. *show()* displays the bar and *hide()* hides it. *isVisible()* and *toggle()* are additional client side api methods.

```
<p:notificationBar widgetVar="nv">
  //Content
</p:notificationBar>

<h:outputLink value="#" onclick="PF('nv').show()">Show</h:outputLink>
<h:outputLink value="#" onclick="PF('nv').hide()">Hide</h:outputLink>
```

Note that notificationBar has a default built-in close icon to hide the content.

Effects

Default effect to be used when displaying and hiding the bar is "fade", another possible effect is "slide".

```
<p:notificationBar effect="slide">
  //Content
</p:notificationBar>
```

If you'd like to turn off animation, set effect name to "none". In addition duration of the animation is controlled via effectSpeed attribute that can take "normal", "slow" or "fast" as it's value.

Position

Default position of bar is "top", other possibility is placing the bar at the bottom of the page. Note that bar positioning is fixed so even page is scrolled, bar will not scroll.

```
<p:notificationBar position="bottom">
  //Content
</p:notificationBar>
```

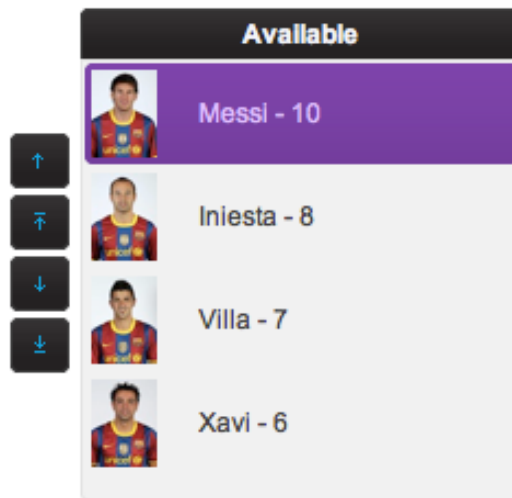
Skinning

style and styleClass attributes apply to the main container element. Additionally there are two pre-defined css selectors used to customize the look and feel.

| Selector | Applies |
|---------------------|------------------------|
| .ui-notificationbar | Main container element |

3.87 OrderList

OrderList is used to sort a collection featuring drag&drop based reordering, transition effects and pojo support.



Info

| | |
|------------------|-------------------------------------------------------------|
| Tag | orderList |
| Component Class | org.primefaces.component.orderlist.OrderList |
| Component Type | org.primefaces.component.OrderList |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.OrderListRenderer |
| Renderer Class | org.primefaces.component.orderlist.OrderListRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | True | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component referring to a List. |
| converter | null | Converter /String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |

| Name | Default | Type | Description |
|---------------------|-------------|-------------|--------------------------------------------------------------------------------------------------------|
| immediate | 0 | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | 0 | Boolean | Marks component as required |
| validator | null | Method Expr | A method expression that refers to a method validating the input |
| valueChangeListener | null | Method Expr | A method expression that refers to a method for handling a valuechangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| var | null | String | Name of the iterator. |
| itemLabel | null | String | Label of an item. |
| itemValue | null | String | Value of an item. |
| style | null | String | Inline style of container element. |
| styleClass | null | String | Style class of container element. |
| disabled | 0 | Boolean | Disables the component. |
| effect | fade | String | Name of animation to display. |
| moveUpLabel | Move Up | String | Label of move up button. |
| moveTopLabel | Move Top | String | Label of move top button. |
| moveDownLabel | Move Down | String | Label of move down button. |
| moveBottomLabel | Move Bottom | String | Label of move bottom button. |
| controlsLocation | left | String | Location of the reorder buttons, valid values are "left", "right" and "none". |
| responsive | false | Boolean | In responsive mode, orderList adjusts itself based on screen width. |

Getting started with OrderList

A list is required to use OrderList component.

```
public class OrderListBean {
    private List<String> cities;

    public OrderListBean() {
        cities = new ArrayList<String>();

        cities.add("Istanbul");
        cities.add("Ankara");
        cities.add("Izmir");
        cities.add("Antalya");
        cities.add("Bursa");
    }

    //getter&setter for cities
}
```

```
<p:orderList value="#{orderListBean.cities}" var="city"
             itemLabel="#{city}" itemValue="#{city}"/>
```

Advanced OrderList

OrderList supports displaying custom content instead of simple labels by using columns. In addition, pojos are supported if a converter is defined.

```
public class OrderListBean {
    private List<Player> players;

    public OrderListBean() {
        players = new ArrayList<Player>();

        players.add(new Player("Messi", 10, "messi.jpg"));
        players.add(new Player("Iniesta", 8, "iniesta.jpg"));
        players.add(new Player("Villa", 7, "villa.jpg"));
        players.add(new Player("Xavi", 6, "xavi.jpg"));
    }

    //getter&setter for players
}
```

```

<p:orderList value="#{orderListBean.players}" var="player" itemValue="#{player}"
  converter="player">
  <p:column style="width:25%">
    <p:graphicImage value="/images/barca/#{player.photo}" />
  </p:column>
  <p:column style="width:75%;">
    #{player.name} - #{player.number}
  </p:column>
</p:orderList>

```

Ajax Behavior Events

| Event | Listener Parameter | Fired |
|----------|-------------------------------------|--------------------------|
| select | org.primefaces.event.SelectEvent | When an item selected. |
| unselect | org.primefaces.event.UnselectEvent | When an item unselected. |
| reorder | javax.faces.event.AjaxBehaviorEvent | When list is reordered. |

Header

A facet called “caption” is provided to display a header content for the orderlist.

Effects

An animation is executed during reordering, default effect is fade and following options are available for *effect* attribute; blind, bounce, clip, drop, explode, fold, highlight, puff, pulsate, scale, shake, size and slide.

Skinning

OrderList resides in a main container which *style* and *styleClass* attributes apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|-----------------------|-------------------------|
| .ui-orderlist | Main container element. |
| .ui-orderlist-list | Container of items. |
| .ui-orderlist-item | Each item in the list. |
| .ui-orderlist-caption | Caption of the list. |

3.88 OutputLabel

OutputLabel is an extension to the standard outputLabel component.

Info

| | |
|------------------|-----------------------------------------------------------------|
| Tag | outputLabel |
| Component Class | org.primefaces.component.outputlabel.OutputLabel |
| Component Type | org.primefaces.component.OutputLabel |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.OutputLabelRenderer |
| Renderer Class | org.primefaces.component.outputlabel.OutputLabelRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|---------|----------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | String | Label to display. |
| accesskey | null | String | The accesskey attribute is a standard HTML attribute that sets the access key that transfers focus to this element when pressed. |
| dir | null | String | Direction indication for text that does not inherit directionality. Valid values are LTR and RTL. |
| escape | true | Boolean | Defines if value should be escaped or not. |
| for | null | String | Component to attach the label to. |

| Name | Default | Type | Description |
|------------------|---------|---------|------------------------------------------------------------------------------------|
| tabindex | null | String | Position in tabbing order. |
| title | null | String | Advisory tooltip information. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| onblur | null | String | Client side callback to execute when component loses focus. |
| onclick | null | String | Client side callback to execute when component is clicked. |
| ondblclick | null | String | Client side callback to execute when component is double clicked. |
| onfocus | null | String | Client side callback to execute when component receives focus. |
| onkeydown | null | String | Client side callback to execute when a key is pressed down over component. |
| onkeypress | null | String | Client side callback to execute when a key is pressed and released over component. |
| onkeyup | null | String | Client side callback to execute when a key is released over component. |
| onmousedown | null | String | Client side callback to execute when a pointer is pressed down over component. |
| onmouseout | null | String | Client side callback to execute when a pointer is moved away from component. |
| onmouseover | null | String | Client side callback to execute when a pointer is moved onto component. |
| onmouseup | null | String | Client side callback to execute when a pointer is released over component. |
| indicateRequired | true | Boolean | Displays * symbol if the input is required. |

Getting Started with OutputLabel

Usage is same as standard outputLabel, an input component is associated with for attribute.

```
<p:outputLabel for="input" value="Label" />
<p:inputText id="input" value="#{bean.text}" />
```


Auto Label

OutputLabel sets its value as the label of the target component to be displayed in validation errors so the target component does not need to define the label attribute again.

```
<h:outputLabel for="input" value="Field" />
<p:inputText id="input" value="#{bean.text}" label="Field"/>
```

can be rewritten as;

```
<p:outputLabel for="input" value="Field" />
<p:inputText id="input" value="#{bean.text}" />
```

Support for Advanced Components

Some PrimeFaces input components like spinner, autocomplete does not render just basic inputs so standard outputLabel component cannot apply focus to these, however PrimeFaces outputLabel can.

```
<h:outputLabel for="input" value="Can't apply focus" />
<p:outputLabel for="input" value="Can apply focus" />

<p:spinner id="input" value="#{bean.text}" />
```

Validations

When the target input is required, outputLabel displays * symbol next to the value. In case any validation fails on target input, label will also be displayed with theme aware error styles.

Skinning

Label renders a label element that *style* and *styleClass* attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|---------------------|-------------------------------------|
| .ui-outputlabel | Label element |
| .ui-state-error | Label element when input is invalid |
| .ui-outputlabel-rfi | Required field indicator. |

3.89 OutputPanel

OutputPanel is a panel component with the ability to auto update.

Info

| | |
|------------------|------------------------------------------------------------|
| Tag | outputPanel |
| Component Class | org.primefaces.component.outputpanel.OutputPanel |
| Component Type | org.primefaces.component.OutputPanel |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.OutputPanelRenderer |
| Renderer Class | org.primefaces.component.output.OutputPanelRenderer |

Attributes

| Name | Default | Type | Description |
|--------------|---------|---------|-------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| style | null | String | Style of the html container element |
| styleClass | null | String | StyleClass of the html container element |
| layout | block | String | Shortcut for the css display property, valid values are block (default) and inline. |
| autoUpdate | false | Boolean | Enables auto update mode if set true. |
| deferred | false | Boolean | Deferred mode loads the contents after page load to speed up page load. |
| deferredMode | load | String | Defines deferred loading mode, valid values are "load" (after page load) and "visible" (once the panel is visible on scroll). |
| global | false | Boolean | Global ajax requests are listened by ajaxStatus component, setting global to false will not trigger ajaxStatus on deferred loading. |
| delay | none | String | Delay in milliseconds to wait before initiating a deferred loading, default value is "none". |

Placeholder

When a JSF component is not rendered, no markup is rendered so for components with conditional rendering, regular update mechanism may not work since the markup to update on page does not exist. `OutputPanel` is useful in this case to be used as a placeholder.

Suppose the rendered condition on bean is false when page is loaded initially and search method on bean sets the condition to be true meaning datatable will be rendered after a page submit. The problem is although partial output is generated, the markup on page cannot be updated since it doesn't exist.

```
<p:dataTable id="tbl" rendered="#{bean.condition}" ...>
  //columns
</p:dataTable>

<p:commandButton update="tbl" actionListener="#{bean.search}" />
```

Solution is to use the `outputPanel` as a placeholder.

```
<p:outputPanel id="out">
  <p:dataTable id="tbl" rendered="#{bean.condition}" ...>
    //columns
  </p:dataTable>
</p:outputPanel>

<p:commandButton update="out" actionListener="#{bean.list}" />
```

Note that you won't need an `outputPanel` if `commandButton` has no `update` attribute specified, in this case parent form will be updated partially implicitly making an `outputPanel` use obsolete.

Deferred Loading

When this feature option is enabled, content of panel is not loaded along with the page but loaded after the page on demand. Initially panel displays a loading animation after page load to indicate more content is coming up and displays content with ajax update. Using *deferredMode* option, it is possible to load contents not just after page load (default mode) but when it becomes visible on page scroll as well. This feature is very useful to increase page load performance, assume you have one part of the page that has components dealing with backend and taking time, with deferred mode on, rest of the page is loaded instantly and time taking process is loaded afterwards with ajax.

Layout

`OutputPanel` has two layout modes;

- block (default): Renders a div
- inline: Renders a span

AutoUpdate

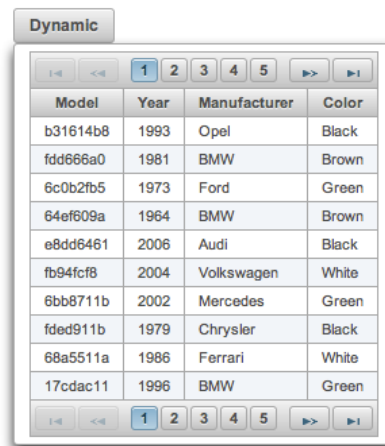
When auto update is enabled, `outputPanel` component is updated with each ajax request automatically.

Skinning

style and *styleClass* attributes are used to style the `outputPanel`, by default *.ui-outputpanel* css class is added to element and *.ui-outputpanel-loading* when content is loading in deferred loading case.

3.90 OverlayPanel

OverlayPanel is a generic panel component that can be displayed on top of other content.



Info

| | |
|------------------|-------------------------------------------------------------------|
| Tag | overlayPanel |
| Component Class | org.primefaces.component.overlaypanel.OverlayPanelRenderer |
| Component Type | org.primefaces.component.OverlayPanel |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.OverlayPanelRenderer |
| Renderer Class | org.primefaces.component.overlaypanel.OverlayPanelRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| style | null | String | Inline style of the panel. |
| styleClass | null | String | Style class of the panel. |
| for | null | String | Target component to display panel next to. |
| showEvent | click | String | Event on target to show the panel. |

| Name | Default | Type | Description |
|---------------|-------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| hideEvent | click | String | Event on target to hide the panel. |
| showEffect | null | String | Animation to display when showing the panel. |
| hideEffect | null | String | Animation to display when hiding the panel. |
| appendToBody | 0 | Boolean | When true, panel is appended to document body. |
| onShow | null | String | Client side callback to execute when panel is shown. |
| onHide | null | String | Client side callback to execute when panel is hidden. |
| my | left top | String | Position of the panel relative to the target. |
| at | left bottom | String | Position of the target relative to the panel. |
| dynamic | false | Boolean | Defines content loading mode. |
| dismissable | true | Boolean | When set true, clicking outside of the panel hides the overlay. |
| showCloseIcon | false | Boolean | Displays a close icon to hide the overlay, default is false. |
| modal | false | Boolean | Boolean value that specifies whether the document should be shielded with a partially transparent mask to require the user to close the Panel before being able to activate any elements in the document. |

Getting started with OverlayPanel

OverlayPanel needs a component as a target in addition to the content to display. Example below demonstrates an overlayPanel attached to a button to show a chart in a popup.

```
<p:commandButton id="chartBtn" value="Basic" type="button" />
<p:overlayPanel for="chartBtn">
  <p:pieChart value="#{chartBean.pieModel}" legendPosition="w"
    title="Sample Pie Chart" style="width:400px;height:300px" />
</p:overlayPanel>
```

Events

Default event on target to show and hide the panel is mousedown. These are customized using *showEvent* and *hideEvent* options.

```
<p:commandButton id="chartBtn" value="Basic" type="button" />
<p:overlayPanel showEvent="mouseover" hideEvent="mousedown">
  //content
</p:overlayPanel>
```

Effects

blind, bounce, clip, drop, explode, fold, highlight, puff, pulsate, scale, shake, size, slide are available values for *showEffect* and *hideEffect* options if you'd like display animations.

Positioning

By default, left top corner of panel is aligned to left bottom corner of the target if there is enough space in window viewport, if not the position is flipped on the fly to find the best location to display. In order to customize the position use *my* and *at* options that takes combinations of left, right, bottom and top e.g. "right bottom".

Dynamic Mode

Dynamic mode enables lazy loading of the content, in this mode content of the panel is not rendered on page load and loaded just before panel is shown. Also content is cached so consecutive displays do not load the content again. This feature is useful to reduce the page size and reduce page load time.

Standalone

OverlayPanel is positioned relative to its target based on a one-to-one relationship, this causes limitations when used inside a data iteration because every row needs an overlaypanel which is far from ideal, requires client side memory and slows down page performance. Instead a single overlayPanel can be used by calling show passing the client id of the component to be relatively positioned. See [overlayPanel demo](#) in showcase for an example.

Skinning

Panel resides in a main container which *style* and *styleClass* attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|------------------|---------------------------------|
| .ui-overlaypanel | Main container element of panel |

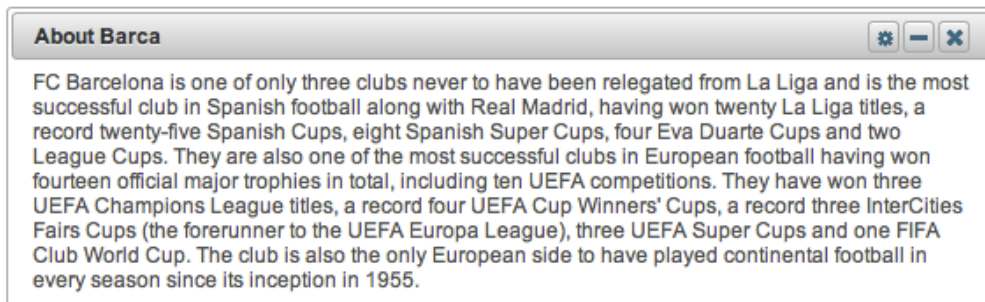
As skinning style classes are global, see the main theming section for more information.

Tips

- Enable *appendToBody* when overlayPanel is in other panel components like layout, dialog ...
- If there is a component with a popup like calendar, autocomplete placed inside the overlay panel, popup part might exceed the boundaries of panel and clicking the outside hides the panel. This is undesirable so in cases like this use overlayPanel with *dismissable* false and optional *showCloseIcon* settings.

3.91 Panel

Panel is a grouping component with content toggle, close and menu integration.



Info

| | |
|------------------|-----------------------------------------------------|
| Tag | panel |
| Component Class | org.primefaces.component.panel.Panel |
| Component Type | org.primefaces.component.Panel |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.PanelRenderer |
| Renderer Class | org.primefaces.component.panel.PanelRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| header | null | String | Header text |
| footer | null | String | Footer text |
| toggleable | false | Boolean | Makes panel toggleable. |
| toggleSpeed | 1000 | Integer | Speed of toggling in milliseconds |
| collapsed | false | Boolean | Renders a toggleable panel as collapsed. |
| style | null | String | Style of the panel |
| styleClass | null | String | Style class of the panel |

| Name | Default | Type | Description |
|-------------------|----------|---------|------------------------------------------------------------------------------------|
| closable | false | Boolean | Make panel closable. |
| closeSpeed | 1000 | Integer | Speed of closing effect in milliseconds |
| visible | true | Boolean | Renders panel as visible. |
| closeTitle | null | String | Tooltip for the close button. |
| toggleTitle | null | String | Tooltip for the toggle button. |
| menuTitle | null | String | Tooltip for the menu button. |
| toggleOrientation | vertical | String | Defines the orientation of the toggling, valid values are vertical and horizontal. |
| widgetVar | null | String | Name of the client side widget |

Getting started with Panel

Panel encapsulates other components.

```
<p:panel>
  //Child components here...
</p:panel>
```

Header and Footer

Header and Footer texts can be provided by *header* and *footer* attributes or the corresponding facets. When same attribute and facet name are used, facet will be used.

```
<p:panel header="Header Text">
  <f:facet name="footer">
    <h:outputText value="Footer Text" />
  </f:facet>

  //Child components here...
</p:panel>
```

Ajax Behavior Events

Panel provides custom ajax behavior events for toggling and closing features.

| Event | Listener Parameter | Fired |
|--------|----------------------------------|--------------------------------------|
| toggle | org.primefaces.event.ToggleEvent | When panel is expanded or collapsed. |
| close | org.primefaces.event.CloseEvent | When panel is closed. |

Popup Menu

Panel has built-in support to display a fully customizable popup menu, an icon to display the menu is placed at top-right corner. This feature is enabled by defining a menu component and defining it as the options facet.

```
<p:panel closable="true">
  //Child components here...

  <f:facet name="options">
    <p:menu>
      //Menuitems
    </p:menu>
  </f:facet>
</p:panel>
```

Custom Action

If you'd like to add custom actions to panel titlebar, use actions facet with icon markup;

```
<p:panel>
  <f:facet name="actions">
    <h:commandLink styleClass="ui-panel-titlebar-icon
      ui-corner-all ui-state-default">
      <h:outputText styleClass="ui-icon ui-icon-help" />
    </h:commandLink>
  </f:facet>
  //content
</p:panel>
```

Skinning Panel

Panel resides in a main container which *style* and *styleClass* attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|-------------------------|---------------------------------|
| .ui-panel | Main container element of panel |
| .ui-panel-titlebar | Header container |
| .ui-panel-title | Header text |
| .ui-panel-titlebar-icon | Option icon in header |
| .ui-panel-content | Panel content |
| .ui-panel-footer | Panel footer |

As skinning style classes are global, see the main theming section for more information.

3.92 PanelGrid

PanelGrid is an extension to the standard panelGrid component with additional features such as theming and colspan-rowspan.

| 1995-96 NBA Playoffs | | | | | | |
|----------------------|---|--------------|---|--------------------------|---|----------|
| Conf. Semifinals | | Conf. Finals | | NBA Finals | | Champion |
| Seattle | 4 | Seattle | 4 | Seattle | 2 | Chicago |
| Houston | 0 | | | | | |
| Utah | 4 | Utah | 3 | | | |
| San Antonio | 2 | | | | | |
| Chicago | 4 | Chicago | 4 | Chicago | 4 | |
| New York | 1 | | | | | |
| Atlanta | 1 | Orlando | 0 | | | |
| Orlando | 4 | | | | | |
| Finals MVP | | | | Michael Jordan (Chicago) | | |
| Season MVP | | | | | | |
| Top Scorer | | | | | | |

Info

| | |
|------------------|-------------------------------------------------------------|
| Tag | panelGrid |
| Component Class | org.primefaces.component.panelgrid.PanelGridRenderer |
| Component Type | org.primefaces.component.PanelGrid |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.PanelGridRenderer |
| Renderer Class | org.primefaces.component.panelgrid.PanelGridRenderer |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| columns | false | Integer | Number of columns in grid. |

| Name | Default | Type | Description |
|---------------|---------|--------|---------------------------------------------------------------------------------------------|
| style | null | String | Inline style of the panel. |
| styleClass | null | String | Style class of the panel. |
| columnClasses | null | String | Comma separated list of column style classes. |
| layout | tabular | String | Displays data in a 'table' layout or 'grid' layout. The grid layout is a responsive layout. |
| role | grid | String | Role for aria. |

Getting started with PanelGrid

Basic usage of panelGrid is same as the standard one.

```
<p:panelGrid columns="2">
  <h:outputLabel for="firstname" value="Firstname:" />
  <p:inputText id="firstname" value="#{bean.firstname}" label="Firstname" />

  <h:outputLabel for="surname" value="Surname:" />
  <p:inputText id="surname" value="#{bean.surname}" label="Surname"/>
</p:panelGrid>
```

Header and Footer

PanelGrid provides facets for header and footer content.

```
<p:panelGrid columns="2">
  <f:facet name="header">
    Basic PanelGrid
  </f:facet>

  <h:outputLabel for="firstname" value="Firstname: *" />
  <p:inputText id="firstname" value="#{bean.firstname}" label="Firstname" />

  <h:outputLabel for="surname" value="Surname: *" />
  <p:inputText id="surname" value="#{bean.surname}" label="Surname"/>

  <f:facet name="footer">
    <p:commandButton type="button" value="Save" icon="ui-icon-check" />
  </f:facet>
</p:panelGrid>
```

Rowspan and Colspan

PanelGrid supports rowspan and colspan options as well, in this case row and column markup should be defined manually.

```
<p:panelGrid>
  <p:row>
    <p:column rowspan="3">AAA</p:column>
    <p:column colspan="4">BBB</p:column>
  </p:row>

  <p:row>
    <p:column colspan="2">CCC</p:column>
    <p:column colspan="2">DDD</p:column>
  </p:row>

  <p:row>
    <p:column>EEE</p:column>
    <p:column>FFF</p:column>
    <p:column>GGG</p:column>
    <p:column>HHH</p:column>
  </p:row>
</p:panelGrid>
```

* Note that this approach does not support grid layout.

Blank Mode

To remove borders add `ui-noborder` style class to the component using `styleClass` attribute and to remove borders plus background color, apply `ui-panelgrid-blank` style.

Skinning

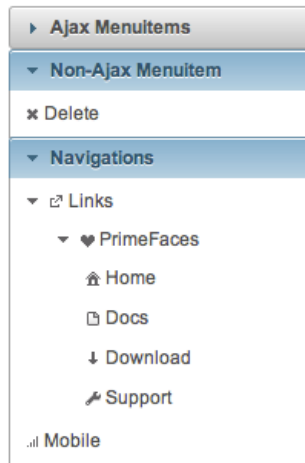
PanelGrid resides in a main container which `style` and `styleClass` attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|-----------------------------------|--------------------------------------|
| <code>.ui-panelgrid</code> | Main container element of panelGrid. |
| <code>.ui-panelgrid-header</code> | Header. |
| <code>.ui-panelgrid-footer</code> | Footer. |
| <code>.ui-panelgrid-even</code> | Even numbered rows. |
| <code>.ui-panelgrid-odd</code> | Odd numbered rows. |

As skinning style classes are global, see the main theming section for more information.

3.93 PanelMenu

PanelMenu is a hybrid component of accordionPanel and tree components.



Info

| | |
|------------------|-------------------------------------------------------------|
| Tag | panelMenu |
| Component Class | org.primefaces.component.panelmenu.PanelMenu |
| Component Type | org.primefaces.component.PanelMenu |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.PanelMenuRenderer |
| Renderer Class | org.primefaces.component.panelmenu.PanelMenuRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|-----------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| model | null | MenuModel | MenuModel instance to build menu dynamically. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| widgetVar | null | String | Name of the client side widget. |
| stateful | true | Boolean | Menu state is saved in a cookie |

Getting started with PanelMenu

PanelMenu consists of submenus and menuitems. First level of submenus are rendered as accordion panels and descendant submenus are rendered as tree nodes. Just like in any other menu component, menuitems can be utilized to do ajax requests, non-ajax requests and simple GET navigations.

```
<p:panelMenu style="width:200px">
  <p:submenu label="Ajax Menuitems">
    <p:menuitem value="Save" actionListener="#{buttonBean.save}" />
    <p:menuitem value="Update" actionListener="#{buttonBean.update}" />
  </p:submenu>

  <p:submenu label="Non-Ajax Menuitem">
    <p:menuitem value="Delete" actionListener="#{buttonBean.delete}"
      ajax="false"/>
  </p:submenu>

  <p:submenu label="Navigations" >
    <p:submenu label="Links" icon="ui-icon-extlink">
      <p:submenu label="PrimeFaces" icon="ui-icon-heart">
        <p:menuitem value="Home" url="http://www.primefaces.org" />
        <p:menuitem value="Docs" url="http://www.primefaces.org/..." />
        <p:menuitem value="Support" url="http://www.primefaces.org/..." />
      </p:submenu>
    </p:submenu>
    <p:menuitem value="Mobile" outcome="/mobile/index" />
  </p:submenu>
</p:panelMenu>
```

Default State

By default, all submenus are collapsed, set expanded on a submenu to true to initially display a submenu as expanded.

Skinning

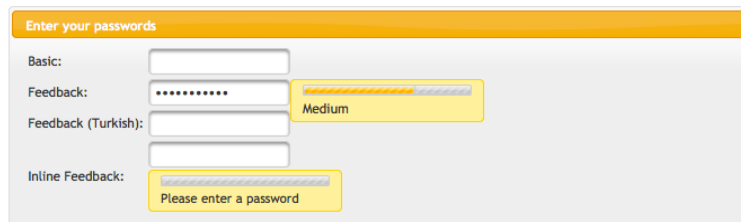
PanelMenu resides in a main container which *style* and *styleClass* attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|-----------------------------|-------------------------|
| .ui-panelmenu | Main container element. |
| .ui-panelmenu-header | Header of a panel. |
| .ui-panelmenu-content | Footer of a panel. |
| .ui-panelmenu .ui-menu-list | Tree container. |
| .ui-panelmenu .ui-menuitem | A menuitem in tree. |

As skinning style classes are global, see the main theming section for more information.

3.94 Password

Password component is an extended version of standard `inputSecret` component with theme integration and strength indicator.



Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | password |
| Component Class | org.primefaces.component.password.Password |
| Component Type | org.primefaces.component.Password |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.PasswordRenderer |
| Renderer Class | org.primefaces.component.password.PasswordRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side <code>UIComponent</code> instance in a backing bean |
| value | null | Object | Value of the component than can be either an EL expression of a literal text |
| converter | null | Converter /String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | boolean | Marks component as required |
| validator | null | Method Expr | A method expression that refers to a method validationg the input. |

| Name | Default | Type | Description |
|---------------------|-------------------------|-------------|---------------------------------------------------------------------------------------------------------------------|
| valueChangeListener | null | Method Expr | A method binding expression that refers to a method for handling a valuechangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| feedback | false | Boolean | Enables strength indicator. |
| inline | false | boolean | Displays feedback inline rather than using a popup. |
| promptLabel | Please enter a password | String | Label of prompt. |
| weakLabel | Weak | String | Label of weak password. |
| goodLabel | Good | String | Label of good password. |
| strongLabel | Strong | String | Label of strong password. |
| redisplay | false | Boolean | Whether or not to display previous value. |
| match | null | String | Id of another password component to match value against. |
| widgetVar | null | String | Name of the client side widget. |
| accesskey | null | String | Access key that when pressed transfers focus to the input element. |
| alt | null | String | Alternate textual description of the input field. |
| autocomplete | null | String | Controls browser autocomplete behavior. |
| dir | null | String | Direction indication for text that does not inherit directionality. Valid values are LTR and RTL. |
| disabled | false | Boolean | Disables input field |
| label | null | String | A localized user presentable name. |
| lang | null | String | Code describing the language used in the generated markup for this component. |
| maxlength | null | Integer | Maximum number of characters that may be entered in this field. |
| onblur | null | String | Client side callback to execute when input element loses focus. |
| onchange | null | String | Client side callback to execute when input element loses focus and its value has been modified since gaining focus. |
| onclick | null | String | Client side callback to execute when input element is clicked. |

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------|
| ondblclick | null | String | Client side callback to execute when input element is double clicked. |
| onfocus | null | String | Client side callback to execute when input element receives focus. |
| onkeydown | null | String | Client side callback to execute when a key is pressed down over input element. |
| onkeypress | null | String | Client side callback to execute when a key is pressed and released over input element. |
| onkeyup | null | String | Client side callback to execute when a key is released over input element. |
| onmousedown | null | String | Client side callback to execute when a pointer button is pressed down over input element |
| onmousemove | null | String | Client side callback to execute when a pointer button is moved within input element. |
| onmouseout | null | String | Client side callback to execute when a pointer button is moved away from input element. |
| onmouseover | null | String | Client side callback to execute when a pointer button is moved onto input element. |
| onmouseup | null | String | Client side callback to execute when a pointer button is released over input element. |
| onselect | null | String | Client side callback to execute when text within input element is selected by user. |
| placeholder | null | String | Specifies a short hint. |
| readonly | false | Boolean | Flag indicating that this component will prevent changes by the user. |
| size | null | Integer | Number of characters used to determine the width of the input element. |
| style | null | String | Inline style of the input element. |
| styleClass | null | String | Style class of the input element. |
| tabindex | null | Integer | Position of the input element in the tabbing order. |
| title | null | String | Advisory tooltip informaton. |

Getting Started with Password

Password is an input component and used just like a standard input text. When *feedback* option is enabled a password strength indicator is displayed.

```
<p:password value="#{bean.password}" feedback="true|false" />
```

```
public class Bean {
    private String password;

    public String getPassword() { return password; }
    public void setPassword(String password) { this.password = password;}
}
```

I18N

Although all labels are in English by default, you can provide custom labels as well. Following password gives feedback in Turkish.

```
<p:password value="#{bean.password}" promptLabel="Lütfen şifre giriniz"
weakLabel="Zayıf" goodLabel="Orta seviye" strongLabel="Güçlü" feedback= "true"/>
```

Inline Strength Indicator

By default strength indicator is shown in an overlay, if you prefer an inline indicator just enable inline mode.

```
<p:password value="#{mybean.password}" inline="true" feedback= "true"/>
```

Confirmation

Password confirmation is a common case and password provides an easy way to implement. The other password component's id should be used to define the *match* option.

```
<p:password id="pwd1" value="#{passwordBean.password6}" feedback="false"
    match="pwd2" label="Password 1" required="true"/>

<p:password id="pwd2" value="#{passwordBean.password6}" feedback="false"
    label="Password 2" required="true"/>
```

Skinning

Structural selectors for password are;

| Name | Applies |
|--------------------|--------------------------------------|
| .ui-password | Input element. |
| .ui-password-panel | Overlay panel of strength indicator. |
| .ui-password-meter | Strength meter. |
| .ui-password-info | Strength label. |

As skinning style classes are global, see the main theming section for more information.

3.95 PhotoCam

PhotoCam is used to take photos with webcam and send them to the JSF backend model.

Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | photoCam |
| Component Class | org.primefaces.component.photocam.PhotoCam |
| Component Type | org.primefaces.component.PhotoCam |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.PhotoCamRenderer |
| Renderer Class | org.primefaces.component.photocam.PhotoCamRenderer |

Attributes

| Name | Default | Type | Description |
|---------------------|---------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | false | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component than can be either an EL expression of a literal text |
| converter | null | Converter/ String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | 0 | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | 0 | boolean | Marks component as required |
| validator | null | Method Expr | A method binding expression that refers to a method validating the input |
| valueChangeListener | null | Method Expr | A method binding expression that refers to a method for handling a valuechangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |

| Name | Default | Type | Description |
|-------------|---------|-------------|--------------------------------------------------------------------------------------|
| widgetVar | null | String | Name of the client side widget. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| process | null | String | Identifiers of components to process during capture. |
| update | null | String | Identifiers of components to update during capture. |
| listener | null | Method Expr | Method expression to listen to capture events. |
| width | 320 | Integer | Width of the camera viewport. |
| height | 240 | Integer | Height of the camera viewport. |
| photoWidth | 320 | Integer | Width of the captured photo, defaults to width. |
| photoHeight | 240 | Integer | Height of the captured photo, defaults to height. |
| format | jpeg | Boolean | Format of the image, valid values are "jpeg" default and png. |
| jpegQuality | 90 | Integer | Quality of the image between 0 and 100 when the format is jpeg, default value is 90. |
| forceFlash | false | Boolean | Enables always using flash fallback even in an HTML5 environment. |

Getting started with PhotoCam

Capture is triggered via client side api's *capture* method. Also a method expression is necessary to invoke when an image is captured. Sample below captures an image and saves it to a directory.

```
<h:form>
  <p:photoCam widgetVar="pc" listener="#{photoCamBean.oncapture}" update="photos"/>
  <p:commandButton type="button" value="Capture" onclick="PF('pc').capture()"/>
</h:form>
```

```
public class PhotoCamBean {

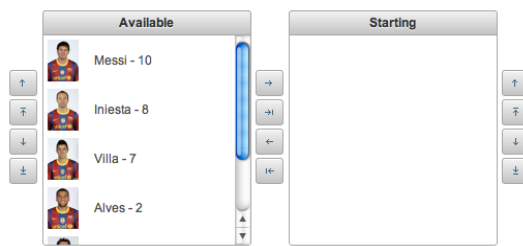
    public void oncapture(CaptureEvent captureEvent) {
        byte[] data = captureEvent.getData();

        ServletContext servletContext = (ServletContext)
FacesContext.getCurrentInstance().getExternalContext().getContext();
        String newFileName = servletContext.getRealPath("/") + File.separator +
"photocam" + File.separator + "captured.png";

        FileOutputStream imageOutput;
        try {
            imageOutput = new FileOutputStream(new File(newFileName));
            imageOutput.write(data, 0, data.length);
            imageOutput.close();
        }
        catch(Exception e) {
            throw new FacesException("Error in writing captured image.");
        }
    }
}
```

3.96 PickList

PickList is used for transferring data between two different collections.



Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | pickList |
| Component Class | org.primefaces.component.picklist.Panel |
| Component Type | org.primefaces.component.PickList |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.PickListRenderer |
| Renderer Class | org.primefaces.component.picklist.PickListRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component than can be either an EL expression of a literal text |
| converter | null | Converter/ String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |
| validator | null | Method Expr | A method binding expression that refers to a method validating the input |

| Name | Default | Type | Description |
|---------------------|-------------|-------------|---------------------------------------------------------------------------------------|
| valueChangeListener | null | Method Expr | A method binding expression that refers to a method for handling a valuchangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| var | null | String | Name of the iterator. |
| itemLabel | null | String | Label of an item. |
| itemValue | null | Object | Value of an item. |
| style | null | String | Style of the main container. |
| styleClass | null | String | Style class of the main container. |
| widgetVar | null | String | Name of the client side widget. |
| disabled | false | Boolean | Disables the component. |
| effect | null | String | Name of the animation to display. |
| effectSpeed | null | String | Speed of the animation. |
| addLabel | Add | String | Title of add button. |
| addAllLabel | Add All | String | Title of add all button. |
| removeLabel | Remove | String | Title of remove button. |
| removeAllLabel | Remove All | String | Title of remove all button. |
| moveUpLabel | Move Up | String | Title of move up button. |
| moveTopLabel | Move Top | String | Title of move top button. |
| moveDownLabel | Move Down | String | Title of move down button. |
| moveButtomLabel | Move Buttom | String | Title of move bottom button. |
| showSourceControls | false | String | Specifies visibility of reorder buttons of source list. |
| showTargetControls | false | String | Specifies visibility of reorder buttons of target list. |
| onTransfer | null | String | Client side callback to execute when an item is transferred from one list to another. |
| label | null | String | A localized user presentable name. |
| itemDisabled | false | Boolean | Specified if an item can be picked or not. |
| showSourceFilter | false | Boolean | Displays and input filter for source list. |
| showTargetFilter | false | Boolean | Displays and input filter for target list. |

| Name | Default | Type | Description |
|-----------------|------------|---------|---------------------------------------------------------------------------------------------|
| filterMatchMode | startsWith | String | Match mode for filtering, valid values are startsWith, contains, endsWith and custom. |
| filterFunction | null | String | Name of the javascript function for custom filtering. |
| showCheckbox | false | Boolean | When true, a checkbox is displayed next to each item. |
| labelDisplay | tooltip | String | Defines how the button labels displayed, valid values are "tooltip" (default) and "inline". |
| orientation | horizontal | String | Defines layout orientation, valid values are "vertical" and "horizontal". |
| responsive | false | Boolean | In responsive mode, picklist adjusts itself based on screen width. |

Getting started with PickList

You need to create custom model called *org.primefaces.model.DualListModel* to use PickList. As the name suggests it consists of two lists, one is the source list and the other is the target. As the first example we'll create a DualListModel that contains basic Strings.

```
public class PickListBean {

    private DualListModel<String> cities;

    public PickListBean() {
        List<String> source = new ArrayList<String>();
        List<String> target = new ArrayList<String>();

        citiesSource.add("Istanbul");
        citiesSource.add("Ankara");
        citiesSource.add("Izmir");
        citiesSource.add("Antalya");
        citiesSource.add("Bursa");

        //more cities

        cities = new DualListModel<String>(citiesSource, citiesTarget);
    }

    public DualListModel<String> getCities() {
        return cities;
    }

    public void setCities(DualListModel<String> cities) {
        this.cities = cities;
    }
}
```

And bind the cities dual list to the picklist;


```
<p:pickList value="#{pickListBean.cities}" var="city"
            itemLabel="#{city}" itemValue="#{city}">
```

When the enclosed form is submitted, the dual list reference is populated with the new values and you can access these values with `DualListModel.getSource()` and `DualListModel.getTarget()` api.

POJOs

Most of the time you would deal with complex pojos rather than simple types like String. This use case is no different except the addition of a converter. Following pickList displays a list of players(name, age ...).

```
<p:pickList value="#{pickListBean.players}" var="player"
            itemLabel="#{player.name}" itemValue="#{player}" converter="player">
```

PlayerConverter in this case should implement `javax.faces.convert.Converter` contract and implement `getAsString`, `getAsObject` methods. Note that a converter is always necessary for primitive types like long, integer, boolean as well.

In addition custom content instead of simple strings can be displayed by using columns.

```
<p:pickList value="#{pickListBean.players}"
            var="player" iconOnly="true" effect="bounce"
            itemValue="#{player}" converter="player"
            showSourceControls="true" showTargetControls="true">
  <p:column style="width:25%">
    <p:graphicImage value="/images/barca/#{player.photo}"/>
  </p:column>
  <p:column style="width:75%">
    #{player.name} - #{player.number}
  </p:column>
</p:pickList>
```

Reordering

PickList support reordering of source and target lists, these are enabled by `showSourceControls` and `showTargetControls` options.

Effects

An animation is displayed when transferring when item to another or reordering a list, default effect is fade and following options are available to be applied using `effect` attribute; blind, bounce, clip, drop, explode, fold, highlight, puff, pulsate, scale, shake, size and slide. `effectSpeed` attribute is used to customize the animation speed, valid values are *slow*, *normal* and *fast*.

Captions

Caption texts for lists are defined with facets named `sourceCaption` and `targetCaption`;

```
<p:pickList value="#{pickListBean.cities}" var="city"
            itemLabel="#{city}" itemValue="#{city}" onTransfer="handleTransfer(e)">
    <f:facet name="sourceCaption">Available</f:facet>
    <f:facet name="targetCaption">Selected</f:facet>
</p:pickList>
```

Filtering

PickList provides built-in client side filtering. Filtering is enabled by setting the corresponding filtering attribute of a list. For source list this is *showSourceFilter* and for target list it is *showTargetFilter*. Default match mode is *startsWith* and *contains*, *endsWith* are also available options.

When you need to a custom match mode set *filterMatchMode* to *custom* and write a javascript function that takes *itemLabel* and *filterValue* as parameters. Return *false* to hide an item and *true* to display.

```
<p:pickList value="#{pickListBean.cities}" var="city"
            itemLabel="#{city}" itemValue="#{city}"
            showSourceFilter="true" showTargetFilter="true"
            filterMatchMode="custom" filterFunction="myfilter">
</p:pickList>
```

```
function myfilter(itemLabel, filterValue) {
    //return true or false
}
```

onTransfer

If you'd like to execute custom javascript when an item is transferred, bind your javascript function to *onTransfer* attribute.

```
<p:pickList value="#{pickListBean.cities}" var="city"
            itemLabel="#{city}" itemValue="#{city}" onTransfer="handleTransfer(e)">
```

```
<script type="text/javascript">
    function handleTransfer(e) {
        //item = e.item
        //fromList = e.from
        //toList = e.toList
        //type = e.type (type of transfer; command, dblclick or dragdrop)
    }
</script>
```

Ajax Behavior Events

| Event | Listener Parameter | Fired |
|----------|------------------------------------|--------------------------|
| select | org.primefaces.event.SelectEvent | When an item selected. |
| unselect | org.primefaces.event.UnselectEvent | When an item unselected. |

| Event | Listener Parameter | Fired |
|----------|-------------------------------------|----------------------------------------|
| reorder | javax.faces.event.AjaxBehaviorEvent | When list is reordered. |
| transfer | Org.primefaces.event.TransferEvent | When an item is moved to another list. |

```
<p:pickList value="#{pickListBean.cities}" var="city"
            itemLabel="#{city}" itemValue="#{city}">
    <p:ajax event="transfer" listener="#{pickListBean.handleTransfer}" />
</p:pickList>
```

```
public class PickListBean {

    //DualListModel code

    public void handleTransfer(TransferEvent event) {
        //event.getItems() : List of items transferred
        //event.isAdd() : Is transfer from source to target
        //event.isRemove() : Is transfer from target to source
    }
}
```

Skinning

PickList resides in a main container which *style* and *styleClass* attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|---------------------------------|------------------------------------------------------|
| .ui-picklist | Main container element(table) of picklist |
| .ui-picklist-list | Lists of a picklist |
| .ui-picklist-list-source | Source list |
| .ui-picklist-list-target | Target list |
| .ui-picklist-source-controls | Container element of source list reordering controls |
| .ui-picklist-target-controls | Container element of target list reordering controls |
| .ui-picklist-button | Buttons of a picklist |
| .ui-picklist-button-move-up | Move up button |
| .ui-picklist-button-move-top | Move top button |
| .ui-picklist-button-move-down | Move down button |
| .ui-picklist-button-move-bottom | Move bottom button |
| .ui-picklist-button-add | Add button |
| .ui-picklist-button-add-all | Add all button |

| Style Class | Applies |
|--------------------------------|------------------------------------------|
| .ui-picklist-button-remove-all | Remove all button |
| .ui-picklist-button-add | Add button |
| .ui-picklist-vertical | Container element of a vertical picklist |

As skinning style classes are global, see the main theming section for more information.

3.97 Poll

Poll is an ajax component that has the ability to send periodical ajax requests.

Info

| | |
|------------------|---------------------------------------------------|
| Tag | poll |
| Component Class | org.primefaces.component.poll.Poll |
| Component Type | org.primefaces.component.Poll |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.PollRenderer |
| Renderer Class | org.primefaces.component.poll.PollRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| widgetVar | null | String | Name of the client side widget. |
| interval | 2 | Integer | Interval in seconds to do periodic ajax requests. |
| update | null | String | Component(s) to be updated with ajax. |
| listener | null | MethodExpr | A method expression to invoke by polling. |
| immediate | false | Boolean | Boolean value that determines the phaseId, when true actions are processed at apply_request_values, when false at invoke_application phase. |
| async | false | Boolean | When set to true, ajax requests are not queued. |
| process | null | String | Component id(s) to process partially instead of whole view. |
| onstart | null | String | Javascript handler to execute before ajax request is begins. |
| oncomplete | null | String | Javascript handler to execute when ajax request is completed. |
| onsuccess | null | String | Javascript handler to execute when ajax request succeeds. |
| onerror | null | String | Javascript handler to execute when ajax request fails. |

| Name | Default | Type | Description |
|---------------------|---------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| global | true | Boolean | Global ajax requests are listened by ajaxStatus component, setting global to false will not trigger ajaxStatus. |
| delay | null | String | If less than <i>delay</i> milliseconds elapses between calls to <i>request()</i> only the most recent one is sent and all other requests are discarded. If this option is not specified, or if the value of <i>delay</i> is the literal string 'none' without the quotes, no delay is used. |
| partialSubmit | false | Boolean | Enables serialization of values belonging to the partially processed components only. |
| partialSubmitFilter | null | String | Selector to use when partial submit is on, default is ":input" to select all descendant inputs of a partially processed components. |
| autoStart | true | Boolean | In autoStart mode, polling starts automatically on page load, to start polling on demand set to false. |
| stop | false | Boolean | Stops polling when true. |
| resetValues | false | Boolean | If true, local values of input components to be updated within the ajax request would be reset. |
| ignoreAutoUpdate | false | Boolean | If true, components which autoUpdate="true" will not be updated for this request. If not specified, or the value is false, no such indication is made. |
| timeout | 0 | Integer | Timeout for the ajax request in milliseconds. |
| form | null | String | Form to serialize for an ajax request. Default is the enclosing form. |

Getting started with Poll

Poll below invokes increment method on CounterBean every 2 seconds and *txt_count* is updated with the new value of the count variable. Note that poll must be nested inside a form.

```
<h:outputText id="txt_count" value="#{counterBean.count}" />
<p:poll listener="#{counterBean.increment}" update="txt_count" />
```

```

public class CounterBean {

    private int count;

    public void increment() {
        count++;
    }

    public int getCount() {
        return this.count;
    }

    public void setCount(int count) {
        this.count = count;
    }
}

```

Tuning timing

By default the periodic interval is 2 seconds, this is changed with the interval attribute. Following poll works every 5 seconds.

```

<h:outputText id="txt_count" value="#{counterBean.count}" />
<p:poll listener="#{counterBean.increment}" update="txt_count" interval="5" />

```

Start and Stop

Poll can be started and stopped using client side api;

```

<h:form>

    <h:outputText id="txt_count" value="#{counterBean.count}" />

    <p:poll interval="5" actionListener="#{counterBean.increment}"
        update="txt_count" widgetVar="myPoll" autoStart="false" />

    <a href="#" onclick="PF('myPoll').start();">Start</a>
    <a href="#" onclick="PF('myPoll').stop();">Stop</a>

</h:form>

```

Or bind a boolean variable to the *stop* attribute and set it to false at any arbitrary time.

3.98 Printer

Printer allows sending a specific JSF component to the printer, not the whole page.

Info

| | |
|----------------|--------------------------------------------------|
| Tag | printer |
| Behavior Class | org.primefaces.component.behavior.Printer |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| target | null | String | Target component to print. |

Getting started with the Printer

Printer is attached to any command component like a button or a link. Examples below demonstrates how to print a simple output text or a particular image on page;

```

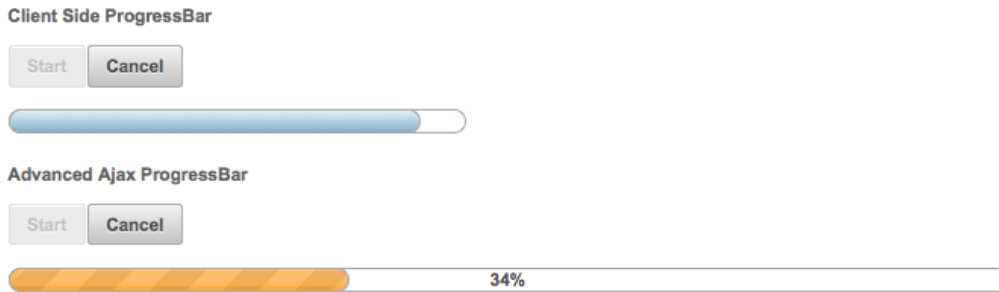
<h:commandButton id="btn" value="Print">
  <p:printer target="output" />
</h:commandButton>
<h:outputText id="output" value="PrimeFaces Rocks!" />

<h:outputLink id="lnk" value="#">
  <p:printer target="image" />
  <h:outputText value="Print Image" />
</h:outputLink>
<p:graphicImage id="image" value="/images/nature1.jpg" />

```


3.99 ProgressBar

ProgressBar is a process status indicator that can either work purely on client side or interact with server side using ajax.



Info

| | |
|------------------|-----------------------------------------------------------------|
| Tag | propressBar |
| Component Class | org.primefaces.component.progressBar.ProgressBar |
| Component Type | org.primefaces.component.ProgressBar |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ProgressBarRenderer |
| Renderer Class | org.primefaces.component.progressBar.ProgressBarRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget |
| value | 0 | Integer | Value of the progress bar |
| disabled | false | Boolean | Disables or enables the progressbar |
| ajax | false | Boolean | Specifies the mode of progressBar, in ajax mode progress value is retrieved from a backing bean. |
| interval | 3000 | Integer | Interval in seconds to do periodic requests in ajax mode. |

| Name | Default | Type | Description |
|---------------|---------|---------|-----------------------------------------------------------------------------------------------------------------|
| style | null | String | Inline style of the main container element. |
| styleClass | null | String | Style class of the main container element. |
| labelTemplate | {value} | String | Template of the progress label. |
| displayOnly | false | Boolean | Enables static display mode. |
| global | true | Boolean | Global ajax requests are listened by ajaxStatus component, setting global to false will not trigger ajaxStatus. |

Getting started with the ProgressBar

ProgressBar has two modes, "client"(default) or "ajax". Following is a pure client side progressBar.

```
<p:progressBar widgetVar="pb" />

<p:commandButton value="Start" type="button" onclick="start()" />
<p:commandButton value="Cancel" type="button" onclick="cancel()" />

<script type="text/javascript">
    function start() {
        this.progressBarInterval = setInterval(function(){
            PF('pb').setValue(PF('pb').getValue() + 10);
        }, 2000);
    }

    function cancel() {
        clearInterval(this.progressBarInterval);
        PF('pb').setValue(0);
    }
</script>
```

Ajax Progress

Ajax mode is enabled by setting ajax attribute to true, in this case the value defined on a managed bean is retrieved periodically and used to update the progress.

```
<p:progressBar ajax="true" value="#{progressBean.progress}" />
```

```
public class ProgressBean {
    private int progress;

    //getter-setter
}
```

Interval

ProgressBar is based on polling and 3000 milliseconds is the default interval for ajax progress bar meaning every 3 seconds progress value will be recalculated. In order to set a different value, use the interval attribute.

```
<p:progressBar interval="5000" />
```

Ajax Behavior Events

ProgressBar provides *complete* as the default and only ajax behavior event that is fired when the progress is completed. Example below demonstrates how to use this event.

```
public class ProgressBean {
    private int progress;

    public void handleComplete() {
        //Add a faces message
    }

    public int getProgress() {
        return progress;
    }

    public void setProgress(int progress) {
        this.progress = progress;
    }
}
```

```
<p:progressBar value="#{progressBean.progress}" ajax="true">
    <p:ajax event="complete" listener="#{progressBean.handleComplete}"
        update="messages" />
</p:progressBar>

<p:growl id="messages" />
```

Display Only

Assume you have a process like a ticket purchase that spans various pages where each page has different use cases such as customer info, seat selection, billing, payment and more. In order to display static value of the process on each page, you can use a static progressBar.

```
<p:progressBar value="50" displayOnly="true" />
```

Client Side API

Widget: *PrimeFaces.widget.ProgressBar*

| Method | Params | Return Type | Description |
|------------|--------|-------------|-----------------------|
| getValue() | - | Number | Returns current value |

| Method | Params | Return Type | Description |
|-----------------|-------------------------|-------------|--------------------------|
| setValue(value) | value: Value to display | void | Sets current value |
| start() | - | void | Starts ajax progress bar |
| cancel() | - | void | Stops ajax progress bar |

Skinning

ProgressBar resides in a main container which *style* and *styleClass* attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|-----------------------|--------------------------|
| .ui-progressbar | Main container. |
| .ui-progressbar-value | Value of the progressbar |
| .ui-progressbar-label | Progress label. |

As skinning style classes are global, see the main theming section for more information.

3.100 RadioButton

RadioButton is a helper component of SelectOneRadio to implement custom layouts.

Info

| | |
|------------------|-----------------------------------------------------------------|
| Tag | radioButton |
| Component Class | org.primefaces.component.radiobutton.RadioButton |
| Component Type | org.primefaces.component.RadioButton |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.RadioButtonRenderer |
| Renderer Class | org.primefaces.component.radiobutton.RadioButtonRenderer |

Attributes

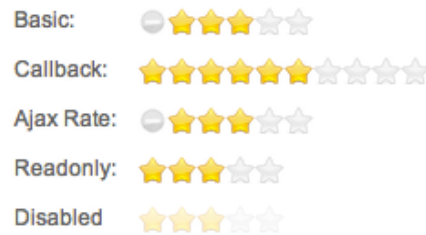
| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| disabled | false | Boolean | Disabled the component. |
| itemIndex | null | Integer | Index of the selectItem of selectOneRadio. |
| onchange | null | String | Client side callback to execute on state change. |
| for | null | String | Id of the selectOneRadio to attach to. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the container. |
| tabindex | null | String | Specifies the tab order of element in tab navigation. |

Getting started with RadioButton

See custom layout part in SelectOneRadio section for more information.

3.101 Rating

Rating component features a star based rating system.



Info

| | |
|------------------|-------------------------------------------------------|
| Tag | rating |
| Component Class | org.primefaces.component.rating.Rating |
| Component Type | org.primefaces.component.Rating |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.RatingRenderer |
| Renderer Class | org.primefaces.component.rating.RatingRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component than can be either an EL expression of a literal text |
| converter | null | Converter/ String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | 0 | Boolean | Boolean value that specifies the lifecycle phase the valueChangeEvents should be processed, when true the events will be fired at "apply request values", if immediate is set to false, valueChange Events are fired in "process validations" phase |

| Name | Default | Type | Description |
|---------------------|---------|------------|------------------------------------------------------------------------------------|
| required | false | Boolean | Marks component as required |
| validator | null | MethodExpr | A method binding expression that refers to a method validationg the input |
| valueChangeListener | null | MethodExpr | A method binding expression that refers to a method for handling a valuchangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| stars | 5 | Integer | Number of stars to display |
| disabled | false | Boolean | Disables user interaction |
| readonly | false | Boolean | Disables user interaction without disabled visuals. |
| onRate | null | String | Client side callback to execute when rate happens. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| cancel | true | Boolean | When enabled, displays a cancel icon to reset. |

Getting Started with Rating

Rating is an input component that takes an integer variable as its value.

```
public class RatingBean {
    private Integer rating;
    //getter-setter
}
```

```
<p:rating value="#{ratingBean.rating}" />
```

Number of Stars

Default number of stars is 5, if you need less or more stars use the stars attribute. Following rating consists of 10 stars.

```
<p:rating value="#{ratingBean.rating}" stars="10"/>
```

Display Value Only

In cases where you only want to use the rating component to display the rating value and disallow user interaction, set *readonly* to true. Using *disabled* attribute does the same but adds disabled visual styles.

Ajax Behavior Events

Rating provides *rate* and *cancel* as ajax behavior events. A defined listener for rate event will be executed by passing an *org.primefaces.event.RateEvent* as a parameter and cancel event will be invoked with no parameter.

```
<p:rating value="#{ratingBean.rating}">
    <p:ajax event="rate" listener="#{ratingBean.handleRate}" update="msgs" />
    <p:ajax event="cancel" listener="#{ratingBean.handleCancel}" update="msgs" />
</p:rating>
<p:messages id="msgs" />
```

```
public class RatingBean {

    private Integer rating;

    public void handleRate(RateEvent rateEvent) {
        Integer rate = (Integer) rateEvent.getRating();
        //Add facesmessage
    }

    public void handleCancel() {
        //Add facesmessage
    }

    //getter-setter
}
```

Client Side Callbacks

onRate is called when a star is selected with *value* as the only parameter.

```
<p:rating value="#{ratingBean.rating}" onRate="alert('You rated: ' + value)" />
```

Client Side API

Widget: *PrimeFaces.widget.Rating*

| Method | Params | Return Type | Description |
|-----------------|---------------------|-------------|-----------------------------------------|
| getValue() | - | Number | Returns the current value |
| setValue(value) | value: Value to set | void | Updates rating value with provided one. |
| disable() | - | void | Disables component. |
| enable() | - | void | Enables component. |
| reset() | - | void | Clears the rating. |

Skinning

Rating resides in a main container which *style* and *styleClass* attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|-------------------|-------------------------|
| .ui-rating | Main container element. |
| .ui-rating-cancel | Cancel icon |
| .ui-rating | Default star |
| .ui-rating-on | Active star |

3.102 RemoteCommand

RemoteCommand provides a way to execute backing bean methods directly from javascript.

Info

| | |
|------------------|---------------------------------------------------------------------|
| Tag | remoteCommand |
| Component Class | org.primefaces.component.remotecommand.RemoteCommand |
| Component Type | org.primefaces.component.RemoteCommand |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.RemoteCommandRenderer |
| Renderer Class | org.primefaces.component.remotecommand.RemoteCommandRenderer |

Attributes

| Name | Default | Type | Description |
|----------------|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| action | null | Method Expr | A method expression that'd be processed in the partial request caused by uiajax. |
| actionListener | null | Method Expr | An actionlistener that'd be processed in the partial request caused by uiajax. |
| immediate | false | Boolean | Boolean value that determines the phaseId, when true actions are processed at apply_request_values, when false at invoke_application phase. |
| name | null | String | Name of the command |
| async | false | Boolean | When set to true, ajax requests are not queued. |
| process | null | String | Component(s) to process partially instead of whole view. |
| update | null | String | Component(s) to update with ajax. |
| onstart | null | String | Javascript handler to execute before ajax request is begins. |
| oncomplete | null | String | Javascript handler to execute when ajax request is completed. |
| onsuccess | null | String | Javascript handler to execute when ajax request succeeds. |
| onerror | null | String | Javascript handler to execute when ajax request fails. |

| Name | Default | Type | Description |
|---------------------|---------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| global | true | Boolean | Global ajax requests are listened by ajaxStatus component, setting global to false will not trigger ajaxStatus. |
| delay | null | String | If less than <i>delay</i> milliseconds elapses between calls to <i>request()</i> only the most recent one is sent and all other requests are discarded. If this option is not specified, or if the value of <i>delay</i> is the literal string 'none' without the quotes, no delay is used. |
| partialSubmit | false | Boolean | Enables serialization of values belonging to the partially processed components only. |
| partialSubmitFilter | null | String | Selector to use when partial submit is on, default is ":input" to select all descendant inputs of a partially processed components. |
| autoRun | false | Boolean | When enabled command is executed on page load. |
| resetValues | false | Boolean | If true, local values of input components to be updated within the ajax request would be reset. |
| ignoreAutoUpdate | false | Boolean | If true, components which autoUpdate="true" will not be updated for this request. If not specified, or the value is false, no such indication is made. |
| timeout | 0 | Integer | Timeout for the ajax request in milliseconds. |
| form | null | String | Form to serialize for an ajax request. Default is the enclosing form. |

Getting started with RemoteCommand

RemoteCommand is used by invoking the command from your javascript code.

```
<p:remoteCommand name="increment" actionListener="#{counter.increment}"
  out="count" />

<h:outputText id="count" value="#{counter.count}" />
```

```
<script type="text/javascript">
  function customfunction() {
    //your custom code

    increment();      //makes a remote call
  }
</script>
```

That's it whenever you execute your custom javascript function(eg customfunction()), a remote call will be made, actionListener is processed and output text is updated. Note that remoteCommand must be nested inside a form.

Passing Parameters

Remote command can send dynamic parameters in the following way;

```
increment([[{name:'x', value:10}, {name:'y', value:20}]]);
```

3.103 Repeat

Repeat is an extension to the standard `ui:repeat` component to provide compatibility between Mojarra and MyFaces. There are no additional features and usage is same as `ui:repeat`.

3.104 ResetInput

Input components keep their local values at state when validation fails. ResetInput is used to clear the cached values from state so that components retrieve their values from the backing bean model instead.

Info

| | |
|----------------------|---------------------------------------------------------------------|
| Tag | resetInput |
| ActionListener Class | org.primefaces.component.resetinput.ResetInputActionListener |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|-----------------------------------------------------------------------------------------------------------------|
| target | null | String | Comma or white space separated list of component identifiers. |
| clearModel | false | Boolean | When enabled, reset input also sets null values to the bound values so it reset inputs values and model values. |

Getting started with ResetInput

ResetInput is attached to action source components like commandButton and commandLink.

```

<h:form id="form">
  <p:panel id="panel" header="New User" style="margin-bottom:10px;">
    <p:messages id="messages" />
    <h:panelGrid columns="2">
      <h:outputLabel for="firstname" value="Firstname: *" />
      <p:inputText id="firstname" value="#{pprBean.firstname}"
        required="true" label="Firstname">
        <f:validateLength minimum="2" />
      </p:inputText>

      <h:outputLabel for="surname" value="Surname: *" />
      <p:inputText id="surname" value="#{pprBean.surname}"
        required="true" label="Surname"/>
    </h:panelGrid>
  </p:panel>

  <p:commandButton value="Submit" update="panel"
    actionListener="#{pprBean.savePerson}" />
  <p:commandButton value="Reset Tag" update="panel" process="@this">
    <p:resetInput target="panel" />
  </p:commandButton>
  <p:commandButton value="Reset Non-Ajax"
    actionListener="#{pprBean.reset}" immediate="true" ajax="false">
    <p:resetInput target="panel" />
  </p:commandButton>
</h:form>

```

ResetInput supports both ajax and non-ajax actions, for non-ajax actions set immediate true on the source component so lifecycle jumps to render response after resetting. To reset multiple components at once, provide a list of ids or just provide an ancestor component like the panel in sample above.

Reset Programmatically

ResetInput tag is the declarative way to reset input components, another way is resetting programmatically. This is also handy if inputs should get reset based on a condition. Following sample demonstrates how to use RequestContext to do the reset within an ajaxbehavior listener. Parameter of the reset method can be a single clientId or a collection of clientIds.

```
<p:inputText value="#{bean.value}">
  <p:ajax event="blur" listener="#{bean.listener}" />
</p:inputText>
```

```
public void listener() {
    RequestContext context = RequestContext.getCurrentInstance();
    context.reset("form:panel");
}
```

Tip

p:ajax has built-in *resetValues* attribute to reset values of processed components during a request.

3.105 Resizable

Resizable component is used to make another JSF component resizable.

Info

| | |
|------------------|-------------------------------------------------------------|
| Tag | resizable |
| Component Class | org.primefaces.component.resizable.Resizable |
| Component Type | org.primefaces.component.Resizable |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ResizableRenderer |
| Renderer Class | org.primefaces.component.resizable.ResizableRenderer |

Attributes

| Name | Default | Type | Description |
|----------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| for | null | String | Identifier of the target component to make resizable. |
| aspectRatio | false | Boolean | Defines if aspectRatio should be kept or not. |
| proxy | false | Boolean | Displays proxy element instead of actual element. |
| handles | null | String | Specifies the resize handles. |
| ghost | false | Boolean | In ghost mode, resize helper is displayed as the original element with less opacity. |
| animate | false | Boolean | Enables animation. |
| effect | swing | String | Effect to use in animation. |
| effectDuration | normal | String | Effect duration of animation. |
| maxWidth | null | Integer | Maximum width boundary in pixels. |
| maxHeight | null | Integer | Maximum height boundary in pixels. |
| minWidth | 10 | Integer | Minimum width boundary in pixels. |
| minHeight | 10 | Integer | Maximum height boundary in pixels. |

| Name | Default | Type | Description |
|-------------|---------|---------|-------------------------------------------------------|
| containment | false | Boolean | Sets resizable boundaries as the parents size. |
| grid | 1 | Integer | Snaps resizing to grid structure. |
| onStart | null | String | Client side callback to execute when resizing begins. |
| onResize | null | String | Client side callback to execute during resizing. |
| onStop | null | String | Client side callback to execute after resizing end. |

Getting started with Resizable

Resizable is used by setting *for* option as the identifier of the target.

```
<p:graphicImage id="img" value="campnou.jpg" />
<p:resizable for="img" />
```

Another example is the input fields, if users need more space for a textarea, make it resizable by;

```
<h:inputTextarea id="area" value="Resize me if you need more space" />
<p:resizable for="area" />
```

Boundaries

To prevent overlapping with other elements on page, boundaries need to be specified. There're 4 attributes for this *minWidth*, *maxWidth*, *minHeight* and *maxHeight*. The valid values for these attributes are numbers in terms of pixels.

```
<h:inputTextarea id="area" value="Resize me if you need more space" />
<p:resizable for="area" minWidth="20" minHeight="40" maxWidth="50" maxHeight="100"/>
```

Handles

Resize handles to display are customize using *handles* attribute with a combination of *n*, *e*, *s*, *w*, *ne*, *se*, *sw* and *nw* as the value. Default value is "*e, s, se*".

```
<h:inputTextarea id="area" value="Resize me if you need more space" />
<p:resizable for="area" handles="e,w,n,se,sw,ne,nw"/>
```

Visual Feedback

Resize helper is the element used to provide visual feedback during resizing. By default actual element itself is the helper and two options are available to customize the way feedback is provided. Enabling *ghost* option displays the element itself with a lower opacity, in addition enabling *proxy* option adds a css class called *.ui-resizable-proxy* which you can override to customize.

```
<h:inputTextarea id="area" value="Resize me if you need more space" />
<p:resizable for="area" proxy="true" />
```

```
.ui-resizable-proxy {
    border: 2px dotted #00F;
}
```

Effects

Resizing can be animated using *animate* option and setting an *effect* name. Animation speed is customized using *effectDuration* option "*slow*", "*normal*" and "*fast*" as valid values.

```
<h:inputTextarea id="area" value="Resize me if you need more space" />
<p:resizable for="area" animate="true" effect="swing" effectDuration="normal" />
```

Following is the list of available effect names;

| | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • swing • easeInQuad • easeOutQuad • easeInOutQuad • easeInCubic • easeOutCubic • easeInOutCubic | <ul style="list-style-type: none"> • easeInQuart • easeOutQuart • easeInOutQuart • easeInQuint • easeOutQuint • easeInOutQuint • easeInSine | <ul style="list-style-type: none"> • easeOutSine • easeInExpo • easeOutExpo • easeInOutExpo • easeInCirc • easeOutCirc • easeInOutCirc | <ul style="list-style-type: none"> • easeInElastic • easeOutElastic • easeInOutElastic • easeInBack • easeOutBack • easeInOutBack | <ul style="list-style-type: none"> • easeInBounce • easeOutBounce • easeInOutBounce |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|

Ajax Behavior Events

Resizable provides default and only *resize* event that is called on resize end. In case you have a listener defined, it will be called by passing an *org.primefaces.event.ResizeEvent* instance as a parameter.

```
<h:inputTextarea id="area" value="Resize me if you need more space" />
<p:resizable for="area">
    <p:ajax listener="#{resizeBean.handleResize}">
</p:resizable>
```

```
public class ResizeBean {

    public void handleResize(ResizeEvent event) {
        int width = event.getWidth();
        int height = event.getHeight();
    }
}
```

Client Side Callbacks

Resizable has three client side callbacks you can use to hook-in your javascript; *onStart*, *onResize* and *onStop*. All of these callbacks receive two parameters that provide various information about resize event.

```
<h:inputTextarea id="area" value="Resize me if you need more space" />
<p:resizable for="area" onStop="handleStop(event, ui)" />
```

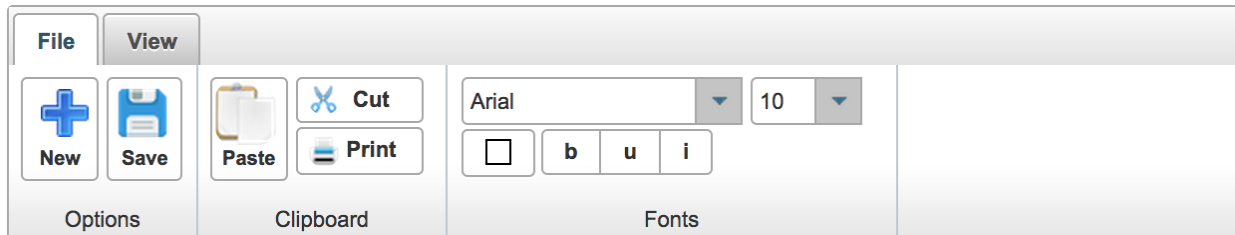
```
function handleStop(event, ui) {
    //ui.helper = helper element as a jQuery object
    //ui.originalPosition = top, left position before resizing
    //ui.originalSize = width, height before resizing
    //ui.positon = top, left after resizing
    //ui.size = width height of current size
}
```

Skinning

| Style Class | Applies |
|----------------------------------|-----------------------------------------------------------------|
| .ui-resizable | Element that is resizable |
| .ui-resizable-handle | Handle element |
| .ui-resizable-handle-{handlekey} | Particular handle element identified by handlekey like e, s, ne |
| .ui-resizable-proxy | Proxy helper element for visual feedback |

3.106 Ribbon

Ribbon is container component to group different sets of controls in a tabbed layout. Special styling is applied to inner components for a unified look.



Info

| | |
|------------------|-------------------------------------------------------|
| Tag | ribbon |
| Component Class | org.primefaces.component.ribbon.Ribbon |
| Component Type | org.primefaces.component.Ribbon |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.RibbonRenderer |
| Renderer Class | org.primefaces.component.ribbon.RibbonRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| style | null | String | Inline style of the container element. |
| styleClass | null | String | Style class of the container element. |
| activeIndex | 0 | Integer | Index of the active tab. |

Getting started with Ribbon

Tab and RibbonGroup components are used when building the Ribbon.

```

<p:ribbon>
  <p:tab title="File">
    <p:ribbonGroup label="Options">
      <p:commandButton value="New" icon="ui-ribbonicon-new"
styleClass="ui-ribbon-bigbutton" type="button"/>
      <p:commandButton value="Save" icon="ui-ribbonicon-save"
styleClass="ui-ribbon-bigbutton" type="button"/>
    </p:ribbonGroup>

    <p:ribbonGroup label="Clipboard" style="width:120px">
      <p:selectManyButton>
        <p:commandButton value="Paste" icon="ui-ribbonicon-paste"
styleClass="ui-ribbon-bigbutton" type="button"/>
        <p:commandButton value="Cut" icon="ui-ribbonicon-cut"
style="width:64px" type="button"/>
        <p:commandButton value="Print" icon="ui-ribbonicon-print"
style="width:64px" type="button"/>
      </p:selectManyButton>
    </p:ribbonGroup>

    <p:ribbonGroup label="Fonts" style="width:220px">
      <p:selectOneMenu appendTo="@this">
        <f:selectItem itemLabel="Arial" itemValue="0" />
        <f:selectItem itemLabel="Comis Sans" itemValue="1" />
        <f:selectItem itemLabel="Helvetica" itemValue="2" />
        <f:selectItem itemLabel="Times New Roman" itemValue="3" />
        <f:selectItem itemLabel="Verdana" itemValue="4" />
      </p:selectOneMenu>

      <p:colorPicker />
    </p:ribbonGroup>
  </p:tab>

  <p:tab title="View">
    <p:ribbonGroup label="Zoom">
      <p:commandButton value="In" icon="ui-ribbonicon-zoomin"
styleClass="ui-ribbon-bigbutton" type="button" />
      <p:commandButton value="Out" icon="ui-ribbonicon-zoomout"
styleClass="ui-ribbon-bigbutton" type="button"/>
    </p:ribbonGroup>
  </p:tab>
</p:ribbon>

```

Styling

Following components have special styling applied inside ribbon;

- Button
- CommandButton
- SelectOneButton
- SelectManyButton
- SelectOneMenu
- InputText

Default PrimeFaces icons are 16px, in case you need bigger icons add ui-ribbon-bigbutton style class to the button.

Skinning

Ribbon resides in a main container which *style* and *styleClass* attributes apply. Following is the list of structural style classes.

| Style Class | Applies |
|--------------------------|--------------------------------------|
| .ui-ribbon | Main container element. |
| .ui-ribbon-groups | Container of ribbon groups in a tab. |
| .ui-ribbon-group | Ribbon group element. |
| .ui-ribbon-group-content | Content of a group. |
| .ui-ribbon-group-label | Label of a group. |

Ribbon shares the same structure with TabView for the tabbing functionality, refer to TabView for the styles of the Tabs.

3.107 RibbonGroup

RibbonGroup is a helper component for Ribbon to define groups in a tab.

Info

| | |
|------------------|------------------------------------------------------------|
| Tag | ribbonGroup |
| Component Class | org.primefaces.component.ribbon.RibbonGroup |
| Component Type | org.primefaces.component.RibbonGroup |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.RibbonGroupRenderer |
| Renderer Class | org.primefaces.component.ribbon.RibbonGroupRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| style | null | String | Inline style of the container element. |
| styleClass | null | String | Style class of the container element. |
| label | null | String | Label of the group. |

Getting started with RibbonGroup

Refer to Ribbon component documentation for more information.

3.108 Ring

Ring is a data display component with a circular animation.



Info

| | |
|------------------|---------------------------------------------------|
| Tag | ring |
| Component Class | org.primefaces.component.ring.Ring |
| Component Type | org.primefaces.component.Ring |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.RingRenderer |
| Renderer Class | org.primefaces.component.ring.RingRenderer |

Attributes

| Name | Default | Type | Description |
|----------------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| value | null | Object | Collection to display. |
| var | null | String | Name of the data iterator. |
| style | null | String | Inline style of the container element. |
| styleClass | null | String | Style class of the container element. |
| easing | swing | String | Type of easing to use in animation. |
| autoplay | false | Boolean | When true, Ring will automatically advance the moving elements to the next child at a regular interval. |
| autoplayDuration | 1000 | Integer | Time in milliseconds between animation triggers when a Ring's autoplay is playing. |
| autoplayPauseOnHover | false | Boolean | When true, Ring will pause autoPlay when the user |

| Name | Default | Type | Description |
|----------------------|---------|---------|-------------------------------------------------------------------------------|
| | | | mouseover the Ring container. |
| autoplayInitialDelay | 0 | Integer | Time in milliseconds to delay the start of Ring's configured autoplay option. |

Getting started with Ring

A collection is required to use the Ring component.

```
<p:ring value="#{ringBean.players}" var="player">
  <p:graphicImage value="/images/barca/#{player.photo}"/>
</p:ring>
```

```
public class RingBean {
    private List<Player> players;

    public RingBean() {
        players = new ArrayList<Player>();

        players.add(new Player("Messi", 10, "messi.jpg", "CF"));
        players.add(new Player("Iniesta", 8, "iniesta.jpg", "CM"));
        //more players
    }

    //getter&setter for players
}
```

Item Selection

A column is required to process item selection from ring properly.

```
<p:ring value="#{ringBean.players}" var="player">
  <p:column>
    //UI to select an item e.g. commandLink
  </p:column>
</p:ring>
```

Easing

Following is the list of available options for easing animation.

| | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • swing • easeInQuad • easeOutQuad • easeInOutQuad • easeInCubic • easeOutCubic • easeInOutCubic | <ul style="list-style-type: none"> • easeInQuart • easeOutQuart • easeInOutQuart • easeInQuint • easeOutQuint • easeInOutQuint • easeInSine | <ul style="list-style-type: none"> • easeOutSine • easeInExpo • easeOutExpo • easeInOutExpo • easeInCirc • easeOutCirc • easeInOutCirc | <ul style="list-style-type: none"> • easeInElastic • easeOutElastic • easeInOutElastic • easeInBack • easeOutBack • easeInOutBack | <ul style="list-style-type: none"> • easeInBounce • easeOutBounce • easeInOutBounce |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|

Skinning

Ring resides in a main container which *style* and *styleClass* attributes apply. Following is the list of structural style classes.

| Style Class | Applies |
|---------------|-------------------------|
| .ui-ring | Main container element. |
| .ui-ring-item | Each item in the list. |

3.109 Row

Row is a helper component for datatable.

Info

| | |
|------------------|-----------------------------------------|
| Tag | row |
| Component Class | org.primefaces.component.row.Row |
| Component Type | org.primefaces.component.Row |
| Component Family | org.primefaces.component |

Attributes

| Name | Default | Type | Description |
|-----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| style | null | String | Inline style of the component. |
| styleClas | null | String | Style class of the component. |

Getting Started with Row

See datatable grouping section for more information about how row is used.

3.110 RowEditor

RowEditor is a helper component for datatable.

Info

| | |
|------------------|-------------------------------------------------------------|
| Tag | rowEditor |
| Component Class | org.primefaces.component.roweditor.RowEditor |
| Component Type | org.primefaces.component.RowEditor |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.RowEditorRenderer |
| Renderer Class | org.primefaces.component.roweditor.RowEditorRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| editTitle | null | String | Title attribute for edit icon. |
| cancelTitle | null | String | Title attribute for cancel icon. |
| saveTitle | null | String | Title attribute for save icon. |

Getting Started with RowEditor

See inline editing section in datatable documentation for more information about usage.

3.111 RowExpansion

RowExpansion is a helper component of datatable used to implement expandable rows.

Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | rowExpansion |
| Component Class | org.primefaces.component.rowexpansion.RowExpansion |
| Component Type | org.primefaces.component.RowExpansion |
| Component Family | org.primefaces.component |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| styleClass | null | String | Style class of the component. |

Getting Started with RowExpansion

See datatable expandable rows section for more information about how rowExpansion is used.

3.112 RowToggler

RowToggler is a helper component for datatable.

Info

| | |
|------------------|---------------------------------------------------------------|
| Tag | rowToggler |
| Component Class | org.primefaces.component.rowtoggler.RowToggler |
| Component Type | org.primefaces.component.RowToggler |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.RowTogglerRenderer |
| Renderer Class | org.primefaces.component.rowtoggler.RowTogglerRenderer |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |

Getting Started with Row

See expandable rows section in datatable documentation for more information about usage.

3.113 Schedule

Schedule provides an Outlook Calendar, iCal like JSF component to manage events.



Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | schedule |
| Component Class | org.primefaces.component.schedule.Schedule |
| Component Type | org.primefaces.component.Schedule |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ScheduleRenderer |
| Renderer Class | org.primefaces.component.schedule.ScheduleRenderer |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |

| Name | Default | Type | Description |
|----------------------|------------------------------------|---------|--------------------------------------------------------------------------------------------------------|
| widgetVar | null | String | Name of the client side widget. |
| value | null | Object | An org.primefaces.model.ScheduleModel instance representing the backed model |
| locale | null | Object | Locale for localization, can be String or a java.util.Locale instance |
| aspectRatio | null | Float | Ratio of calendar width to height, higher the value shorter the height is |
| view | month | String | The view type to use, possible values are 'month', 'agendaDay', 'agendaWeek', 'basicWeek', 'basicDay' |
| initialDate | null | Object | The initial date that is used when schedule loads. If omitted, the schedule starts on the current date |
| showWeekends | true | Boolean | Specifies inclusion Saturday/Sunday columns in any of the views |
| style | null | String | Style of the main container element of schedule |
| styleClass | null | String | Style class of the main container element of schedule |
| draggable | true | Boolean | When true, events are draggable. |
| resizable | true | Boolean | When true, events are resizable. |
| showHeader | true | Boolean | Specifies visibility of header content. |
| leftHeaderTemplate | prev, next today | String | Content of left side of header. |
| centerHeaderTemplate | title | String | Content of center of header. |
| rightHeaderTemplate | month, agendaWeek, agendaDay | String | Content of right side of header. |
| allDaySlot | true | Boolean | Determines if all-day slot will be displayed in agendaWeek or agendaDay views |
| slotMinutes | 30 | Integer | Interval in minutes in an hour to create a slot. |
| firstHour | 6 | Integer | First hour to display in day view. |
| minTime | null | String | Minimum time to display in a day view. |
| maxTime | null | String | Maximum time to display in a day view. |
| axisFormat | null | String | Determines the time-text that will be displayed on the vertical axis of the agenda views. |

| Name | Default | Type | Description |
|-----------------------|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| timeFormat | null | String | Determines the time-text that will be displayed on each event. |
| columnFormat | null | String | Format for column headers. |
| timeZone | null | Object | String or a java.util.TimeZone instance to specify the timezone used for date conversion. |
| ignoreTimezone | true | Boolean | When parsing dates, whether UTC offsets should be ignored while processing event data. |
| tooltip | false | Boolean | Displays description of events on a tooltip. |
| clientTimeZone | null | String | Timezone to define how to interpret the dates at browser. Valid values are "false", "local", "UTC" and ids like "America/Chicago". |
| showWeekNumbers | false | Boolean | Display week numbers in schedule. |
| extender | null | String | Name of javascript function to extend the options of the underlying fullcalendar plugin. |
| displayEventEnd | null | String | Whether or not to display an event's end time text when it is rendered on the calendar. Value can be a boolean to globally configure for all views or a comma separated list such as "month:false,basicWeek:true" to configure per view. |
| weekNumberCalculation | local | String | The method for calculating week numbers that are displayed. Valid values are "local" (default), "ISO" and "custom". |
| weekNumberCalculator | null | String | Client side function to use in custom weekNumberCalculation. |

Getting started with Schedule

Schedule needs to be backed by an *org.primefaces.model.ScheduleModel* instance, a schedule model consists of *org.primefaces.model.ScheduleEvent* instances.

```

public class ScheduleBean {

    private ScheduleModel model;

    public ScheduleBean() {
        eventModel = new ScheduleModel<ScheduleEvent>();
        eventModel.addEvent(new DefaultScheduleEvent("title", new Date(),
            new Date()));
    }

    public ScheduleModel getModel() {
        return model;
    }
}

```

```
<p:schedule value="#{scheduleBean.model}" />
```

DefaultScheduleEvent is the default implementation of ScheduleEvent interface. Mandatory properties required to create a new event are the title, start date and end date. Other properties such as allDay get sensible default values.

Table below describes each property in detail.

| Property | Description |
|-------------|-------------------------------------------------------|
| id | Used internally by PrimeFaces, auto generated. |
| title | Title of the event. |
| startDate | Start date of type java.util.Date. |
| endDate | End date of type java.util.Date. |
| allDay | Flag indicating event is all day. |
| styleClass | Visual style class to enable multi resource display. |
| data | Optional data you can set to be represented by Event. |
| editable | Whether the event is editable or not. |
| description | Tooltip text to display on mouseover of an event. |

Ajax Behavior Events

Schedule provides various ajax behavior events to respond user actions.

| Event | Listener Parameter | Fired |
|-------------|---------------------------------------------|----------------------------|
| dateSelect | org.primefaces.event.SelectEvent | When a date is selected. |
| eventSelect | org.primefaces.event.SelectEvent | When an event is selected. |
| eventMove | org.primefaces.event.ScheduleEntryMoveEvent | When an event is moved. |

| Event | Listener Parameter | Fired |
|-------------|-----------------------------------------------|---------------------------|
| eventResize | org.primefaces.event.ScheduleEntryResizeEvent | When an event is resized. |
| viewChange | org.primefaces.event.SelectEvent | When a view is changed. |

Ajax Updates

Schedule has a quite complex UI which is generated on-the-fly by the client side PrimeFaces.widget.Schedule widget to save bandwidth and increase page load performance. As a result when you try to update schedule like with a regular PrimeFaces PPR, you may notice a UI lag as the DOM will be regenerated and replaced. Instead, Schedule provides a simple client side api and the *update* method.

Whenever you call update, schedule will query its server side ScheduleModel instance to check for updates, transport method used to load events dynamically is JSON, as a result this approach is much more effective then updating with regular PPR. An example of this is demonstrated at editable schedule example, save button is calling `PF('widgetvar').update()` at oncomplete event handler.

TimeZone

By default, timezone offsets are ignored. Set `ignoreTimezone` to false so that schedule takes care of timezone differences by calculating the client browser timezone and the event date so that events are displayed at the clients local time.

Editable Schedule

Let's put it altogether to come up a fully editable and complex schedule.

```

<h:form>
  <p:schedule value="#{bean.eventModel}" editable="true" widgetVar="myschedule">
    <p:ajax event="dateSelect" listener="#{bean.onDateSelect}"
      update="eventDetails" onComplete="eventDialog.show()" />
    <p:ajax event="eventSelect" listener="#{bean.onEventSelect}"
  </p:schedule>

  <p:dialog widgetVar="eventDialog" header="Event Details">
    <h:panelGrid id="eventDetails" columns="2">
      <h:outputLabel for="title" value="Title:" />
      <h:inputText id="title" value="#{bean.event.title}" required="true"/>

      <h:outputLabel for="from" value="From:" />
      <p:inputMask id="from" value="#{bean.event.startDate}" mask="99/99/9999">
        <f:convertDateTime pattern="dd/MM/yyyy" />
      </p:inputMask>

      <h:outputLabel for="to" value="To:" />
      <p:inputMask id="to" value="#{bean.event.endDate}" mask="99/99/9999">
        <f:convertDateTime pattern="dd/MM/yyyy" />
      </p:inputMask>

      <h:outputLabel for="allDay" value="All Day:" />
      <h:selectBooleanCheckbox id="allDay" value="#{bean.event.allDay}" />

      <p:commandButton type="reset" value="Reset" />
      <p:commandButton value="Save" actionListener="#{bean.addEvent}"
oncomplete="PF('myschedule').update();PF('eventDialog').hide();"/>
    </h:panelGrid>
  </p:dialog>
</h:form>

```

```

public class ScheduleBean {

    private ScheduleModel<ScheduleEvent> model;
    private ScheduleEventImpl event = new DefaultScheduleEvent();

    public ScheduleBean() {
        eventModel = new ScheduleModel<ScheduleEvent>();
    }

    public ScheduleModel<ScheduleEvent> getModel() { return model; }

    public ScheduleEventImpl getEvent() { return event; }
    public void setEvent(ScheduleEventImpl event) { this.event = event; }

    public void addEvent() {
        if(event.getId() == null)
            eventModel.addEvent(event);
        else
            eventModel.updateEvent(event);

        event = new DefaultScheduleEvent();    //reset dialog form
    }

    public void onEventSelect(SelectEvent e) {
        event = (ScheduleEvent) e.getObject();
    }

    public void onDateSelect(SelectEvent e) {
        Date date = (Date) e.getObject();
        event = new DefaultScheduleEvent("", date, date);
    }
}

```

Lazy Loading

Schedule assumes whole set of events are eagerly provided in ScheduleModel, if you have a huge data set of events, lazy loading features would help to improve performance. In lazy loading mode, only the events that belong to the displayed time frame are fetched whereas in default eager more all events need to be loaded.

```
<p:schedule value="#{scheduleBean.lazyModel}" />
```

To enable lazy loading of Schedule events, you just need to provide an instance of *org.primefaces.model.LazyScheduleModel* and implement the *loadEvents* methods. *loadEvents* method is called with new boundaries every time displayed timeframe is changed.

```

public class ScheduleBean {

    private ScheduleModel lazyModel;

    public ScheduleBean() {

        lazyModel = new LazyScheduleModel() {

            @Override
            public void loadEvents(Date start, Date end) {
                //addEvent(...);
                //addEvent(...);
            }
        };
    }

    public ScheduleModel getLazyModel() {
        return lazyModel;
    }
}

```

Customizing Header

Header controls of Schedule can be customized based on templates, valid values of template options are;

- title: Text of current month/week/day information
- prev: Button to move calendar back one month/week/day.
- next: Button to move calendar forward one month/week/day.
- prevYear: Button to move calendar back one year
- nextYear: Button to move calendar forward one year
- today: Button to move calendar to current month/week/day.
- *viewName*: Button to change the view type based on the view type.

These controls can be placed at three locations on header which are defined with *leftHeaderTemplate*, *rightHeaderTemplate* and *centerTemplate* attributes.

```

<p:schedule value="#{scheduleBean.model}"
    leftHeaderTemplate="today"
    rightHeaderTemplate="prev,next"
    centerTemplate="month, agendaWeek, agendaDay"
</p:schedule>

```

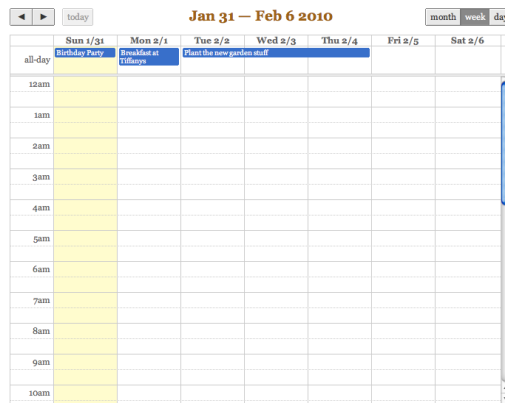
| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|-----|-----|-----|-----|-----|-----|-----|
| 28 | 29 | 30 | 31 | 1 | 2 | 3 |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Views

5 different views are supported, these are "month", "agendaWeek", "agendaDay", "basicWeek" and "basicDay".

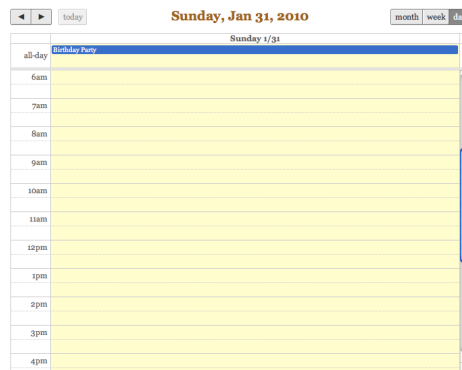
agendaWeek

```
<p:schedule value="#{scheduleBean.model}" view="agendaWeek"/>
```



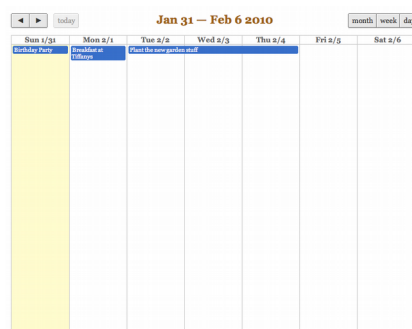
agendaDay

```
<p:schedule value="#{scheduleBean.model}" view="agendaDay"/>
```



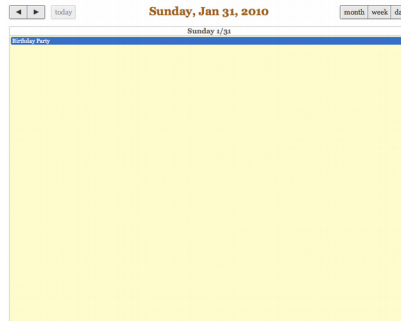
basicWeek

```
<p:schedule value="#{scheduleBean.model}" view="basicWeek"/>
```



basicDay

```
<p:schedule value="#{scheduleBean.model}" view="basicDay"/>
```



Locale Support

By default locale information is retrieved from the view's locale and can be overridden by the locale attribute. Locale attribute can take a locale key as a String or a `java.util.Locale` instance. Default language of labels are English and you need to add the necessary translations to your page manually as PrimeFaces does not include language translations. PrimeFaces Wiki Page for PrimeFacesLocales is a community driven page where you may find the translations you need. Please contribute to this wiki with your own translations.

<http://wiki.primefaces.org/display/Components/PrimeFaces+Locales>

Translation is a simple javascript object, we suggest adding the code to a javascript file and include in your application. Following is a Turkish calendar.

```
<p:schedule value="#{scheduleBean.model}" locale="tr"/>
```

Event Limit

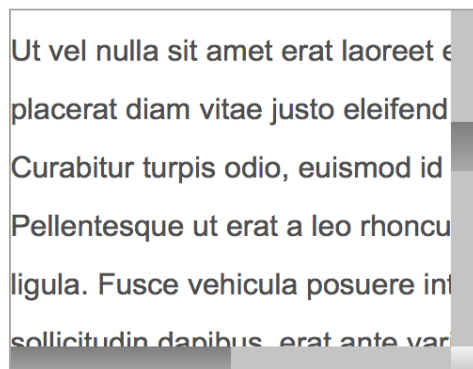
To display a link when there are too many events on a slot, use `setEventLimit(true)` on model.

Skinning

Schedule resides in a main container which `style` and `styleClass` attributes apply. As skinning style classes are global, see the main theming section for more information.

3.114 ScrollPanel

ScrollPanel is used to display scrollable content with theme aware scrollbars instead of native browser scrollbars.



Info

| | |
|------------------|-----------------------------------------------------------------|
| Tag | scrollPanel |
| Component Class | org.primefaces.component.scrollpanel.ScrollPanel |
| Component Type | org.primefaces.component.ScrollPanel |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ScrollPanelRenderer |
| Renderer Class | org.primefaces.component.scrollpanel.ScrollPanelRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| style | null | String | Inline style of the container element. |
| styleClass | null | String | Style class of the container element. |
| mode | default | String | Scrollbar display mode, valid values are default and native. |

Getting started with ScrollPanel

In order to get scrollable content, width and/or height should be defined.

```
<p:scrollPanel style="width:250px;height:200px">
    //any content
</p:scrollPanel>
```

Native ScrollBars

By default, scrollPanel displays theme aware scrollbars, setting mode option to native displays browser scrollbars.

```
<p:scrollPanel style="width:250px;height:200px" mode="native">
    //any content
</p:scrollPanel>
```

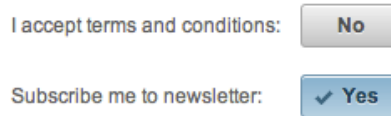
Skinning

ScrollPanel resides in a main container which *style* and *styleClass* attributes apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|---------------------------|---------------------------------|
| .ui-scrollpanel | Main container element. |
| .ui-scrollpanel-container | Overflow container. |
| .ui-scrollpanel-content | Content element. |
| .ui-scrollpanel-hbar | Horizontal scrollbar container. |
| .ui-scrollpanel-vbar | Vertical scrollbar container. |
| .ui-scrollpanel-track | Track element. |
| .ui-scrollbar-drag | Drag element. |

3.115 SelectBooleanButton

SelectBooleanButton is used to select a binary decision with a toggle button.



Info

| | |
|------------------|---------------------------------------------------------------------------------|
| Tag | selectBooleanButton |
| Component Class | org.primefaces.component.selectbooleanbutton.SelectBooleanButton |
| Component Type | org.primefaces.component.SelectBooleanButton |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SelectBooleanButtonRenderer |
| Renderer Class | org.primefaces.component.selectbooleanbutton.SelectBooleanButtonRenderer |

Attributes

| Name | Default | Type | Description |
|---------------------|---------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component referring to a List. |
| converter | null | Converter/ String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |
| validator | null | Method Expr | A method expression that refers to a method validating the input |
| valueChangeListener | null | Method Expr | A method expression that refers to a method for handling a valuechangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |

| Name | Default | Type | Description |
|------------------|---------|---------|-------------------------------------------------------------|
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| disabled | false | Boolean | Disables the component. |
| label | null | String | User presentable name. |
| onchange | null | String | Callback to execute on value change. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the container. |
| onLabel | null | String | Label to display when button is selected. |
| offLabel | null | String | Label to display when button is unselected. |
| onIcon | null | String | Icon to display when button is selected. |
| offIcon | null | String | Icon to display when button is unselected. |
| tabindex | 0 | String | Position of the element in the tabbing order. |
| title | null | String | Advisory tooltip information. |
| onfocus | null | String | Client side callback to execute when button receives focus. |
| onblur | null | String | Client side callback to execute when button loses focus. |

Getting started with SelectBooleanButton

SelectBooleanButton usage is similar to selectBooleanCheckbox.

```
<p:selectBooleanButton id="value2" value="#{bean.value}" onLabel="Yes"
    offLabel="No" onIcon="ui-icon-check" offIcon="ui-icon-close" />
```

```
public class Bean {
    private boolean value;
    //getter and setter
}
```

Skinning

SelectBooleanButton resides in a main container which *style* and *styleClass* attributes apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|-------------------------|-------------------------|
| .ui-selectbooleanbutton | Main container element. |

3.116 SelectBooleanCheckbox

SelectBooleanCheckbox is an extended version of the standard checkbox with theme integration.



Info

| | |
|------------------|-------------------------------------------------------------------------------------|
| Tag | selectBooleanCheckbox |
| Component Class | org.primefaces.component.selectbooleancheckbox.SelectBooleanCheckbox |
| Component Type | org.primefaces.component.SelectBooleanCheckbox |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SelectBooleanCheckboxRenderer |
| Renderer Class | org.primefaces.component.selectbooleancheckbox.SelectBooleanCheckboxRenderer |

Attributes

| Name | Default | Type | Description |
|---------------------|---------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component referring to a List. |
| converter | null | Converter/String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |
| validator | null | Method Expr | A method expression that refers to a method validating the input |
| valueChangeListener | null | Method Expr | A method expression that refers to a method for handling a valuechangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |

| Name | Default | Type | Description |
|------------------|---------|---------|---------------------------------------------------------------|
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| disabled | false | Boolean | Disables the component. |
| label | null | String | User presentable name. |
| onchange | null | String | Callback to execute on value change. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the container. |
| itemLabel | null | String | Label displayed next to checkbox. |
| tabindex | null | String | Specifies tab order for tab key navigation. |
| onfocus | null | String | Client side callback to execute when checkbox receives focus. |
| onblur | null | String | Client side callback to execute when checkbox loses focus. |
| title | null | String | Advisory tooltip information. |

Getting started with SelectBooleanCheckbox

SelectBooleanCheckbox usage is same as the standard one.

Client Side API

Widget: *PrimeFaces.widget.SelectBooleanCheckbox*

| Method | Params | Return Type | Description |
|-----------|--------|-------------|------------------------|
| check() | - | void | Checks the checkbox. |
| uncheck() | - | void | Unchecks the checkbox. |
| toggle() | - | void | Toggles check state. |

Skinning

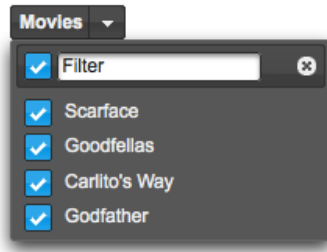
SelectBooleanCheckbox resides in a main container which *style* and *styleClass* attributes apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|-----------------|-----------------------------|
| .ui-chkbox | Main container element. |
| .ui-chkbox-box | Container of checkbox icon. |
| .ui-chkbox-icon | Checkbox icon. |

| Style Class | Applies |
|-----------------|-----------------|
| .ui-chkbox-icon | Checkbox label. |

3.117 SelectCheckboxMenu

SelectCheckboxMenu is a multi select component that displays options in an overlay.



Info

| | |
|------------------|-------------------------------------------------------------------------------|
| Tag | selectCheckboxMenu |
| Component Class | org.primefaces.component.selectcheckboxmenu.SelectCheckboxMenu |
| Component Type | org.primefaces.component.SelectCheckboxMenu |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SelectCheckboxMenuRenderer |
| Renderer Class | org.primefaces.component.selectcheckboxmenu.SelectCheckboxMenuRenderer |

Attributes

| Name | Default | Type | Description |
|---------------------|---------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component referring to a List. |
| converter | null | Converter/ String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |
| validator | null | MethodExpr | A method expression that refers to a method validating the input |
| valueChangeListener | null | MethodExpr | A method expression that refers to a method for |

| Name | Default | Type | Description |
|------------------|------------|---------|---------------------------------------------------------------------------------------------|
| | | | handling a valuechangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| disabled | false | Boolean | Disables the component. |
| label | null | String | User presentable name. |
| onchange | null | String | Callback to execute on value change. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the container. |
| scrollHeight | null | Integer | Height of the overlay. |
| onShow | null | String | Client side callback to execute when overlay is displayed. |
| onHide | null | String | Client side callback to execute when overlay is hidden. |
| filter | false | Boolean | Renders an input field as a filter. |
| filterMatchMode | startsWith | String | Match mode for filtering, valid values are startsWith, contains, endsWith and custom. |
| filterFunction | null | String | Client side function to use in custom filtering. |
| caseSensitive | false | Boolean | Defines if filtering would be case sensitive. |
| panelStyle | null | String | Inline style of the overlay. |
| panelStyleClass | null | String | Style class of the overlay. |
| appendTo | null | String | Appends the overlay to the element defined by search expression. Defaults to document body. |
| tabindex | null | String | Position of the element in the tabbing order. |
| title | null | String | Advisory tooltip information. |
| showHeader | true | Boolean | When enabled, the header of panel is displayed. |
| updateLabel | false | Boolean | When enabled, the selected items are displayed on label. |

Getting started with SelectCheckboxMenu

SelectCheckboxMenu usage is same as the standard selectManyCheckbox or PrimeFaces selectManyCheckbox components.

```
<p:selectCheckboxMenu value="#{bean.selectedOptions}" label="Movies">
  <f:selectItems value="#{bean.options}" />
</p:selectCheckboxMenu>
```

Filtering

When filtering is enabled with setting *filter* on, an input field is rendered at overlay header and on keyup event filtering is executed on client side using *filterMatchMode*. Default modes of *filterMatchMode* are startsWith, contains, endsWith and custom. Custom mode requires a javascript function to do the filtering.

```
<p:selectCheckboxMenu value="#{bean.selectedOptions}" label="Movies"
  filterMatchMode="custom" filterFunction="customFilter" filter="on">
  <f:selectItems value="#{bean.options}" />
</p:selectCheckboxMenu>
```

```
function customFilter(itemLabel, filterValue) {
  //return true to accept and false to reject
}
```

Ajax Behavior Events

In addition to common dom events like change, selectCheckboxMenu provides *toggleSelect* event.

| Event | Listener Parameter | Fired |
|--------------|----------------------------------------|-----------------------------------|
| toggleSelect | org.primefaces.event.ToggleSelectEvent | When toggle all checkbox changes. |

Skinning

SelectCheckboxMenu resides in a main container which *style* and *styleClass* attributes apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|----------------------------------------|-------------------------|
| .ui-selectcheckboxmenu | Main container element. |
| .ui-selectcheckboxmenu-label-container | Label container. |
| .ui-selectcheckboxmenu-label | Label. |
| .ui-selectcheckboxmenu-trigger | Dropdown icon. |

| Style Class | Applies |
|------------------------------|---------------------------------|
| .ui-selectcheckboxmenu-panel | Overlay panel. |
| .ui-selectcheckboxmenu-items | Option list container. |
| .ui-selectcheckboxmenu-item | Each options in the collection. |
| .ui-chkbox | Container of a checkbox. |
| .ui-chkbox-box | Container of checkbox icon. |
| .ui-chkbox-icon | Checkbox icon. |

3.118 SelectManyButton

SelectManyButton is a multi select component using button UI.



Info

| | |
|------------------|-------------------------------------------------------------------|
| Tag | selectManyButton |
| Component Class | org.primefaces.component.selectmanybutton.SelectManyButton |
| Component Type | org.primefaces.component.SelectManyButton |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SelectManyButton |
| Renderer Class | org.primefaces.component.selectmanybutton.SelectManyButton |

Attributes

| Name | Default | Type | Description |
|---------------------|---------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component referring to a List. |
| converter | null | Converter/ String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |
| validator | null | MethodExpr | A method expression that refers to a method validationg the input |
| valueChangeListener | null | MethodExpr | A method expression that refers to a method for handling a valuechangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |

| Name | Default | Type | Description |
|------------------|---------|---------|-------------------------------------------------|
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| disabled | false | Boolean | Disables the component. |
| label | null | String | User presentable name. |
| onchange | null | String | Callback to execute on value change. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the container. |

Getting started with SelectManyButton

SelectManyButton usage is same as selectManyCheckbox, buttons just replace checkboxes.

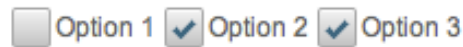
Skinning

SelectManyButton resides in a main container which *style* and *styleClass* attributes apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|----------------------|-------------------------|
| .ui-selectmanybutton | Main container element. |

3.119 SelectManyCheckbox

SelectManyCheckbox is an extended version of the standard SelectManyCheckbox.



Info

| | |
|------------------|-------------------------------------------------------------------------------|
| Tag | selectManyCheckbox |
| Component Class | org.primefaces.component.selectmanycheckbox.SelectManyCheckbox |
| Component Type | org.primefaces.component.SelectManyCheckbox |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SelectManyCheckboxRenderer |
| Renderer Class | org.primefaces.component.selectmanycheckbox.SelectManyCheckboxRenderer |

Attributes

| Name | Default | Type | Description |
|---------------------|---------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component referring to a List. |
| converter | null | Converter/String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |
| validator | null | MethodExpr | A method expression that refers to a method validating the input |
| valueChangeListener | null | MethodExpr | A method expression that refers to a method for handling a valuechangeevent |
| requiredMessage | null | String | Message to be displayed when required field |

| Name | Default | Type | Description |
|------------------|---------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------|
| | | | validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| disabled | false | Boolean | Disables the component. |
| label | null | String | User presentable name. |
| layout | lineDirection | String | Layout of the checkboxes, valid values are <i>lineDirection</i> , <i>pageDirection</i> , <i>grid</i> , <i>responsive</i> and <i>custom</i> . |
| columns | 0 | Integer | Number of columns in grid layout. |
| onchange | null | String | Callback to execute on value change. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the container. |
| tabindex | null | String | Position of the component in the tabbing order. |

Getting started with SelectManyCheckbox

SelectManyCheckbox usage is same as the standard one.

Layouts

There are five layouts options for the checkboxes;

- *lineDirection*: Checkboxes are displayed horizontally
- *pageDirection*: Checkboxes are displayed vertically
- *grid*: Checkboxes are displayed in grid with given columns value.
- *responsive*: This is same as grid except, checkboxes are displayed vertically after a certain screen breakpoint.
- *custom*: In this mode, selectManyCheckbox leaves the layout to you using p:checkbox components. Next section provides more detail about this mode.

Custom Layout

Custom layout is defined using the standalone checkbox components that match the selectItems of the selectManyCheckbox by their itemIndex option. Note that in this mode selectManyCheckbox does not render anything visible.

Following example uses customizable Grid CSS layout.

```

<p:selectManyCheckbox id="custom" value="#{checkboxView.selectedConsoles2}"
layout="custom">
  <f:selectItem itemLabel="Xbox One" itemValue="Xbox One" />
  <f:selectItem itemLabel="PS4" itemValue="PS4" />
</p:selectManyCheckbox>

<div class="ui-grid ui-grid-responsive">
  <div class="ui-grid-row">
    <div class="ui-grid-col-6">
      <p:outputLabel for="opt1" value="Xbox One" style="display:block"/>
      <p:checkbox id="opt1" for="custom" itemIndex="0" />
    </div>
    <div class="ui-grid-col-6">
      <p:outputLabel for="opt2" value="PS4" style="display:block"/>
      <p:checkbox id="opt2" for="custom" itemIndex="1" />
    </div>
  </div>
</div>

```

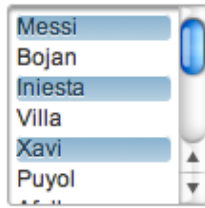
Skinning

SelectManyCheckbox resides in a main container which *style* and *styleClass* attributes apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|------------------------|-----------------------------|
| .ui-selectmanycheckbox | Main container element. |
| .ui-chkbox | Container of a checkbox. |
| .ui-chkbox-box | Container of checkbox icon. |
| .ui-chkbox-icon | Checkbox icon. |

3.120 SelectManyMenu

SelectManyMenu is an extended version of the standard SelectManyMenu.



Info

| | |
|------------------|-----------------------------------------------------------------------|
| Tag | selectManyMenu |
| Component Class | org.primefaces.component.selectmanymenu.SelectManyMenu |
| Component Type | org.primefaces.component.SelectManyMenu |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SelectManyMenuRenderer |
| Renderer Class | org.primefaces.component.selectmanymenu.SelectManyMenuRenderer |

Attributes

| Name | Default | Type | Description |
|---------------------|---------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component referring to a List. |
| converter | null | Converter/ String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |
| validator | null | MethodExpr | A method expression that refers to a method validationg the input |
| valueChangeListener | null | MethodExpr | A method expression that refers to a method for |

| Name | Default | Type | Description |
|------------------|---------|---------|-------------------------------------------------------------------------------------------------|
| | | | handling a valuechangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| disabled | false | Boolean | Disables the component. |
| label | null | String | User presentable name. |
| onchange | null | String | Callback to execute on value change. |
| onclick | null | String | Callback for click event. |
| ondblclick | null | String | Callback for dblclick event. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the container. |
| tabindex | null | String | Position of the input element in the tabbing order. |
| var | null | String | Name of iterator to be used in custom content display. |
| showCheckbox | false | Boolean | When true, a checkbox is displayed next to each item. |
| filter | false | Boolean | Displays an input filter for the list. |
| filterMatchMode | null | String | Match mode for filtering, valid values are startsWith (default), contains, endsWith and custom. |
| filterFunction | null | String | Client side function to use in custom filterMatchMode. |
| caseSensitive | false | Boolean | Defines if filtering would be case sensitive. |
| scrollHeight | null | Integer | Defines the height of the scrollable area |

Getting started with SelectManyMenu

SelectManyMenu usage is same as the standard one.

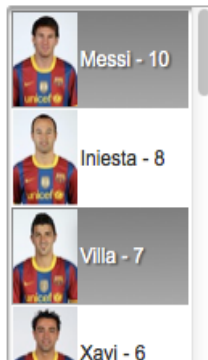
Custom Content

Custom content can be displayed for each item using column components.

```

<p:selectManyMenu value="#{bean.selectedPlayers}" converter="player" var="p">
  <f:selectItems value="#{bean.players}" var="player"
    itemLabel="#{player.name}" itemValue="#{player}" />
  <p:column>
    <p:graphicImage value="/images/barca/#{p.photo}" width="40"/>
  </p:column>
  <p:column>
    #{p.name} - #{p.number}
  </p:column>
</p:selectManyMenu>

```



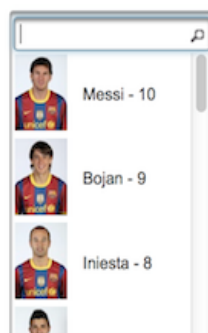
Filtering

Filtering is enabled by setting filter attribute to true. There are four filter modes; *startsWith*, *contains*, *endsWith* and *custom*. In custom mode, *filterFunction* must be defined as the name of the javascript function that takes the item value and filter as parameters to return a boolean to accept or reject a value. To add a filter to previous example;

```

<p:selectManyMenu value="#{menuBean.selectedPlayer}" converter="player" var="p"
  filter="true" filterMatchMode="contains">
  ...
</p:selectManyMenu>

```



Checkbox

SelectManyMenu has built-in support for checkbox based multiple selection, when enabled by *showCheckbox* option, checkboxes are displayed next to each column.

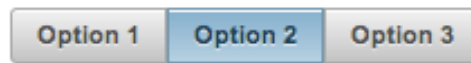
Skinning

SelectManyMenu resides in a container that *style* and *styleClass* attributes apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|------------------------|-------------------------|
| .ui-selectmanymenu | Main container element. |
| .ui-selectlistbox-item | Each item in list. |

3.121 SelectOneButton

SelectOneButton is an input component to do a single select.



Info

| | |
|------------------|-------------------------------------------------------------------------|
| Tag | selectOneButton |
| Component Class | org.primefaces.component.selectonebutton.SelectOneButton |
| Component Type | org.primefaces.component.SelectOneButton |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SelectOneButtonRenderer |
| Renderer Class | org.primefaces.component.selectonebutton.SelectOneButtonRenderer |

Attributes

| Name | Default | Type | Description |
|---------------------|---------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component referring to a List. |
| converter | null | Converter/String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |
| validator | null | MethodExpr | A method expression that refers to a method validating the input |
| valueChangeListener | null | MethodExpr | A method expression that refers to a method for handling a valuechangeevent |
| requiredMessage | null | String | Message to be displayed when required field |

| Name | Default | Type | Description |
|------------------|---------|---------|-------------------------------------------------|
| | | | validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| disabled | false | Boolean | Disables the component. |
| label | null | String | User presentable name. |
| onchange | null | String | Callback to execute on value change. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the container. |

Getting started with SelectOneButton

SelectOneButton usage is same as selectOneRadio component, buttons just replace the radios.

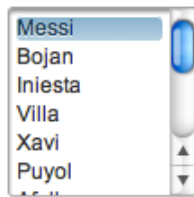
Skinning

SelectOneButton resides in a main container which *style* and *styleClass* attributes apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|---------------------|-------------------------|
| .ui-selectonebutton | Main container element. |

3.122 SelectOneListbox

SelectOneListbox is an extended version of the standard selectOneListbox component.



Info

| | |
|------------------|---------------------------------------------------------------------------|
| Tag | selectOneListbox |
| Component Class | org.primefaces.component.selectonelistbox.SelectOneListbox |
| Component Type | org.primefaces.component.SelectOneListbox |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SelectOneListboxRenderer |
| Renderer Class | org.primefaces.component.selectonelistbox.SelectOneListboxRenderer |

Attributes

| Name | Default | Type | Description |
|---------------------|---------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component referring to a List. |
| converter | null | Converter/ String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |
| validator | null | MethodExpr | A method expression that refers to a method validationg the input |
| valueChangeListener | null | MethodExpr | A method expression that refers to a method for |

| Name | Default | Type | Description |
|------------------|---------|---------|-------------------------------------------------------------------------------------------------|
| | | | handling a valuechangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| disabled | false | Boolean | Disables the component. |
| label | null | String | User presentable name. |
| onchange | null | String | Callback to execute on value change. |
| onclick | null | String | Callback for click event. |
| ondblclick | null | String | Callback for dblclick event. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the container. |
| tabindex | null | String | Position of the input element in the tabbing order. |
| value | null | String | Name of iterator to be used in custom content display. |
| var | null | String | Name of iterator to be used in custom content display. |
| filter | false | Boolean | Displays an input filter for the list. |
| filterMatchMode | null | String | Match mode for filtering, valid values are startsWith (default), contains, endsWith and custom. |
| filterFunction | null | String | Client side function to use in custom filterMatchMode. |
| caseSensitive | false | Boolean | Defines if filtering would be case sensitive. |
| scrollHeight | null | Integer | Defines the height of the scrollable area. |

Getting started with SelectOneListbox

SelectOneListbox usage is same as the standard one.

Custom Content

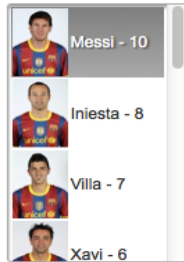
Custom content can be displayed for each item using column components.


```

<p:selectOneListbox value="#{bean.player}" converter="player" var="p">
  <f:selectItems value="#{bean.players}" var="player"
    itemLabel="#{player.name}" itemValue="#{player}" />

  <p:column>
    <p:graphicImage value="/images/barca/#{p.photo}" width="40"/>
  </p:column>
  <p:column>
    #{p.name} - #{p.number}
  </p:column>
</p:selectOneListbox>

```



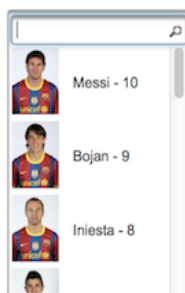
Filtering

Filtering is enabled by setting filter attribute to true. There are four filter modes; *startsWith*, *contains*, *endsWith* and *custom*. In custom mode, *filterFunction* must be defined as the name of the javascript function that takes the item value and filter as parameters to return a boolean to accept or reject a value. To add a filter to previous example;

```

<p:selectOneListbox value="#{menuBean.selectedPlayer}" converter="player" var="p"
  filter="true" filterMatchMode="contains">
  ...
</p:selectOneListbox>

```



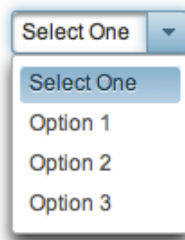
Skinning

SelectOneListbox resides in a main container which *style* and *styleClass* attributes apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|------------------------|-------------------------|
| .ui-selectonelistbox | Main container element. |
| .ui-selectlistbox-item | Each item in list. |

3.123 SelectOneMenu

SelectOneMenu is an extended version of the standard SelectOneMenu.



Info

| | |
|------------------|---------------------------------------------------------------------|
| Tag | selectOneMenu |
| Component Class | org.primefaces.component.selectonemenu.SelectOneMenu |
| Component Type | org.primefaces.component.SelectOneMenu |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SelectOneMenuRenderer |
| Renderer Class | org.primefaces.component.selectonemenu.SelectOneMenuRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component. |
| converter | null | Converter/ String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | 0 | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | 0 | Boolean | Marks component as required |
| validator | null | MethodExpr | A method expression that refers to a method validating the input |

| Name | Default | Type | Description |
|---------------------|-------------|------------|---------------------------------------------------------------------------------------------|
| valueChangeListener | null | MethodExpr | A method expression that refers to a method for handling a valuechangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| effect | blind | String | Name of the toggle animation. |
| effectSpeed | normal | String | Duration of toggle animation, valid values are "slow", "normal" and "fast". |
| disabled | false | Boolean | Disables the component. |
| label | null | String | User presentable name. |
| onchange | null | String | Client side callback to execute on value change. |
| onkeyup | null | String | Client side callback to execute on keyup. |
| onkeydown | null | String | Client side callback to execute on keydown. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the container. |
| var | null | String | Name of the item iterator. |
| height | auto | Integer | Height of the overlay. |
| tabindex | null | String | Tabindex of the input. |
| editable | false | Boolean | When true, input becomes editable. |
| filter | false | Boolean | Renders an input field as a filter. |
| filterMatchMode | starts With | String | Match mode for filtering, valid values are startsWith, contains, endsWith and custom. |
| filterFunction | null | String | Client side function to use in custom filtering. |
| caseSensitive | false | Boolean | Defines if filtering would be case sensitive. |
| maxLength | null | Integer | Number of maximum characters allowed in editable selectOneMenu. |
| appendTo | null | String | Appends the overlay to the element defined by search expression. Defaults to document body. |
| title | null | String | Advisory tooltip information. |
| syncTooltip | false | Boolean | Updates the title of the component with the description of the selected item. |

| Name | Default | Type | Description |
|---------------|---------|---------|---------------------------------------------------------------------------------------------------------|
| labelTemplate | null | String | Displays label of the element in a custom template. Valid placeholder is {0}. |
| onfocus | null | String | Client side callback to execute when element receives focus. |
| onblur | null | String | Client side callback to execute when element loses focus. |
| autoWidth | true | Boolean | Calculates a fixed width based on the width of the maximum option label. Set to false for custom width. |

Getting started with SelectOneMenu

Basic SelectOneMenu usage is same as the standard one.

Custom Content

SelectOneMenu can display custom content in overlay panel by using column component and the var option to refer to each item.

```
public class MenuBean {
    private List<Player> players;
    private Player selectedPlayer;

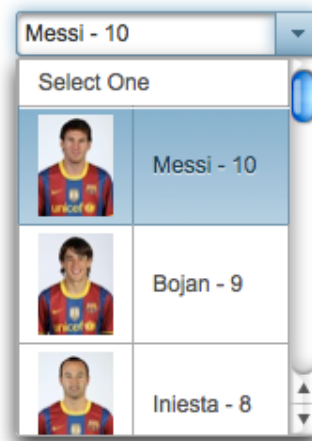
    public OrderListBean() {
        players = new ArrayList<Player>();

        players.add(new Player("Messi", 10, "messi.jpg"));
        //more players
    }

    //getters and setters
}
```

```
<p:selectOneMenu value="#{menuBean.selectedPlayer}" converter="player" var="p">
    <f:selectItem itemLabel="Select One" itemValue="" />
    <f:selectItems value="#{menuBean.players}" var="player"
        itemLabel="#{player.name}" itemValue="#{player}"/>
    <p:column>
        <p:graphicImage value="/images/barca/#{p.photo}" width="40" height="50"/>
    </p:column>

    <p:column>
        #{p.name} - #{p.number}
    </p:column>
</p:selectOneMenu>
```

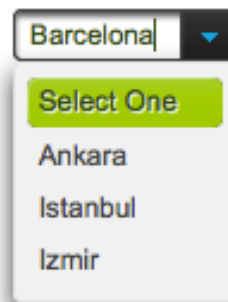


Effects

An animation is executed to show and hide the overlay menu, default effect is fade and following options are available for *effect* attribute; blind, bounce, clip, drop, explode, fold, highlight, puff, pulsate, scale, shake, size, slide and none.

Editable

Editable SelectOneMenu provides a UI to either choose from the predefined options or enter a manual input. Set *editable* option to true to use this feature.

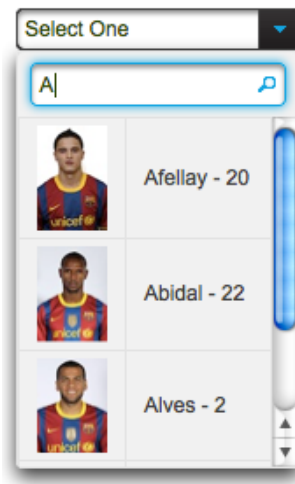


Filtering

When filtering is enabled with setting *filter* on, an input field is rendered at overlay header and on keyup event filtering is executed on client side using *filterMatchMode*. Default modes of *filterMatchMode* are *startsWith*, *contains*, *endsWith* and *custom*. Custom mode requires a javascript function to do the filtering.

```
<p:selectOneMenu value="#{bean.selectedOptions}"
  filterMatchMode="custom" filterFunction="customFilter">
  <f:selectItems value="#{bean.options}" />
</p:selectOneMenu>
```

```
function customFilter(itemLabel, filterValue) {
  //return true to accept and false to reject
}
```



Ajax Behavior Events

In addition to the standard events like "change", custom "itemSelect" event is also available to invoke when an item is selected from dropdown.

Client Side API

Widget: *PrimeFaces.widget.SelectOneMenu*

| Method | Params | Return Type | Description |
|--------------------|------------------|-------------|---------------------------------|
| show() | - | void | Shows overlay menu. |
| hide() | - | void | Hides overlay menu. |
| blur() | - | void | Invokes blur event. |
| focus() | - | void | Invokes focus event. |
| enable() | - | void | Enables component. |
| disable() | - | void | Disabled component. |
| selectValue() | value: itemValue | void | Selects given value. |
| getSelectedValue() | - | Object | Returns value of selected item. |
| getSelectedLabel() | | String | Returns label of selected item. |

Skinning

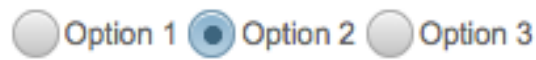
SelectOneMenu resides in a container element that *style* and *styleClass* attributes apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|---------------------------|-----------------------------|
| .ui-selectonemenu | Main container. |
| .ui-selectonemenu-label | Label of the component. |
| .ui-selectonemenu-trigger | Container of dropdown icon. |

| Style Class | Applies |
|-------------------------|------------------------|
| .ui-selectonemenu-items | Items list. |
| .ui-selectonemenu-items | Each item in the list. |

3.124 SelectOneRadio

SelectOneRadio is an extended version of the standard SelectOneRadio with theme integration.



Info

| | |
|------------------|-----------------------------------------------------------------------|
| Tag | selectOneRadio |
| Component Class | org.primefaces.component.selectoneradio.SelectOneRadio |
| Component Type | org.primefaces.component.SelectOneRadio |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SelectOneRadioRenderer |
| Renderer Class | org.primefaces.component.selectoneradio.SelectOneRadioRenderer |

Attributes

| Name | Default | Type | Description |
|---------------------|---------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component referring to a List. |
| converter | null | Converter/ String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | 0 | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | 0 | Boolean | Marks component as required |
| validator | null | MethodExpr | A method expression that refers to a method validationg the input |
| valueChangeListener | null | MethodExpr | A method expression that refers to a method for handling a valuechangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |

| Name | Default | Type | Description |
|------------------|-------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------|
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| disabled | false | Boolean | Disables the component. |
| label | null | String | User presentable name. |
| layout | line Direction | String | Layout of the radiobuttons, valid values are <i>lineDirection</i> , <i>pageDirection</i> , <i>custom</i> , <i>responsive</i> and <i>grid</i> . |
| columns | 0 | Integer | Number of columns in grid layout. |
| onchange | null | String | Callback to execute on value change. |
| onclick | null | String | Callback to execute on click of a radio. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the container. |
| tabindex | null | String | Specifies the tab order of element in tab navigation. |
| plain | false | Boolean | Plain mode displays radiobuttons using native browser rendering instead of themes. |

Getting started with SelectOneRadio

SelectOneRadio usage is same as the standard one.

Custom Layout

Standard selectOneRadio component only supports horizontal and vertical rendering of the radio buttons with a strict table markup. PrimeFaces SelectOneRadio on the other hand provides a flexible layout option so that radio buttons can be located anywhere on the page. This is implemented by setting layout option to custom and with standalone radioButton components. Note that in custom mode, selectOneRadio itself does not render any output.

```
<p:selectOneRadio id="customRadio" value="#{formBean.option}" layout="custom">
  <f:selectItem itemLabel="Option 1" itemValue="1" />
  <f:selectItem itemLabel="Option 2" itemValue="2" />
  <f:selectItem itemLabel="Option 3" itemValue="3" />
</p:selectOneRadio>
```

```

<h:panelGrid columns="3">
  <p:radioButton id="opt1" for="customRadio" itemIndex="0"/>
  <h:outputLabel for="opt1" value="Option 1" />
  <p:spinner />

  <p:radioButton id="opt2" for="customRadio" itemIndex="1"/>
  <h:outputLabel for="opt2" value="Option 2" />
  <p:inputText />

  <p:radioButton id="opt3" for="customRadio" itemIndex="2"/>
  <h:outputLabel for="opt3" value="Option 3" />
  <p:calendar />
</h:panelGrid>

```

RadioButton's for attribute should refer to a selectOneRadio component and itemIndex points to the index of the selectItem. When using custom layout option, selectOneRadio component should be placed above any radioButton that points to the selectOneRadio.

Client Side API

Widget: *PrimeFaces.widget.SelectOneRadio*

| Method | Params | Return Type | Description |
|-----------|--------|-------------|---------------------|
| enable() | - | void | Enables component. |
| disable() | - | void | Disables component. |

Skinning

SelectOneRadio resides in a main container which *style* and *styleClass* attributes apply. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Style Class | Applies |
|----------------------|---------------------------------|
| .ui-selectoneradio | Main container element. |
| .ui-radiobutton | Container of a radio button. |
| .ui-radiobutton-box | Container of radio button icon. |
| .ui-radiobutton-icon | Radio button icon. |

3.125 Separator

Separator displays a horizontal line to separate content.

Info

| | |
|------------------|-------------------------------------------------------------|
| Tag | separator |
| Component Class | org.primefaces.component.separator.Separator |
| Component Type | org.primefaces.component.Separator |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SeparatorRenderer |
| Renderer Class | org.primefaces.component.separator.SeparatorRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UICoMponent instance in a backing bean |
| title | null | String | Advisory tooltip informaton. |
| style | null | String | Inline style of the separator. |
| styleClass | null | String | Style class of the separator. |

Getting started with Separator

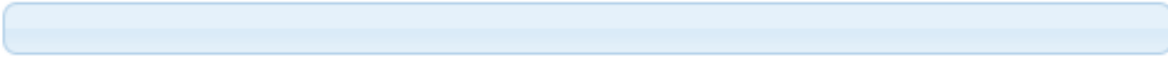
In its simplest form, separator is used as;

```
//content
<p:separator />
//content
```

Dimensions

Separator renders a `<hr />` tag which style and styleClass options apply.

```
<p:separator style="width:500px;height:20px" />
```



Special Separators

Separator can be used inside other components such as menu when supported.

```
<p:menu>
  //submenu or menuitem
  <p:separator />
  //submenu or menuitem
</p:menu>
```

Skinning

As mentioned in dimensions section, style and styleClass options can be used to style the separator. Following is the list of structural style classes;

| Class | Applies |
|---------------|-------------------|
| .ui-separator | Separator element |

As skinning style classes are global, see the main theming section for more information.

3.126 Signature

Signature is used to draw a signature as an input. Various options such as background color, foreground color, thickness are available for customization. Signature also supports touch enabled devices and legacy browsers without canvas support.



Info

| | |
|------------------|-------------------------------------------------------------|
| Tag | signature |
| Component Class | org.primefaces.component.signature.Signature |
| Component Type | org.primefaces.component.Signature |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SignatureRenderer |
| Renderer Class | org.primefaces.component.signature.SignatureRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component than can be either an EL expression of a literal text |
| converter | null | Converter/ String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |

| Name | Default | Type | Description |
|---------------------|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| immediate | false | Boolean | Boolean value that specifies the lifecycle phase the valueChangeEvents should be processed, when true the events will be fired at "apply request values", if immediate is set to false, valueChange Events are fired in "process validations" phase |
| required | False | Boolean | Marks component as required |
| validator | null | Method Expr | A method binding expression that refers to a method validationg the input |
| valueChangeListener | null | Method Expr | A method binding expression that refers to a method for handling a valuchangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget |
| backgroundColor | #ffffff | String | Background color as hex value |
| color | #000000 | String | Foreground color as hex value |
| thickness | 2 | Integer | Thickness of the lines |
| style | null | String | Inline style of the component |
| styleClass | null | String | Style class of the component. |
| readonly | false | Boolean | When enabled, signature is used for display purposes only. |
| guideline | false | Boolean | Adds a guideline when enabled |
| guidelineColor | #a0a0a0 | String | Color of the guideline |
| guidelineOffset | 25 | String | Offset of guideline from bottom |
| guidelineIndent | 10 | Boolean | Guide line indent from the edges |
| onchange | null | String | Client side callback to execute when signature changes. |
| base65Value | null | String | Write-only value used to pass the value in base64 to backing bean |

Getting started with Signature

Value is interpreted as JSON so at backing bean should be a string value.

```
<p:signature style="width:400px;height:200px" value="#{signatureView.value}" />
```

```
public class SignatureView {  
    private String value;  
  
    public String getValue() {  
        return value;  
    }  
  
    public void setValue(String value) {  
        this.value = value;  
    }  
}
```

Guideline

Guideline adds a horizontal line to indicate the area to sign, attributes such as `guidelineColor`, `guidelineOffset` and `guidelineIndent` can be used to customize this area.

Convert to Binary

Signature value is represented as a JSON array at client side and this value is also passed as a java string to backend bean, however if you need to convert this to a `byte[]` or write it to an `outputStream` following helper class can be used.

```
import java.awt.BasicStroke;
import java.awt.Color;
import java.awt.Graphics2D;
import java.awt.RenderingHints;
import java.awt.image.BufferedImage;
import java.io.ByteArrayOutputStream;
import java.io.IOException;
import java.io.OutputStream;
import java.util.ArrayList;
import java.util.List;
import java.util.regex.Matcher;
import java.util.regex.Pattern;

import javax.imageio.ImageIO;

public class SigGen {

    private static final String IMAGE_FORMAT = "png";
    private static final int SIGNATURE_HEIGHT = 200;
    private static final int SIGNATURE_WIDTH = 400;

    /**
     * A point along a line within a signature.
     */
    private static class Point {

        private int x;
        private int y;

        public Point(float x, float y) {
            this.x = Math.round(x);
            this.y = Math.round(y);
        }
    }
}
```



```

/**
 * Extract a signature from its JSON encoding and redraw it as an image.
 *
 * @param jsonEncoding the JSON representation of the signature
 * @param output the destination stream for the image
 * @throws IOException if a problem writing the signature
 */
public static void generateSignature(String jsonEncoding, OutputStream output)
    throws IOException {
    output.write(redrawSignature(extractSignature(jsonEncoding)));
    output.close();
}

/**
 * Extract the signature lines and points from the JSON encoding.
 *
 * @param jsonEncoding the JSON representation of the signature
 * @return the retrieved lines and points
 */
private static List<List<Point>> extractSignature(String jsonEncoding) {
    List<List<Point>> lines = new ArrayList<List<Point>>();
    Matcher lineMatcher =
        Pattern.compile("\\[[?:,?\\[-?\\[\\d\\.]+,-?\\[\\d\\.]+\\]\\]\\]").
        matcher(jsonEncoding);
    while (lineMatcher.find()) {
        Matcher pointMatcher =
            Pattern.compile("\\[-?\\[\\d\\.]+,-?\\[\\d\\.]+\\]").
            matcher(lineMatcher.group(1));
        List<Point> line = new ArrayList<Point>();
        lines.add(line);
        while (pointMatcher.find()) {
            line.add(new Point(Float.parseFloat(pointMatcher.group(1)),
                Float.parseFloat(pointMatcher.group(2))));
        }
    }
    return lines;
}

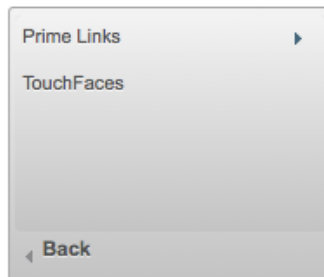
/**
 * Redraw the signature from its lines definition.
 *
 * @param lines the individual lines in the signature
 * @return the corresponding signature image
 * @throws IOException if a problem generating the signature
 */
private static byte[] redrawSignature(List<List<Point>> lines) throws IOException {
    BufferedImage signature = new BufferedImage(
        SIGNATURE_WIDTH, SIGNATURE_HEIGHT, BufferedImage.TYPE_BYTE_GRAY);
    Graphics2D g = (Graphics2D)signature.getGraphics();
    g.setColor(Color.WHITE);
    g.fillRect(0, 0, signature.getWidth(), signature.getHeight());
    g.setColor(Color.BLACK);
    g.setStroke(new BasicStroke(2, BasicStroke.CAP_ROUND, BasicStroke.JOIN_ROUND));
    g.setRenderingHint(
        RenderingHints.KEY_ANTIALIASING, RenderingHints.VALUE_ANTIALIAS_ON);
    Point lastPoint = null;
    for (List<Point> line : lines) {
        for (Point point : line) {
            if (lastPoint != null) {
                g.drawLine(lastPoint.x, lastPoint.y, point.x, point.y);
            }
            lastPoint = point;
        }
        lastPoint = null;
    }
    ByteArrayOutputStream output = new ByteArrayOutputStream();
    ImageIO.write(signature, IMAGE_FORMAT, output);
    ImageIO.write(signature, IMAGE_FORMAT, output);
    return output.toByteArray();
}
}

return output.toByteArray();

```

3.127 SlideMenu

SlideMenu is used to display nested submenus with sliding animation.



Info

| | |
|------------------|-------------------------------------------------------------|
| Tag | slideMenu |
| Component Class | org.primefaces.component.slidemenu.SlideMenu |
| Component Type | org.primefaces.component.SlideMenu |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SlideMenuRenderer |
| Renderer Class | org.primefaces.component.slidemenu.SlideMenuRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|-----------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| model | null | MenuModel | MenuModel instance for programmatic menu. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| backLabel | Back | String | Text for back link. |
| trigger | null | String | Id of the component whose triggerEvent will show the dynamic positioned menu. |
| my | null | String | Corner of menu to align with trigger element. |

| Name | Default | Type | Description |
|--------------|---------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| at | null | String | Corner of trigger to align with menu element. |
| overlay | false | Boolean | Defines positioning, when enabled menu is displayed with absolute position relative to the trigger. Default is false, meaning static positioning. |
| triggerEvent | click | String | Event name of trigger that will show the dynamic positioned menu. |

Getting started with the SlideMenu

SlideMenu consists of submenus and menuitems, submenus can be nested and each nested submenu will be displayed with a slide animation.

```
<p:slideMenu>
  <p:submenu label="Ajax Menuitems" icon="ui-icon-refresh">
    <p:menuitem value="Save" actionListener="#{buttonBean.save}"
      update="messages" icon="ui-icon-disk" />
    <p:menuitem value="Update" actionListener="#{buttonBean.update}"
      update="messages" icon="ui-icon-arrowrefresh-1-w" />
  </p:submenu>

  <p:submenu label="Non-Ajax Menuitem" icon="ui-icon-newwin">
    <p:menuitem value="Delete" actionListener="#{buttonBean.delete}"
      update="messages" ajax="false" icon="ui-icon-close"/>
  </p:submenu>

  <p:separator />

  <p:submenu label="Navigations" icon="ui-icon-extlink">
    <p:submenu label="Prime Links">
      <p:menuitem value="Prime" url="http://www.prim.com.tr" />
      <p:menuitem value="PrimeFaces" url="http://www.primefaces.org" />
    </p:submenu>
    <p:menuitem value="Mobile" url="/mobile" />
  </p:submenu>
</p:slideMenu>
```

Overlay

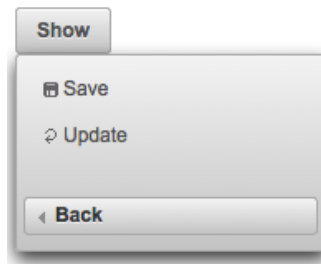
SlideMenu can be positioned relative to a trigger component, following sample attaches a slideMenu to the button so that whenever the button is clicked menu will be displayed in an overlay itself.

```
<p:commandButton type="button" value="Show" id="btn" />

<p:slideMenu trigger="btn" my="left top" at="left bottom">

  //content

</p:slideMenu>
```



Client Side API

Widget: *PrimeFaces.widget.SlideMenu*

| Method | Params | Return Type | Description |
|---------|--------|-------------|-----------------------------------|
| show() | - | void | Shows overlay menu. |
| hide() | - | void | Hides overlay menu. |
| align() | - | void | Aligns overlay menu with trigger. |

Skinning

SlideMenu resides in a main container which *style* and *styleClass* attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|------------------------|-------------------------------|
| .ui-menu .ui-slidemenu | Container element of menu. |
| .ui-slidemenu-wrapper | Wrapper element for content. |
| .ui-slidemenu-content | Content container. |
| .ui-slidemenu-backward | Back navigator. |
| .ui-menu-list | List container |
| .ui-menuitem | Each menu item |
| .ui-menuitem-link | Anchor element in a link item |
| .ui-menuitem-text | Text element in an item |

As skinning style classes are global, see the main theming section for more information.

3.128 Slider

Slider is used to provide input with various customization options like orientation, display modes and skinning.



Info

| | |
|------------------|-------------------------------------------------------|
| Tag | slider |
| Component Class | org.primefaces.component.slider.Slider |
| Component Type | org.primefaces.component.Slider |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SliderRenderer |
| Renderer Class | org.primefaces.component.slider.SliderRenderer |

Attributes

| Name | Default | Type | Description |
|--------------|------------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| for | null | String | Id of the input text that the slider will be used for |
| display | null | String | Id of the component to display the slider value. |
| minValue | 0 | Integer | Minimum value of the slider |
| maxValue | 100 | Integer | Maximum value of the slider |
| style | null | String | Inline style of the container element |
| styleClass | null | String | Style class of the container element |
| animate | true | Boolean | Boolean value to enable/disable the animated move when background of slider is clicked |
| type | horizontal | String | Sets the type of the slider, "horizontal" or "vertical". |
| step | 1 | Integer | Fixed pixel increments that the slider move in |
| disabled | 0 | Boolean | Disables or enables the slider. |
| onSlideStart | null | String | Client side callback to execute when slide begins. |

| Name | Default | Type | Description |
|-----------------|---------|---------|----------------------------------------------------------------------------------------------------|
| onSlide | null | String | Client side callback to execute during sliding. |
| onSlideEnd | null | String | Client side callback to execute when slide ends. |
| range | false | Boolean | When enabled, two handles are provided for selection a range. |
| displayTemplate | null | String | String template to use when updating the display. Valid placeholders are {value}, {min} and {max}. |

Getting started with Slider

Slider requires an input component to work with, *for* attribute is used to set the id of the input component whose input will be provided by the slider.

```
public class SliderBean {
    private int number;

    public int getNumber() {
        return number;
    }

    public void setNumber(int number) {
        this.number = number;
    }
}
```

```
<h:inputText id="number" value="#{sliderBean.number}" />
<p:slider for="number" />
```

Display Value

Using *display* feature, you can present a readonly display value and still use slider to provide input, in this case *for* should refer to a hidden input to bind the value.

```
<h:inputHidden id="number" value="#{sliderBean.number}" />
<h:outputText value="Set ratio to %" />
<h:outputText id="output" value="#{sliderBean.number}" />
<p:slider for="number" display="output" />
```

Set ratio to %21



Vertical Slider

By default slider's orientation is horizontal, vertical sliding is also supported and can be set using the *type* attribute.

```
<h:inputText id="number" value="#{sliderController.number}" />
<p:slider for="number" type="vertical" minValue="0" maxValue="200"/>
```



Step

Step factor defines the interval between each point during sliding. Default value is one and it is customized using *step* option.

```
<h:inputText id="number" value="#{sliderBean.number}" />
<p:slider for="number" step="10" />
```

Animation

Sliding is animated by default, if you want to turn it off animate attribute set the *animate* option to false.

Boundaries

Maximum and minimum boundaries for the sliding is defined using *minValue* and *maxValue* attributes. Following slider can slide between -100 and +100.

```
<h:inputText id="number" value="#{sliderBean.number}" />
<p:slider for="number" minValue="-100" maxValue="100"/>
```

Range Slider

Selecting a range with min-max values are supported by slider. To enable this feature, set *range* attribute to true and provide a comma separate pair of input fields to attach min-max values. Following sample demonstrates a range slider along with the display template feature for feedback;

```

<h:outputText id="displayRange"
    value="Between #{sliderBean.number6} and #{sliderBean.number7}"/>

<p:slider for="txt6,txt7" display="displayRange" style="width:400px" range="true"
    displayTemplate="Between {min} and {max}"/>

<h:inputHidden id="min" value="#{sliderBean.min}" />
<h:inputHidden id="max" value="#{sliderBean.max}" />

```

Client Side Callbacks

Slider provides three callbacks to hook-in your custom javascript, `onSlideStart`, `onSlide` and `onSlideEnd`. All of these callbacks receive two parameters; slide event and the ui object containing information about the event.

```

<h:inputText id="number" value="#{sliderBean.number}" />

<p:slider for="number" onSlideEnd="handleSlideEnd(event, ui)"/>

```

```

function handleSlideEnd(event, ui) {
    //ui.helper = Handle element of slider
    //ui.value = Current value of slider
}

```

Ajax Behavior Events

Slider provides one ajax behavior event called *slideEnd* that is fired when the slide completes. If you have a listener defined, it will be called by passing *org.primefaces.event.SlideEndEvent* instance. Example below adds a message and displays it using growl component when slide ends.

```

<h:inputText id="number" value="#{sliderBean.number}" />

<p:slider for="number">
    <p:ajax event="slideEnd" listener="#{sliderBean.onSlideEnd}" update="msgs" />
</p:slider>

<p:messages id="msgs" />

```



```

public class SliderBean {

    private int number;

    public int getNumber() {
        return number;
    }

    public void setNumber(int number) {
        this.number = number;
    }

    public void onSlideEnd(SlideEndEvent event) {
        int value = event.getValue();
        //add faces message
    }

}

```

Client Side API

Widget: *PrimeFaces.widget.Slider*

| Method | Params | Return Type | Description |
|-----------------|--------------------------------|-------------|-----------------------------------------|
| getValue() | - | Number | Returns the current value |
| setValue(value) | value: Value to set | void | Updates slider value with provided one. |
| disable() | index: Index of tab to disable | void | Disables slider. |
| enable() | index: Index of tab to enable | void | Enables slider. |

Skinning

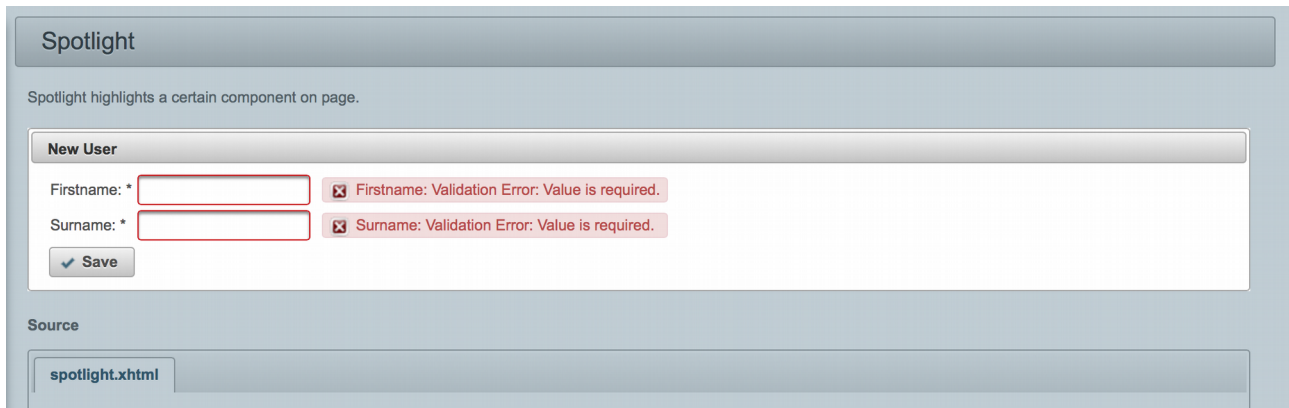
Slider resides in a main container which *style* and *styleClass* attributes apply. These attributes are handy to specify the dimensions of the slider. Following is the list of structural style classes;

| Class | Applies |
|-----------------------|---------------------------------------------|
| .ui-slider | Main container element |
| .ui-slider-horizontal | Main container element of horizontal slider |
| .ui-slider-vertical | Main container element of vertical slider |
| .ui-slider-handle | Slider handle |

As skinning style classes are global, see the main theming section for more information.

3.129 Spotlight

Spotlight highlights a certain component on page.



Info

| | |
|------------------|-------------------------------------------------------------|
| Tag | spotlight |
| Component Class | org.primefaces.component.spotlight.Spotlight |
| Component Type | org.primefaces.component.Spotlight |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SpotlightRenderer |
| Renderer Class | org.primefaces.component.spotlight.SpotlightRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | false | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| target | null | String | Component to highlight. |
| active | false | Boolean | When true, spotlight is activated initially. |

Getting started with Spotlight

Spotlight is accessed using client side api. Clicking the button highlights the panel below;

```
<p:panel id="pnl" header="Panel">
  //content
</p:panel>

<p:commandButton value="Highlight" onclick="PF('spot').show()" />

<p:spotlight target="pnl" widgetVar="spot" />
```

Client Side API

Widget: *PrimeFaces.widget.Spotlight*

| Method | Params | Return Type | Description |
|--------|--------|-------------|--------------------|
| show() | - | void | Highlights target. |
| hide() | - | void | Removes highlight. |

Skinning

Slider resides in a main container which *style* and *styleClass* attributes apply. These attributes are handy to specify the dimensions of the slider. As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes;

| Class | Applies |
|----------------------|--------------------------------------|
| .ui-spotlight | Mask element, common to all regions. |
| .ui-spotlight-top | Top mask element. |
| .ui-spotlight-bottom | Bottom mask element. |
| .ui-spotlight-left | Left mask element. |
| .ui-spotlight-right | Right mask element. |

3.130 Socket

Socket component is an agent that creates a push channel between the server and the client.

Info

| | |
|------------------|-------------------------------------------------------|
| Tag | socket |
| Component Class | org.primefaces.component.socket.Socket |
| Component Type | org.primefaces.component.Socket |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SocketRenderer |
| Renderer Class | org.primefaces.component.socket.SocketRenderer |

Attributes

| Name | Default | Type | Description |
|-------------------|--------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| channel | null | Object | Channel name of the connection. |
| transport | websocket | String | Desired protocol to be used valid values are websocket (default), sse, streaming, long-polling, jsonp. |
| fallbackTransport | long-polling | String | Fallback protocol to be used when desired transport is not supported in environment, valid values are websocket, sse, streaming, long-polling (default), jsonp. |
| onMessage | null | String | Javascript event handler that is processed when server publishes data. |
| onError | null | String | Javascript event handler that is processed when there is an error. |
| onClose | null | String | Javascript event handler for onClose callback of atmosphere. |
| onOpen | null | String | Javascript event handler for onOpen callback of atmosphere. |
| onReconnect | null | String | Javascript event handler for onReconnect callback of atmosphere. |

| Name | Default | Type | Description |
|--------------------|---------|---------|-------------------------------------------------------------------------|
| onMessagePublished | null | String | Javascript event handler for onMessagePublished callback of atmosphere. |
| onTransportFailure | null | String | Javascript event handler for onTransportFailure callback of atmosphere. |
| onLocalMessage | null | String | Javascript event handler for onLocalMessage callback of atmosphere. |
| autoConnect | true | Boolean | Connects to channel on page load when enabled. |

Getting Started with the Socket

See chapter 5, "PrimeFaces Push" for detailed information.

3.131 Spacer

Spacer is used to put spaces between elements.

Info

| | |
|------------------|-------------------------------------------------------|
| Tag | spacer |
| Component Class | org.primefaces.component.spacer.Spacer |
| Component Type | org.primefaces.component.Spacer |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SpacerRenderer |
| Renderer Class | org.primefaces.component.spacer.SpacerRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| title | null | String | Advisory tooltip informaton. |
| style | null | String | Inline style of the spacer. |
| styleClass | null | String | Style class of the spacer. |
| width | null | String | Width of the space. |
| height | null | String | Height of the space. |

Getting started with Spacer

Spacer is used by either specifying width or height of the space.

```
Spacer in this example separates this text <p:spacer width="100" height="10"> and
<p:spacer width="100" height="10"> this text.
```

Spacer in this example separates this text

and

this text.

3.132 Spinner

Spinner is an input component to provide a numerical input via increment and decrement buttons.



Info

| | |
|------------------|---------------------------------------------------------|
| Tag | spinner |
| Component Class | org.primefaces.component.spinner.Spinner |
| Component Type | org.primefaces.component.Spinner |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SpinnerRenderer |
| Renderer Class | org.primefaces.component.spinner.SpinnerRenderer |

Attributes

| Name | Default | Type | Description |
|---------------------|---------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component than can be either an EL expression of a literal text |
| converter | null | Converter/ String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| immediate | false | Boolean | Boolean value that specifies the lifecycle phase the valueChangeEvents should be processed, when true the events will be fired at "apply request values", if immediate is set to false, valueChange Events are fired in "process validations" phase |
| required | False | Boolean | Marks component as required |
| validator | null | Method Expr | A method binding expression that refers to a method validationg the input |
| valueChangeListener | null | Method | A method binding expression that refers to a |

| Name | Default | Type | Description |
|------------------|---------|---------|---------------------------------------------------------------------------------------------------------------------|
| | | Expr | method for handling a valuchangeevent |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| widgetVar | null | String | Name of the client side widget. |
| stepFactor | 1 | Double | Stepping factor for each increment and decrement |
| min | null | Double | Minimum boundary value |
| max | null | Double | Maximum boundary value |
| prefix | null | String | Prefix of the input |
| suffix | null | String | Suffix of the input |
| accesskey | null | String | Access key that when pressed transfers focus to the input element. |
| alt | null | String | Alternate textual description of the input field. |
| autocomplete | null | String | Controls browser autocomplete behavior. |
| dir | null | String | Direction indication for text that does not inherit directionality. Valid values are LTR and RTL. |
| disabled | false | Boolean | Disables input field |
| label | null | String | A localized user presentable name. |
| lang | null | String | Code describing the language used in the generated markup for this component. |
| maxlength | null | Integer | Maximum number of characters that may be entered in this field. |
| onblur | null | String | Client side callback to execute when input element loses focus. |
| onchange | null | String | Client side callback to execute when input element loses focus and its value has been modified since gaining focus. |
| onclick | null | String | Client side callback to execute when input element is clicked. |
| ondblclick | null | String | Client side callback to execute when input element is double clicked. |
| onfocus | null | String | Client side callback to execute when input element receives focus. |
| onkeydown | null | String | Client side callback to execute when a key is pressed down over input element. |

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------|
| onkeypress | null | String | Client side callback to execute when a key is pressed and released over input element. |
| onkeyup | null | String | Client side callback to execute when a key is released over input element. |
| onmousedown | null | String | Client side callback to execute when a pointer button is pressed down over input element |
| onmousemove | null | String | Client side callback to execute when a pointer button is moved within input element. |
| onmouseout | null | String | Client side callback to execute when a pointer button is moved away from input element. |
| onmouseover | null | String | Client side callback to execute when a pointer button is moved onto input element. |
| onmouseup | null | String | Client side callback to execute when a pointer button is released over input element. |
| onselect | null | String | Client side callback to execute when text within input element is selected by user. |
| placeholder | null | String | Specifies a short hint. |
| readonly | false | Boolean | Flag indicating that this component will prevent changes by the user. |
| size | null | Integer | Number of characters used to determine the width of the input element. |
| style | null | String | Inline style of the input element. |
| styleClass | null | String | Style class of the input element. |
| tabindex | null | Integer | Position of the input element in the tabbing order. |
| title | null | String | Advisory tooltip informaton. |

Getting Started with Spinner

Spinner is an input component and used just like a standard input text.

```
public class SpinnerBean {
    private int number;
    //getter and setter
}
```

```
<p:spinner value="#{spinnerBean.number}" />
```

Step Factor

Other than integers, spinner also support decimals so the fractional part can be controller with spinner as well. For decimals use the `stepFactor` attribute to specify stepping amount. Following example uses a `stepFactor` 0.25.

```
<p:spinner value="#{spinnerBean.number}" stepFactor="0.25"/>
```

```
public class SpinnerBean {
    private double number;
    //getter and setter
}
```

Output of this spinner would be;

After an increment happens a couple of times.

Prefix and Suffix

Prefix and Suffix options enable placing fixed strings on input field. Note that you would need to use a converter to avoid conversion errors since prefix/suffix will also be posted.

```
<p:spinner value="#{spinnerBean.number}" prefix="$" />
```

Boundaries

In order to restrict the boundary values, use `min` and `max` options.

```
<p:spinner value="#{spinnerBean.number}" min="0" max="100"/>
```

Ajax Spinner

Spinner can be ajaxified using client behaviors like `f:ajax` or `p:ajax`. In example below, an ajax request is done to update the `outputtext` with new value whenever a spinner button is clicked.

```
<p:spinner value="#{spinnerBean.number}">
    <p:ajax update="display" />
</p:spinner>

<h:outputText id="display" value="#{spinnerBean.number}" />
```

Skinning

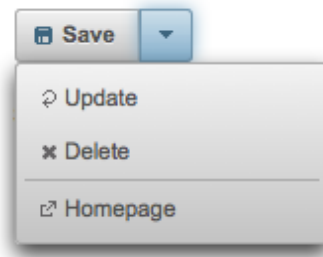
Spinner resides in a container element that using *style* and *styleClass* applies. Following is the list of structural style classes;

| Class | Applies |
|-------------------------|-----------------------------------|
| .ui-spinner | Main container element of spinner |
| .ui-spinner-input | Input field |
| .ui-spinner-button | Spinner buttons |
| .ui-spinner-button-up | Increment button |
| .ui-spinner-button-down | Decrement button |

As skinning style classes are global, see the main theming section for more information.

3.133 SplitButton

SplitButton displays a command by default and additional ones in an overlay.



Info

| | |
|------------------|-----------------------------------------------------------------|
| Tag | splitButton |
| Component Class | org.primefaces.component.splitbutton.SplitButton |
| Component Type | org.primefaces.component.SplitButton |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SplitButtonRenderer |
| Renderer Class | org.primefaces.component.splitbutton.SplitButtonRenderer |

Attributes

| Name | Default | Type | Description |
|----------------|---------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | String | Label for the button |
| action | null | MethodExpression/String | A method expression or a String outcome that'd be processed when button is clicked. |
| actionListener | null | MethodExpression | An actionlistener that'd be processed when button is clicked. |
| immediate | false | Boolean | Boolean value that determines the phaseId, when true actions are processed at apply_request_values, when false at invoke_application phase. |
| type | submit | String | Sets the behavior of the button. |
| ajax | true | Boolean | Specifies the submit mode, when set to true(default), submit would be made with Ajax. |

| Name | Default | Type | Description |
|---------------------|---------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| async | false | Boolean | When set to true, ajax requests are not queued. |
| process | null | String | Component(s) to process partially instead of whole view. |
| update | null | String | Component(s) to be updated with ajax. |
| onstart | null | String | Client side callback to execute before ajax request is begins. |
| oncomplete | null | String | Client side callback to execute when ajax request is completed. |
| onsuccess | null | String | Client side callback to execute when ajax request succeeds. |
| onerror | null | String | Client side callback to execute when ajax request fails. |
| global | true | Boolean | Defines whether to trigger ajaxStatus or not. |
| delay | null | String | If less than <i>delay</i> milliseconds elapses between calls to <i>request()</i> only the most recent one is sent and all other requests are discarded. If this option is not specified, or if the value of <i>delay</i> is the literal string 'none' without the quotes, no delay is used. |
| partialSubmit | false | Boolean | Enables serialization of values belonging to the partially processed components only. |
| partialSubmitFilter | null | String | Selector to use when partial submit is on, default is ":input" to select all descendant inputs of a partially processed components. |
| resetValues | false | Boolean | If true, local values of input components to be updated within the ajax request would be reset. |
| ignoreAutoUpdate | false | Boolean | If true, components which autoUpdate="true" will not be updated for this request. If not specified, or the value is false, no such indication is made. |
| timeout | 0 | Integer | Timeout for the ajax request in milliseconds. |
| style | null | String | Inline style of the button element. |
| styleClass | null | String | StyleClass of the button element. |
| onblur | null | String | Client side callback to execute when button loses focus. |
| onchange | null | String | Client side callback to execute when button loses focus and its value has been modified since gaining focus. |
| onclick | null | String | Client side callback to execute when button is clicked. |
| ondblclick | null | String | Client side callback to execute when button is double clicked. |
| onfocus | null | String | Client side callback to execute when button receives focus. |
| onkeydown | null | String | Client side callback to execute when a key is pressed down over button. |

| Name | Default | Type | Description |
|-------------|---------|---------|---------------------------------------------------------------------------------------------------|
| onkeypress | null | String | Client side callback to execute when a key is pressed and released over button. |
| onkeyup | null | String | Client side callback to execute when a key is released over button. |
| onmousedown | null | String | Client side callback to execute when a pointer button is pressed down over button. |
| onmousemove | null | String | Client side callback to execute when a pointer button is moved within button. |
| onmouseout | null | String | Client side callback to execute when a pointer button is moved away from button. |
| onmouseover | null | String | Client side callback to execute when a pointer button is moved onto button. |
| onmouseup | null | String | Client side callback to execute when a pointer button is released over button. |
| onselect | null | String | Client side callback to execute when text within button is selected by user. |
| accesskey | null | String | Access key that when pressed transfers focus to the button. |
| alt | null | String | Alternate textual description of the button. |
| dir | null | String | Direction indication for text that does not inherit directionality. Valid values are LTR and RTL. |
| disabled | false | Boolean | Disables the button. |
| image | null | String | Style class for the button icon. (deprecated: use icon) |
| label | null | String | A localized user presentable name. |
| lang | null | String | Code describing the language used in the generated markup for this component. |
| tabindex | null | Integer | Position of the button element in the tabbing order. |
| title | null | String | Advisory tooltip information. |
| readonly | false | Boolean | Flag indicating that this component will prevent changes by the user. |
| icon | null | String | Icon of the button as a css class. |
| iconPos | left | String | Position of the icon. |
| widgetVar | null | String | Name of the client side widget. |
| appendTo | null | String | Appends the overlay to the element defined by search expression. Defaults to document body. |
| form | null | String | Form to serialize for an ajax request. Default is the enclosing form. |

| Name | Default | Type | Description |
|----------------|---------|--------|------------------------------------------|
| menuStyleClass | null | String | Style class of the overlay menu element. |

Getting started with SplitButton

SplitButton usage is similar to a regular `commandButton`. Additional commands are placed inside the component and displayed in an overlay. In example below, clicking the save button invokes `save` method of the bean and updates messages. Nested options defined as `menuitems` do ajax, non-ajax requests as well as regular navigation to an external url.

```
<p:splitButton value="Save" actionListener="#{buttonBean.save}" update="messages"
  icon="ui-icon-disk">
  <p:menuItem value="Update" actionListener="#{buttonBean.update}"
    update="messages" icon="ui-icon-arrowrefresh-1-w"/>
  <p:menuItem value="Delete" actionListener="#{buttonBean.delete}" ajax="false"
    icon="ui-icon-close"/>
  <p:separator />
  <p:menuItem value="Homepage" url="http://www.primefaces.org"
    icon="ui-icon-extlink"/>
</p:splitButton>
```

Client Side API

Widget: *PrimeFaces.widget.SplitButton*

| Method | Params | Return Type | Description |
|---------------------|--------|-------------|-------------------|
| <code>show()</code> | - | void | Displays overlay. |
| <code>hide()</code> | - | void | Hides overlay. |

Skinning

SplitButton renders a container element which *style* and *styleClass* applies. Following is the list of structural style classes;

| Style Class | Applies |
|-----------------------------------------|--------------------------------------|
| <code>.ui-splitbutton</code> | Container element. |
| <code>.ui-button</code> | Button element |
| <code>.ui-splitbutton-menubutton</code> | Dropdown button |
| <code>.ui-button-text-only</code> | Button element when icon is not used |
| <code>.ui-button-text</code> | Label of button |
| <code>.ui-menu</code> | Container element of menu |
| <code>.ui-menu-list</code> | List container |
| <code>.ui-menuitem</code> | Each menu item |
| <code>.ui-menuitem-link</code> | Anchor element in a link item |

| Style Class | Applies |
|-------------------|-------------------------|
| .ui-menuitem-text | Text element in an item |

As skinning style classes are global, see the main theming section for more information.

3.134 Submenu

Submenu is nested in menu components and represents a sub menu items.

Info

| | |
|------------------|-------------------------------------------------|
| Tag | submenu |
| Component Class | org.primefaces.component.submenu.Submenu |
| Component Type | org.primefaces.component.Submenu |
| Component Family | org.primefaces.component |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| label | null | String | Label of the submenu header. |
| icon | null | String | Icon of a submenu, see menuitem to see how it is used |
| style | null | String | Inline style of the submenu. |
| styleClass | null | String | Style class of the submenu. |
| expanded | false | Boolean | Defines the state of submenu. |

Getting started with Submenu

Please see Menu or Menubar section to find out how submenu is used with the menus.

3.135 Stack

Stack is a navigation component that mimics the stacks feature in Mac OS X.



Info

| | |
|------------------|-----------------------------------------------------|
| Tag | stack |
| Component Class | org.primefaces.component.stack.Stack |
| Component Type | org.primefaces.component.Stack |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.StackRenderer |
| Renderer Class | org.primefaces.component.stack.StackRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|-----------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| icon | null | String | An optional image to contain stacked items. |
| openSpeed | 300 | String | Speed of the animation when opening the stack. |
| closeSpeed | 300 | Integer | Speed of the animation when opening the stack. |
| widgetVar | null | String | Name of the client side widget. |
| model | null | MenuModel | MenuModel instance to create menus programmatically |
| expanded | false | Boolean | Whether to display stack as expanded or not. |

Getting started with Stack

Each item in the stack is represented with menuitems. Stack below has five items with different icons and labels.

```
<p:stack icon="/images/stack/stack.png">
  <p:menuitem value="Aperture" icon="/images/stack/aperture.png" url="#" />
  <p:menuitem value="Photoshop" icon="/images/stack/photoshop.png" url="#" />
  //...
</p:stack>
```

Initially stack will be rendered in collapsed mode;



Location

Stack is a fixed positioned element and location can be change via css. There's one important css selector for stack called *.ui-stack*. Override this style to change the location of stack.

```
.ui-stack {
  bottom: 28px;
  right: 40px;
}
```

Dynamic Menus

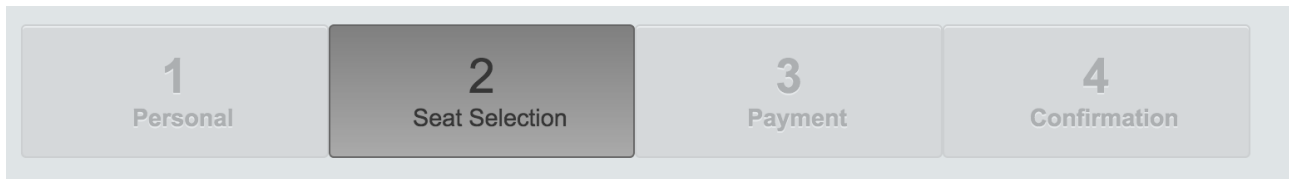
Menus can be created programmatically as well, see the dynamic menus part in menu component section for more information and an example.

Skinning

| Class | Applies |
|----------------------|---------------------------------|
| .ui-stack | Main container element of stack |
| .ui-stack ul li | Each item in stack |
| .ui-stack ul li img | Icon of a stack item |
| .ui-stack ul li span | Label of a stack item |

3.136 Steps

Steps components is an indicator for the steps in a workflow. Layout of steps component is optimized for responsive design.



Info

| | |
|------------------|-----------------------------------------------------|
| Tag | steps |
| Component Class | org.primefaces.component.steps.Steps |
| Component Type | org.primefaces.component.Steps |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.StepsRenderer |
| Renderer Class | org.primefaces.component.steps.StepsRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|-----------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| model | null | MenuModel | MenuModel instance to build menu dynamically. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| activeIndex | 0 | Integer | Index of the active tab. |
| widgetVar | null | String | Name of the client side widget. |
| readonly | true | Boolean | Defines whether items would be clickable or not. |

Getting started with Steps

Steps requires menuitems as children components, each menuitem is rendered as a step. Just like in any other menu component, menuitems can be utilized to do ajax requests, non-ajax requests and simple GET navigations.

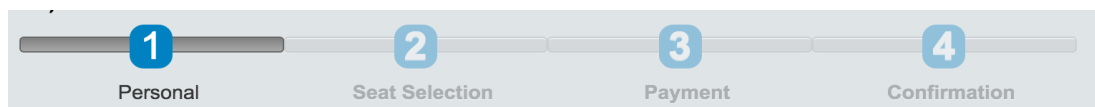
```
<p:steps activeIndex="1">
  <p:menuitem value="Personal" />
  <p:menuitem value="Seat Selection" />
  <p:menuitem value="Payment" />
  <p:menuitem value="Confirmation" />
</p:steps>
```

Skinning Steps

Steps resides in a main container which *style* and *styleClass* attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|----------------|-------------------------|
| .ui-steps | Main container element. |
| .ui-steps-item | Step element. |
| .ui-steps-name | Name of the step. |
| .ui-steps-item | Number of the step. |

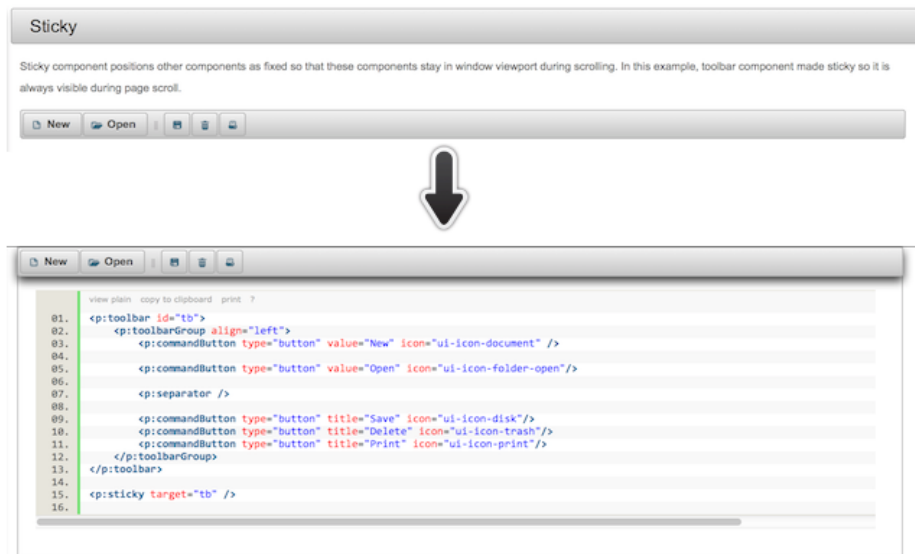
As skinning style classes are global, see the main theming section for more information. Here is an example of a styled steps having "custom" as its styleClass;



```
.ui-steps.custom {
  margin-bottom: 30px;
}
.ui-steps.custom .ui-steps-item .ui-menuitem-link {
  height: 10px;
  padding: 0 1em;
}
.ui-steps.custom .ui-steps-item .ui-steps-number {
  background-color: #0081c2;
  color: #FFFFFF;
  display: inline-block;
  width: 30px;
  border-radius: 10px;
  margin-top: -10px;
  margin-bottom: 10px;
  margin-bottom: 10px;
}
```

3.137 Sticky

Sticky component positions other components as fixed so that these components stay in window viewport during scrolling.



Info

| | |
|------------------|-------------------------------------------------------|
| Tag | sticky |
| Component Class | org.primefaces.component.sticky.Sticky |
| Component Type | org.primefaces.component.Sticky |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.StickyRenderer |
| Renderer Class | org.primefaces.component.sticky.StickyRenderer |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| target | null | String | Component to make sticky. |
| margin | 0 | Integer | Margin to the top of the page during fixed scrolling. |

Getting started with Sticky

Sticky requires a target to keep in viewport on scroll. Here is a sticky toolbar;

```
<p:toolbar id="tb">
  <p:toolbarGroup align="left">
    <p:commandButton type="button" value="New" icon="ui-icon-document" />
    <p:commandButton type="button" value="Open" icon="ui-icon-folder-open"/>

    <p:separator />

    <p:commandButton type="button" title="Save" icon="ui-icon-disk"/>
    <p:commandButton type="button" title="Delete" icon="ui-icon-trash"/>
    <p:commandButton type="button" title="Print" icon="ui-icon-print"/>
  </p:toolbarGroup>
</p:toolbar>

<p:sticky target="tb" />
```

Skinning

There are no visual styles of sticky however, *ui-sticky* class is applied to the target when the position is fixed. When target is restored to its original location this is removed.

3.138 SubTable

SubTable is a helper component of datatable used for grouping.

| FCB Statistics | | |
|----------------|-------|---------|
| Player | Stats | |
| | Goals | Assists |
| Messi | | |
| 2005-2006 | 4 | 2 |
| 2006-2007 | 10 | 7 |
| 2007-2008 | 16 | 10 |
| 2008-2009 | 32 | 15 |
| 2009-2010 | 51 | 22 |
| 2010-2011 | 55 | 30 |
| Totals: | 168 | 86 |
| Xavi | | |
| 2005-2006 | 6 | 15 |
| 2006-2007 | 10 | 20 |
| 2007-2008 | 12 | 22 |
| 2008-2009 | 9 | 24 |
| 2009-2010 | 8 | 21 |
| 2010-2011 | 10 | 25 |
| Totals: | 55 | 127 |
| Iniesta | | |
| 2005-2006 | 4 | 12 |
| 2006-2007 | 7 | 9 |
| 2007-2008 | 10 | 14 |
| 2008-2009 | 15 | 17 |
| 2009-2010 | 14 | 16 |
| 2010-2011 | 17 | 22 |
| Totals: | 67 | 90 |

Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | subTable |
| Component Class | org.primefaces.component.subtable.SubTable |
| Component Type | org.primefaces.component.SubTable |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SubTableRenderer |
| Renderer Class | org.primefaces.component.subtable.SubTableRenderer |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Data of the component. |
| var | null | String | Name of the data iterator. |

Getting started with SubTable

See DataTable section for more information.

3.139 SummaryRow

SummaryRow is a helper component of datatable used for dynamic grouping.

| Model | Year | Manufacturer | Color |
|---------------|------|--------------|----------------|
| 20b7dd32 | 1983 | Volvo | Orange |
| 93583964 | 1962 | Volvo | White |
| 6e68d612 | 1970 | Volvo | Brown |
| a127d75d | 1968 | Volvo | Black |
| 3d5ba523 | 1994 | Volvo | Red |
| Total: | | | 51545\$ |
| 4d784acf | 2002 | Volkswagen | Red |
| 0e43ef6e | 1978 | Volkswagen | Black |
| 4b0ee961 | 1960 | Volkswagen | Red |
| 8b1bdfef | 2008 | Volkswagen | White |
| Total: | | | 80121\$ |
| 40b0c19d | 2000 | Renault | Green |
| a56ff6ee | 1967 | Renault | Maroon |
| ec645794 | 1983 | Renault | Green |
| Total: | | | 67468\$ |

Info

| | |
|------------------|---------------------------------------------------------------|
| Tag | summaryRow |
| Component Class | org.primefaces.component.summaryrow.SummaryRow |
| Component Type | org.primefaces.component.SummaryRow |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.SummaryRowRenderer |
| Renderer Class | org.primefaces.component.summaryrow.SummaryRowRenderer |

Attributes

| Name | Default | Type | Description |
|----------|---------|------------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| listener | null | MethodExpr | Method expression to execute before rendering summary row. (e.g. to calculate totals). |

Getting started with SummaryRow

See DataTable section for more information.

3.140 Tab

Tab is a generic container component used by other PrimeFaces components such as `tabView` and `accordionPanel`.

Info

| | |
|------------------|---------------------------------------------|
| Tag | tab |
| Component Class | org.primefaces.component.TabView.Tab |
| Component Type | org.primefaces.component.Tab |
| Component Family | org.primefaces.component |

Attributes

| Name | Default | Type | Description |
|-----------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| title | null | Boolean | Title text of the tab |
| titleStyle | null | String | Inline style of the tab. |
| titleStyleClass | null | String | Style class of the tab. |
| disabled | false | Boolean | Disables tab element. |
| closable | false | Boolean | Makes the tab closable when enabled. |
| titletip | null | String | Tooltip of the tab header. |

Getting started with the Tab

See the sections of components who utilize tab component for more information. As tab is a shared component, not all attributes may apply to the components that use tab.

3.141 TabMenu

TabMenu is a navigation component that displays menuitems as tabs.



Info

| | |
|------------------|---------------------------------------------------------|
| Tag | tabMenu |
| Component Class | org.primefaces.component.tabmenu.TabMenu |
| Component Type | org.primefaces.component.TabMenu |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.TabMenuRenderer |
| Renderer Class | org.primefaces.component.tabmenu.TabMenuRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|-----------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| model | null | MenuModel | MenuModel instance to build menu dynamically. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| activeIndex | 0 | Integer | Index of the active tab. |
| widgetVar | null | String | Name of the client side widget. |

Getting started with TabMenu

TabMenu requires menuitems as children components, each menuitem is rendered as a tab. Just like in any other menu component, menuitems can be utilized to do ajax requests, non-ajax requests and simple GET navigations.

```

<p:tabMenu activeIndex="0">
  <p:menuItem value="Overview" outcome="main" icon="ui-icon-star"/>
  <p:menuItem value="Demos" outcome="demos" icon="ui-icon-search" />
  <p:menuItem value="Documentation" outcome="docs" icon="ui-icon-document"/>
  <p:menuItem value="Support" outcome="support" icon="ui-icon-wrench"/>
  <p:menuItem value="Social" outcome="social" icon="ui-icon-person" />
</p:tabMenu>

```

Skinning TabMenu

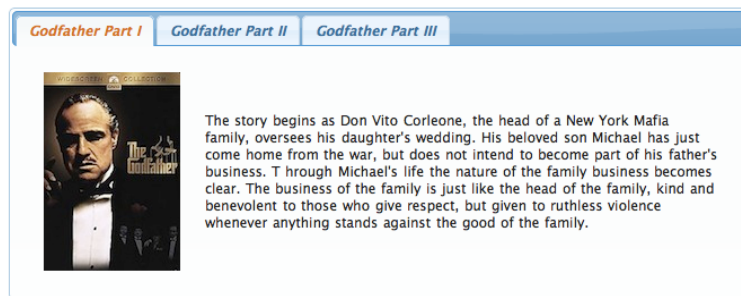
TabMenu resides in a main container which *style* and *styleClass* attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|-----------------|-------------------------|
| .ui-tabmenu | Main container element. |
| .ui-tabmenu-nav | Container for tabs. |
| .ui-tabmenuitem | MenuItem container. |
| .ui-menuitem | Anchor of a menuitem. |

As skinning style classes are global, see the main theming section for more information.

3.142 TabView

TabView is a container component to group content in tabs.



Info

| | |
|------------------|---------------------------------------------------------|
| Tag | tabView |
| Component Class | org.primefaces.component.tabview.TabView |
| Component Type | org.primefaces.component.TabView |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.TabViewRenderer |
| Renderer Class | org.primefaces.component.tabview.TabViewRenderer |

Attributes

| Name | Default | Type | Description |
|----------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean. |
| widgetVar | null | String | Variable name of the client side widget. |
| activeIndex | 0 | Integer | Index of the active tab. |
| effect | null | String | Name of the transition effect. |
| effectDuration | null | String | Duration of the transition effect. |
| dynamic | false | Boolean | Enables lazy loading of inactive tabs. |

| Name | Default | Type | Description |
|-------------|---------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cache | true | Boolean | When tab contents are lazy loaded by ajax toggleMode, caching only retrieves the tab contents once and subsequent toggles of a cached tab does not communicate with server. If caching is turned off, tab contents are reloaded from server each time tab is clicked. |
| onTabChange | null | String | Client side callback to execute when a tab is clicked. |
| onTabShow | null | String | Client side callback to execute when a tab is shown. |
| onTabClose | null | String | Client side callback to execute on tab close. |
| style | null | String | Inline style of the main container. |
| styleClass | null | String | Style class of the main container. |
| var | null | String | Name of iterator to refer an item in collection. |
| value | null | Object | Collection model to display dynamic tabs. |
| orientation | top | String | Orientation of tab headers. |
| dir | ltr | String | Defines text direction, valid values are <i>ltr</i> and <i>rtl</i> . |
| scrollable | false | Boolean | When enabled, tab headers can be scrolled horizontally instead of wrapping. |
| prependId | true | Boolean | TabView is a naming container thus prepends its id to its children by default, a false value turns this behavior off except for dynamic tabs. |
| tabindex | 0 | String | Position of the element in the tabbing order. |

Getting started with the TabView

TabView requires one more child tab components to display. Titles can also be defined by using “title” facet.

```
<p:tabView>
  <p:tab title="Tab One">
    <h:outputText value="Lorem" />
  </p:tab>
  <p:tab title="Tab Two">
    <h:outputText value="Ipsum" />
  </p:tab>
  <p:tab title="Tab Three">
    <h:outputText value="Dolor" />
  </p:tab>
</p:tabView>
```

Dynamic Tabs

There're two toggleModes in tabview, *non-dynamic* (default) and *dynamic*. By default, all tab contents are rendered to the client, on the other hand in dynamic mode, only the active tab contents are rendered and when an inactive tab header is selected, content is loaded with ajax. Dynamic mode is handy in reducing page size, since inactive tabs are lazy loaded, pages will load faster. To enable dynamic loading, simply set *dynamic* option to true.

```
<p:tabView dynamic="true">
    //tabs
</p:tabView>
```

Content Caching

Dynamically loaded tabs cache their contents by default, by doing so, reactivating a tab doesn't result in an ajax request since contents are cached. If you want to reload content of a tab each time a tab is selected, turn off caching by *cache* to false.

Effects

Content transition effects are controlled with *effect* and *effectDuration* attributes. EffectDuration specifies the speed of the effect, *slow*, *normal* (default) and *fast* are the valid options.

```
<p:tabView effect="fade" effectDuration="fast">
    //tabs
</p:tabView>
```

Ajax Behavior Events

tabChange and *tabClose* are the ajax behavior events of tabview that are executed when a tab is changed and closed respectively. Here is an example of a tabChange behavior implementation;

```
<p:tabView>
    <p:ajax event="tabChange" listener="#{bean.onChange}" />

    //tabs
</p:tabView>
```

```
public void onChange(TabChangeEvent event) {
    //Tab activeTab = event.getTab();
    //...
}
```

Your listener(if defined) will be invoked with an *org.primefaces.event.TabChangeEvent* instance that contains a reference to the new active tab and the accordion panel itself. For tabClose event, listener will be passed an instance of *org.primefaces.event.TabCloseEvent*.

Dynamic Number of Tabs

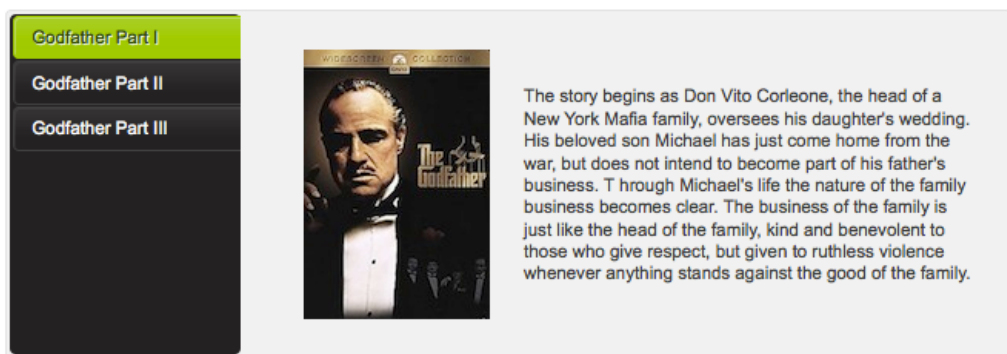
When the tabs to display are not static, use the built-in iteration feature similar to ui:repeat.

```
<p:tabView value="#{bean.list}" var="listItem">
  <p:tab title="#{listItem.propertyA}">
    <h:outputText value= "#{listItem.propertyB}"/>
    ...More content
  </p:tab>
</p:tabView>
```

Orientations

Four different orientations are available; *top* (default), *left*, *right* and *bottom*.

```
<p:tabView orientation="left">
  //tabs
</p:tabView>
```



Scrollable Tabs

Tab headers wrap to the next line in case there is not enough space at header area by default. Using scrollable feature, it is possible to keep headers aligned horizontally and use navigation buttons to access hidden headers.

```
<p:tabView scrollable="true">
  //tabs
</p:tabView>
```



Client Side Callbacks

Tabview has three callbacks for client side. *onTabChange* is executed when an inactive tab is clicked, *onTabShow* is executed when an inactive tab becomes active to be shown and *onTabClose* when a closable tab is closed. All these callbacks receive index parameter as the index of tab.


```

<p:tabView onTabChange="handleTabChange(index)">
  //tabs
</p:tabView>

function handleTabChange(i) {
  //i = Index of the new tab
}

```

Client Side API

Widget: *PrimeFaces.widget.TabView*

| Method | Params | Return Type | Description |
|------------------|--------------------------------|-------------|--------------------------------------------------------------------|
| select(index) | index: Index of tab to display | void | Activates tab with given index |
| selectTab(index) | index: Index of tab to display | void | (Deprecated, use select instead) Activates tab with given index |
| disable(index) | index: Index of tab to disable | void | Disables tab with given index |
| enable(index) | index: Index of tab to enable | void | Enables tab with given index |
| remove(index) | index: Index of tab to remove | void | Removes tab with given index |
| getLength() | - | Number | Returns the number of tabs |
| getActiveIndex() | - | Number | Returns index of current tab |

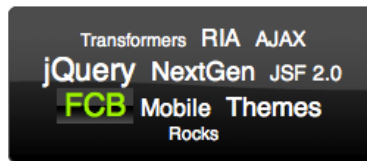
Skinning

As skinning style classes are global, see the main theming section for more information. Following is the list of structural style classes.

| Class | Applies |
|-------------------------|------------------------------------------------------------|
| .ui-tabs | Main tabview container element |
| .ui-tabs- {orientation} | Orientation specific (top, bottom, right, left) container. |
| .ui-tabs-nav | Main container of tab headers |
| .ui-tabs-panel | Each tab container |
| .ui-tabs-scrollable | Container element of a scrollable tabview. |

3.143 TagCloud

TagCloud displays a collection of tag with different strengths.



Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | tagCloud |
| Component Class | org.primefaces.component.tagcloud.TagCloud |
| Component Type | org.primefaces.component.TagCloud |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.TagCloudRenderer |
| Renderer Class | org.primefaces.component.tagcloud.TagCloudRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| model | null | TagCloudModel | Backing tag cloud model. |
| style | null | String | Inline style of the container element. |
| styleClass | null | String | Style class of the container element. |

Getting started with the TagCloud

TagCloud requires a backend TagCloud model to display.

```
<p:tagCloud model="#{tagCloudBean.model}" />
```

```

public class TagCloudBean {

    private TagCloudModel model;

    public TagCloudBean() {
        model = new DefaultTagCloudModel();
        model.addTag(new DefaultTagCloudItem("Transformers", "#", 1));
        //more
    }

    //getter
}

```

Selecting Tags

An item in tagCloud can be selected using *select* ajax behavior. Note that only items with null urls can be selected.

```

<h:form>
    <p:growl id="msg" showDetail="true" />

    <p:tagCloud model="#{tagCloudBean.model}">
        <p:ajax event="select" update="msg" listener="#{tagCloudBean.onSelect}" />
    </p:tagCloud>
</h:form>

```

```

public class TagCloudBean {

    //model, getter and setter

    public void onSelect(SelectEvent event) {
        TagCloudItem item = (TagCloudItem) event.getObject();
        FacesMessage msg = new FacesMessage(FacesMessage.SEVERITY_INFO,
            "Item Selected", item.getLabel());
        FacesContext.getCurrentInstance().addMessage(null, msg);
    }
}

```

TagCloud API

org.primefaces.model.tagcloud.TagCloudModel

| Method | Description |
|-----------------------------------|----------------------------|
| List<TagCloudItem> getTags() | Returns all tags in model. |
| void addTag(TagCloudItem item) | Adds a tag. |
| void removeTag(TagCloudItem item) | Removes a tag. |
| void clear() | Removes all tags. |

PrimeFaces provides *org.primefaces.model.tagcloud.DefaultTagCloudModel* as the default implementation.

org.primefaces.model.tagcloud.TagCloudItem

| Method | Description |
|-------------------|----------------------------------------------|
| String getLabel() | Returns label of the tag. |
| String getUrl() | Returns url of the tag. |
| int getStrength() | Returns strength of the tag between 1 and 5. |

org.primefaces.model.tagcloud.DefaultTagCloudItem is provided as the default implementation.

Skinning

TagCloud resides in a container element that *style* and *styleClass* attributes apply. *.ui-tagcloud* applies to main container and *.ui-tagcloud-strength-[1,5]* applies to each tag. As skinning style classes are global, see the main theming section for more information.

3.144 Terminal

Terminal is an ajax powered web based terminal that brings desktop terminals to JSF.

```
Welcome to PrimeFaces Terminal, how are you today?
prime $ ls
ls not found
prime $ date
Fri Sep 20 15:33:21 CEST 2013
prime $ greet Optimus Prime
Hello Optimus
prime $
```

Info

| | |
|------------------|-----------------------------------------------------------|
| Tag | terminal |
| Component Class | org.primefaces.component.terminal.Terminal |
| Component Type | org.primefaces.component.Terminal |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.TerminalRenderer |
| Renderer Class | org.primefaces.component.terminal.TerminalRenderer |

Attributes

| Name | Default | Type | Description |
|----------------|----------|------------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| welcomeMessage | null | String | Welcome message to be displayed on initial load. |
| prompt | prime \$ | String | Primary prompt text. |
| commandHandler | null | MethodExpr | Method to be called with arguments to process. |
| widgetVar | null | String | Name of the client side widget. |

Getting started with the Terminal

A command handler is required to interpret commands entered in terminal.

```
<p:terminal commandHandler="#{terminalBean.handleCommand}" />
```

```
public class TerminalBean {
    public String handleCommand(String command, String[] params) {
        if(command.equals("greet"))
            return "Hello " + params[0];
        else if(command.equals("date"))
            return new Date().toString();
        else
            return command + " not found";
    }
}
```

Whenever a command is sent to the server, `handleCommand` method is invoked with the command name and the command arguments as a `String` array.

Client Side API

Client side widget exposes `clear()` and `focus()` methods. Following shows how to add focus on a terminal nested inside a dialog;

```
<p:commandButton type="button" Value="Apply Focus" onclick="PF('term').focus();" />
<p:terminal widgetVar="term" commandHandler="#{terminalBean.handleCommand}" />
```

Skinning

Terminal resides in a main container which `style` and `styleClass` attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|----------------------|------------------------------------------------------|
| .ui-terminal | Main container element. |
| .ui-terminal-content | Content display of previous commands with responses. |
| .ui-terminal-prompt | Prompt text. |

3.145 ThemeSwitcher

ThemeSwitcher enables switching PrimeFaces themes on the fly with no page refresh.



Info

| | |
|------------------|---------------------------------------------------------------------|
| Tag | themeSwitcher |
| Component Class | org.primefaces.component.themeswitcher.ThemeSwitcher |
| Component Type | org.primefaces.component.ThemeSwitcher |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ThemeSwitcherRenderer |
| Renderer Class | org.primefaces.component.themeswitcher.ThemeSwitcherRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| effect | fade | String | Name of the animation. |
| effectSpeed | normal | String | Duration of the toggle animation, valid values are "slow", "normal" and "fast". |
| disabled | false | Boolean | Disables the component. |
| label | null | String | User presentable name. |
| onchange | null | String | Client side callback to execute on theme change. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |

| Name | Default | Type | Description |
|----------|---------|---------|-----------------------------------------------|
| var | null | String | Variable name to refer to each item. |
| height | null | Integer | Height of the panel. |
| tabindex | null | Integer | Position of the element in the tabbing order. |

Getting Started with the ThemeSwitcher

ThemeSwitcher usage is very similar to selectOneMenu.

```
<p:themeSwitcher style="width:150px">
  <f:selectItem itemLabel="Choose Theme" itemValue="" />
  <f:selectItems value="#{bean.themes}" />
</p:themeSwitcher>
```

Stateful ThemeSwitcher

By default, themeswitcher just changes the theme on the fly with no page refresh, in case you'd like to get notified when a user changes the theme (e.g. to update user preferences), you can use an ajax behavior.

```
<p:themeSwitcher value="#{bean.theme}" effect="fade">
  <f:selectItem itemLabel="Choose Theme" itemValue="" />
  <f:selectItems value="#{themeSwitcherBean.themes}" />
  <p:ajax listener="#{bean.saveTheme}" />
</p:themeSwitcher>
```

Advanced ThemeSwitcher

ThemeSwitcher supports displaying custom content so that you can show theme previews.

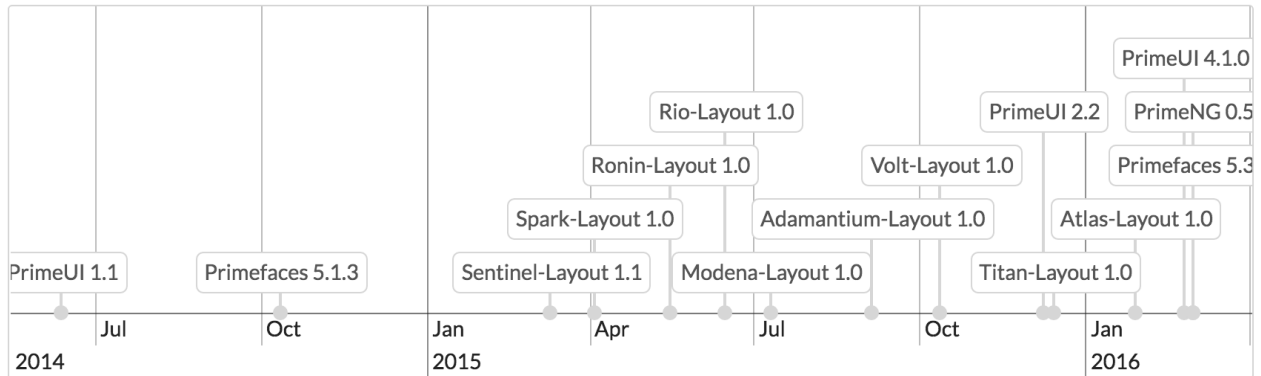
```
<p:themeSwitcher>
  <f:selectItem itemLabel="Choose Theme" itemValue="" />
  <f:selectItems value="#{themeSwitcherBean.advancedThemes}" var="theme"
    itemLabel="#{theme.name}" itemValue="#{theme}" />

  <p:column>
    <p:graphicImage value="/images/themes/#{t.image}" />
  </p:column>

  <p:column>
    #{t.name}
  </p:column>
</p:themeSwitcher>
```


3.146 TimeLine

Timeline is an interactive graph to visualize events in time.



Info

| | |
|------------------|----------------------------------------------------|
| Tag | timeLine |
| Component Class | org.primefaces.component.timeline.TimeLine |
| Component Type | org.primefaces.component.TimeLine |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.TimeLineRenderer |
| Renderer Class | org.primefaces.component.timeline.TimeLineRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| style | null | String | Inline style of the component. |

| Name | Default | Type | Description |
|-----------------|---------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| styleClass | null | String | Style class of the component. |
| var | null | String | Name of the request-scoped variable for underlying object in the TimelineEvent for each iteration. |
| value | null | Timeline Model | An instance of TimelineModel representing the backing model. |
| varGroup | null | String | Name of the request-scoped variable for underlying object in the TimelineGroup for each iteration. |
| locale | null | Object | User locale for i18n messages. The attribute can be either a String or Locale object. |
| timeZone | null | Object | Target time zone to convert start / end dates for displaying. This time zone is the time zone the user would like to see dates in UI. The attribute can be either a String or TimeZone object or null. If null, timeZone defaults to the server's time zone the application is running in. |
| browserTimeZone | null | Object | Time zone the user's browser / PC is running in. This time zone allows to correct the conversion of start / end dates to the target timeZone for displaying. The attribute can be either a String or TimeZone object or null. Note: browserTimeZone should be provided if the target timeZone is provided. If null, browserTimeZone defaults to the server's timeZone. |
| height | auto | auto | The height of the timeline in pixels, as a percentage, or "auto". When the height is set to "auto", the height of the timeline is automatically adjusted to fit the contents. If not, it is possible that events get stacked so high, that they are not visible in the timeline. When height is set to "auto", a minimum height can be specified with the option minHeight. Default is "auto". |
| minHeight | 0 | Integer | Specifies a minimum height for the Timeline in pixels. Useful when height is set to "auto". |
| width | 100% | String | The width of the timeline in pixels or as a percentage. |
| responsive | true | Boolean | Check if the timeline container is resized, and if so, resize the timeline. Useful when the webpage (browser window) or a layout pane / unit containing |

| Name | Default | Type | Description |
|---------------|---------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | the timeline component is resized. |
| axisOnTop | false | Boolean | If false, the horizontal axis is drawn at the bottom. If true, the axis is drawn on top. |
| dragAreaWidth | 10 | Integer | The width of the drag areas in pixels. When an event with date range is selected, it has a drag area on the left and right side, with which the start or end dates of the event can be manipulated. |
| editable | false | Boolean | If true, the events can be edited, changed, created and deleted. Events can only be editable when the option selectable is true (default). When editable is true, the timeline can fire AJAX events "change", "edit", "add", "delete", "drop". This global setting "editable" can be overwritten for individual events by setting a value in field "editable". |
| selectable | true | Boolean | If true, events on the timeline are selectable. Selectable events can fire AJAX "select" events. |
| unselectable | true | Boolean | If true, you can unselect an item by clicking in the empty space of the timeline. If false, you cannot unselect an item, there will be always one item selected. |
| zoomable | true | Boolean | If true, the timeline is zoomable. When the timeline is zoomed, AJAX "rangechange" events are fired. |
| moveable | true | Boolean | If true, the timeline is movable. When the timeline is moved, AJAX "rangechange" events are fired. |
| start | null | Date | The initial start date for the axis of the timeline. If not provided, the earliest date present in the events is taken as start date. |
| end | null | Date | The initial end date for the axis of the timeline. If not provided, the latest date present in the events is taken as end date. |
| min | null | Date | Set a minimum Date for the visible range. It will not be possible to move beyond this minimum. |
| max | null | Date | Set a maximum Date for the visible range. It will not be possible to move beyond this maximum. |
| zoomMin | 10L | Long | Set a minimum zoom interval for the visible range in |

| Name | Default | Type | Description |
|------------------|--------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | milliseconds. It will not be possible to zoom in further than this minimum. |
| zoomMax | 3153600 0000000 0L | Long | Set a maximum zoom interval for the visible range in milliseconds. It will not be possible to zoom out further than this maximum. Default value equals 3153600000000000 ms (about 10000 years). |
| preloadFactor | 0.0f | Float | Preload factor is a positive float value or 0 which can be used for lazy loading of events. When the lazy loading feature is active, the calculated time range for preloading will be multiplied by the preload factor. The result of this multiplication specifies the additional time range which will be considered for the preloading during moving / zooming too. For example, if the calculated time range for preloading is 5 days and the preload factor is 0.2, the result is $5 * 0.2 = 1$ day. That means, 1 day backwards and / or 1 day onwards will be added to the original calculated time range. The event's area to be preloaded is wider then. This helps to avoid frequently, time-consuming fetching of events. Default value is 0. |
| eventMargin | 10 | Integer | The minimal margin in pixels between events. |
| eventMarginAxis | 10 | Integer | The minimal margin in pixels between events and the horizontal axis. |
| eventStyle | box | String | Specifies the style for the timeline events. Choose from "dot" or "box". |
| groupsChangeable | true | Boolean | If true, items can be moved from one group to another. Only applicable when groups are used. |
| groupsOnRight | false | Boolean | If false, the groups legend is drawn at the left side of the timeline. If true, the groups legend is drawn on the right side. |
| groupsOrder | true | Boolean | Allows to customize the way groups are ordered. When true (default), groups will be ordered by content alphabetically (when the list of groups is missing) or by native ordering of TimelineGroup object in the list of groups (when the list of groups is available). When false, groups will not be ordered at all. |

| Name | Default | Type | Description |
|-----------------|---------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| groupsWidth | null | String | By default, the width of the groups legend is adjusted to the group names. A fixed width can be set for the groups legend by specifying the "groupsWidth" as a string, for example "200px". |
| groupMinHeight | 0 | Integer | The minimum height of each individual group even if they have no items. The group height is set as the greatest value between items height and the groupMinHeight. Default is 0. |
| snapEvents | true | Boolean | If true, the start and end of an event will be snapped nice integer values when moving or resizing the event. Default is true. |
| stackEvents | true | Boolean | If true, the start and end of an event will be snapped nice integer values when moving or resizing the event. |
| showCurrentTime | true | Boolean | If true, the timeline shows a red, vertical line displaying the current time. |
| showMajorLabels | true | Boolean | By default, the timeline shows both minor and major date labels on the horizontal axis. For example the minor labels show minutes and the major labels show hours. When "showMajorLabels" is false, no major labels are shown. |
| showMinorLabels | true | Boolean | By default, the timeline shows both minor and major date labels on the horizontal axis. For example the minor labels show minutes and the major labels show hours. When "showMinorLabels" is false, no minor labels are shown. When both "showMajorLabels" and "showMinorLabels" are false, no horizontal axis will be visible. |
| showButtonNew | false | Boolean | Show the button "Create new event" in the a navigation menu. |
| showNavigation | false | Boolean | Show a navigation menu with buttons to move and zoom the timeline. |
| timeChangeable | true | Boolean | If false, items can not be moved or dragged horizontally (neither start time nor end time is changable). This is useful when items should be editable but can only be changed regarding group or content (typical use case: scheduling events). |

| Name | Default | Type | Description |
|----------------------|---------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| dropHoverStyleClass | null | String | Style class to apply when an acceptable draggable is dragged over. |
| dropActiveStyleClass | null | String | Style class to apply when an acceptable draggable is being dragged over. |
| dropAccept | null | String | Selector to define the accepted draggables. |
| dropScope | null | String | Scope key to match draggables and droppables. |
| animate | true | Boolean | When true, events are moved animated when resizing or moving them. This is very pleasing for the eye, but does require more computational power. |
| animateZoom | true | Boolean | When true, events are moved animated when zooming the Timeline. This looks cool, but does require more computational power. |

Getting started with the Timeline

Timeline requires a value of `org.primefaces.model.timeline.TimelineModel` type. An event should be an instance of `org.primefaces.model.timeline.TimelineEvent` and included in model via `add` method.

```
<p:timeline id="timeline" value="#{basicTimelineView.model}" height="250px" />
```

```
public class BasicTimelineView implements Serializable {
    private TimelineModel model;

    @PostConstruct
    protected void initialize() {
        model = new TimelineModel();

        Calendar cal = Calendar.getInstance();
        cal.set(2014, Calendar.JUNE, 12, 0, 0, 0);
        model.add(new TimelineEvent("PrimeUI 1.1", cal.getTime()));

        cal.set(2014, Calendar.OCTOBER, 11, 0, 0, 0);
        model.add(new TimelineEvent("Primefaces 5.1.3", cal.getTime()));
    }
}
```

Examples

For examples on editing, grouping, styling, ranges, linked timelines and lazy loading please visit;

<http://www.primefaces.org/showcase-ext/sections/timeline/basic.jsf>

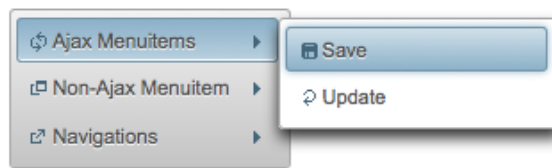
Ajax Behavior Events

| Event | Listener Parameter | Fired |
|--------------|-------------------------------------|---------------------------|
| page | org.primefaces.event.data.PageEvent | On pagination. |
| sort | org.primefaces.event.data.SortEvent | When a column is sorted. |
| add | TimelineAddEvent | On event add. |
| change | TimelineModificationEvent | On event change. |
| changed | TimelineModificationEvent | On event change complete. |
| edit | TimelineModificationEvent | On event edit. |
| delete | TimelineModificationEvent | On event delete. |
| select | TimelineSelectEvent | On event select. |
| rangechange | TimelineRangeEvent | On range change. |
| rangechanged | TimelineRangeEvent | On range change complete. |
| lazyload | TimelineLazyLoadEvent | On lazy load. |
| drop | TimelineDragDropEvent | On drop from outside. |

* All events are under org.primefaces.event.timeline.* package.

3.147 TieredMenu

TieredMenu is used to display nested submenus with overlays.



Info

| | |
|------------------|---------------------------------------------------------------|
| Tag | tieredMenu |
| Component Class | org.primefaces.component.tieredmenu.TieredMenu |
| Component Type | org.primefaces.component.TieredMenu |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.TieredMenuRenderer |
| Renderer Class | org.primefaces.component.tieredmenu.TieredMenuRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| model | null | MenuModel | MenuModel instance for programmatic menu. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| autoDisplay | true | Boolean | Defines whether the first level of submenus will be displayed on mouseover or not. When set to false, click event is required to display. |
| trigger | null | String | Id of the component whose triggerEvent will show the dynamic positioned menu. |
| my | null | String | Corner of menu to align with trigger element. |
| at | null | String | Corner of trigger to align with menu element. |

| Name | Default | Type | Description |
|--------------|---------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| overlay | false | Boolean | Defines positioning, when enabled menu is displayed with absolute position relative to the trigger. Default is false, meaning static positioning. |
| triggerEvent | click | String | Event name of trigger that will show the dynamic positioned menu. |
| toggleEvent | hover | String | Event to toggle the submenus, valid values are "hover" and "click". |

Getting started with the TieredMenu

TieredMenu consists of submenus and menuitems, submenus can be nested and each nested submenu will be displayed in an overlay.

```

<p:tieredMenu>
  <p:submenu label="Ajax Menuitems" icon="ui-icon-refresh">
    <p:menuitem value="Save" actionListener="#{buttonBean.save}"
      update="messages" icon="ui-icon-disk" />
    <p:menuitem value="Update" actionListener="#{buttonBean.update}"
      update="messages" icon="ui-icon-arrowrefresh-1-w" />
  </p:submenu>

  <p:submenu label="Non-Ajax Menuitem" icon="ui-icon-newwin">
    <p:menuitem value="Delete" actionListener="#{buttonBean.delete}"
      update="messages" ajax="false" icon="ui-icon-close"/>
  </p:submenu>

  <p:separator />

  <p:submenu label="Navigations" icon="ui-icon-extlink">
    <p:submenu label="Prime Links">
      <p:menuitem value="Prime" url="http://www.prim.com.tr" />
      <p:menuitem value="PrimeFaces" url="http://www.primefaces.org" />
    </p:submenu>
    <p:menuitem value="Mobile" url="/mobile" />
  </p:submenu>
</p:tieredMenu>

```

AutoDisplay

By default, submenus are displayed when mouse is over root menuitems, set autoDisplay to false to require a click on root menuitems to enable autoDisplay mode.

```

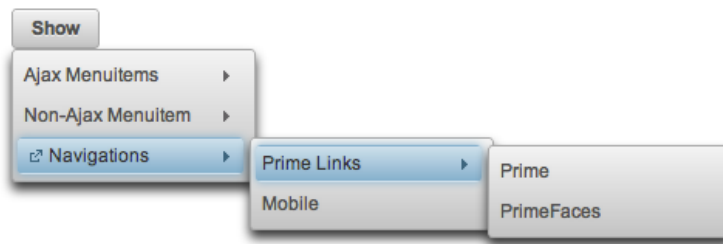
<p:tieredMenu autoDisplay="false">
  //content
</p:tieredMenu>

```

Overlay

TieredMenu can be positioned relative to a trigger component, following sample attaches a tieredMenu to the button so that whenever the button is clicked tieredMenu will be displayed in an overlay itself.

```
<p:commandButton type="button" value="Show" id="btn" />
<p:tieredMenu autoDisplay="false" trigger="btn" my="left top" at="left bottom">
    //content
</p:tieredMenu>
```



Client Side API

Widget: *PrimeFaces.widget.TieredMenu*

| Method | Params | Return Type | Description |
|---------|--------|-------------|-----------------------------------|
| show() | - | void | Shows overlay menu. |
| hide() | - | void | Hides overlay menu. |
| align() | - | void | Aligns overlay menu with trigger. |

Skinning

TieredMenu resides in a main container which *style* and *styleClass* attributes apply. Following is the list of structural style classes;

| Style Class | Applies |
|-------------------------|-------------------------------|
| .ui-menu .ui-tieredmenu | Container element of menu. |
| .ui-menu-list | List container |
| .ui-menuitem | Each menu item |
| .ui-menuitem-link | Anchor element in a link item |
| .ui-menuitem-text | Text element in an item |

As skinning style classes are global, see the main theming section for more information.

3.148 Toolbar

Toolbar is a horizontal grouping component for commands and other content.



Info

| | |
|------------------|---------------------------------------------------------|
| Tag | toolbar |
| Component Class | org.primefaces.component.toolbar.Toolbar |
| Component Type | org.primefaces.component.Toolbar |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.ToolbarRenderer |
| Renderer Class | org.primefaces.component.toolbar.ToolbarRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| style | null | String | Inline style of the container element. |
| styleClass | null | String | Style class of the container element. |

Getting Started with the Toolbar

Toolbar has two placeholders(left and right) that are defined with facets. You can also use toolbarGroup as an alternative to facets.

```
<p:toolbar>
  <f:facet name="left"></f:facet>
  <f:facet name="right"></f:facet>
</p:toolbar>
```

Any content can be placed inside toolbar.

```

<p:toolbar>
  <f:facet name="left">
    <p:commandButton type="push" value="New" image="ui-icon-document" />
    <p:commandButton type="push" value="Open" image="ui-icon-folder-open"/>

    <span class="ui-separator">
      <span class="ui-icon ui-icon-grip-dotted-vertical" />
    </span>

    <p:commandButton type="push" title="Save" image="ui-icon-disk"/>
    <p:commandButton type="push" title="Delete" image="ui-icon-trash"/>
    <p:commandButton type="push" title="Print" image="ui-icon-print"/>
  </f:facet>

  <f:facet name="right">
    <p:menuButton value="Navigate">
      <p:menuitem value="Home" url="#" />
      <p:menuitem value="Logout" url="#" />
    </p:menuButton>
  </f:facet>
</p:toolbar>

```

Skinning

Toolbar resides in a container element which *style* and *styleClass* options apply. Following is the list of structural style classes;

| Style Class | Applies |
|---------------------------|------------------------------|
| .ui-toolbar | Main container |
| .ui-toolbar .ui-separator | Divider in a toolbar |
| .ui-toolbar-group-left | Left toolbarGroup container |
| .ui-toolbar-group-right | Right toolbarGroup container |

As skinning style classes are global, see the main theming section for more information.

3.149 ToolbarGroup

ToolbarGroup is a helper component for Toolbar component to define placeholders.

Info

| | |
|------------------|------------------------------------------------------|
| Tag | toolbarGroup |
| Component Class | org.primefaces.component.toolbar.ToolbarGroup |
| Component Type | org.primefaces.component.ToolbarGroup |
| Component Family | org.primefaces.component |

Attributes

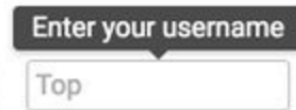
| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| align | null | String | Defines the alignment within toolbar, valid values are <i>left</i> and <i>right</i> . |
| style | null | String | Inline style of the container element. |
| styleClass | null | String | Style class of the container element. |

Getting Started with the ToolbarGroup

See toolbar documentation for more information about how Toolbar Group is used.

3.150 Tooltip

Tooltip goes beyond the legacy html title attribute by providing custom effects, events, html content and advance theme support.



Info

| | |
|------------------|---------------------------------------------------------|
| Tag | tooltip |
| Component Class | org.primefaces.component.tooltip.Tooltip |
| Component Type | org.primefaces.component.Tooltip |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.TooltipRenderer |
| Renderer Class | org.primefaces.component.tooltip.TooltipRenderer |

Attributes

| Name | Default | Type | Description |
|------------|-----------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UICoMponent instance in a backing bean |
| value | null | Object | Value of the component than can be either an EL expression of a literal text |
| converter | null | Converter/ String | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id |
| widgetVar | null | String | Name of the client side widget. |
| showEvent | mouseover | String | Event displaying the tooltip. |
| showEffect | fade | String | Effect to be used for displaying. |
| hideEvent | mouseout | String | Event hiding the tooltip. |
| hideEffect | fade | String | Effect to be used for hiding. |
| showDelay | 150 | Integer | Delay time to show tooltip in milliseconds. |

| Name | Default | Type | Description |
|----------------|---------|---------|------------------------------------------------------------------------------------------------|
| hideDelay | 0 | Integer | Delay time to hide tooltip in milliseconds. |
| for | null | String | Component to attach the tooltip. |
| style | null | String | Inline style of the tooltip. |
| styleClass | null | String | Style class of the tooltip. |
| globalSelector | null | String | jquery selector for global tooltip, defaults to "a,:input,:button". |
| escape | true | Boolean | Defines whether html would be escaped or not. |
| trackMouse | false | Boolean | Tooltip position follows pointer on mousemove. |
| beforeShow | null | String | Client side callback to execute before tooltip is shown. Returning false will prevent display. |
| onHide | null | String | Client side callback to execute after tooltip is shown. |
| onShow | null | String | Client side callback to execute after tooltip is shown. |
| position | right | String | Position of the tooltip, valid values are right, left, top and bottom. |

Getting started with the Tooltip

Tooltip can be used by attaching it to a target component. Tooltip value can also be retrieved from target's title, so following are same;

```
<h:inputSecret id="pwd" value="#{myBean.password}" />
<p:tooltip for="pwd" value="Only numbers"/>
```

```
<h:inputSecret id="pwd" value="#{myBean.password}" title="Only numbers"/>
<p:tooltip for="pwd"/>
```

Global Tooltip

Global tooltip binds to elements with title attributes. Ajax updates are supported as well, meaning if target component is updated with ajax, tooltip can still bind. As global tooltips are more efficient since only one instance of tooltip is used across all tooltip targets, it is suggested to be used instead of explicit tooltips unless you have a custom case e.g. different options, custom content.

```
<p:tooltip />

<p:inputText id="focus" title="Tooltip for an input"/>
<h:outputLink id="fade" value="#" title="Tooltip for a link">
  <h:outputText value="Fade Effect" />
</h:outputLink>
<p:commandButton value="Up" title="Up" />
```

IE10 Issue

Due to a bug, IE10 always displays the title text in a native popup when the element receives focus via tabbing and two tooltips might be displayed at once. Solution is to use passthrough data-tooltip attribute instead of title.

```
<html xmlns="http://www.w3.org/1999/xhtml"
  xmlns:h="http://xmlns.jcp.org/jsf/html"
  xmlns:pt="http://xmlns.jcp.org/jsf/passthrough"
  xmlns:p="http://primefaces.org/ui">

  <h:head></h:head>

  <h:body>
    <p:inputText pt:data-tooltip="Title here"/>
    <p:inputText title="Works fine except tabbed on IE10"/>
  </h:body>
</html>
```

Position

Tooltip has four possible position, default is *right* and other valid values are *left*, *top* and *bottom*.

Events and Effects

A tooltip is shown on mouseover event and hidden when mouse is out by default. If you need to change this behavior use the showEvent and hideEvent feature. Tooltip below is displayed when the input gets the focus and hidden with onBlur.

```
<h:inputSecret id="pwd" value="#{myBean.password}" />
<p:tooltip for="pwd" value="Password must contain only numbers"
  showEvent="focus" hideEvent="blur" showEffect="blind" hideEffect="explode" />
```

Available options for effects are; *blind*, *bounce*, *clip*, *drop*, *explode*, *fold*, *highlight*, *puff*, *pulsate*, *scale*, *shake*, *size* and *slide*.

Html Content

Another powerful feature of tooltip is the ability to display custom content as a tooltip.

```
<h:outputLink id="lnk" value="#">
  <h:outputText value="PrimeFaces Home" />
</h:outputLink>

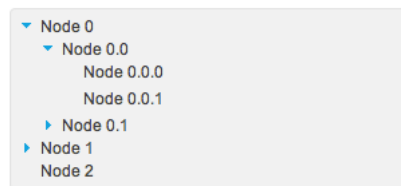
<p:tooltip for="lnk">
  <p:graphicImage value="/images/prime_logo.png" />
  <h:outputText value="Visit PrimeFaces Home" />
</p:tooltip>
```

Skinning

Tooltip has only *.ui-tooltip* as a style class and is styled with global skinning selectors, see main skinning section for more information.

3.151 Tree

Tree is used for displaying hierarchical data and creating site navigations.



Info

| | |
|------------------|---------------------------------------------------|
| Tag | tree |
| Component Class | org.primefaces.component.tree.Tree |
| Component Type | org.primefaces.component.Tree |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.TreeRenderer |
| Renderer Class | org.primefaces.component.tree.TreeRenderer |

Attributes

| Name | Default | Type | Description |
|-------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| widgetVar | null | String | Name of the client side widget. |
| value | null | Object | A TreeNode instance as the backing model. |
| var | null | String | Name of the request-scoped variable that'll be used to refer each treenode data. |
| dynamic | false | Boolean | Specifies the ajax/client toggleMode |
| cache | true | Boolean | Specifies caching on dynamically loaded nodes. When set to true expanded nodes will be kept in memory. |
| onNodeClick | null | String | Javascript event to process when a tree node is clicked. |
| selection | null | Object | TreeNode array to reference the selections. |

| Name | Default | Type | Description |
|--------------------------|----------|---------|---------------------------------------------------------------------------------------------------------------------------------------|
| style | null | String | Style of the main container element of tree |
| styleClass | null | String | Style class of the main container element of tree |
| selectionMode | null | String | Defines the selectionMode |
| highlight | true | Boolean | Highlights nodes on hover when selection is enabled. |
| datakey | null | Object | Unique key of the data presented by nodes. |
| animate | false | Boolean | When enabled, displays slide effect on toggle. |
| orientation | vertical | String | Orientation of layout, <i>vertical</i> or <i>horizontal</i> . |
| propagateSelectionUp | true | Boolean | Defines upwards selection propagation for checkbox mode. |
| propagateSelectionDown | true | Boolean | Defines downwards selection propagation for checkbox mode. |
| dir | ltr | String | Defines text direction, valid values are <i>ltr</i> and <i>rtl</i> . |
| draggable | false | Boolean | Makes tree nodes draggable. |
| droppable | false | Boolean | Makes tree droppable. |
| dragdropScope | null | String | Scope key to group a set of tree components for transferring nodes using drag and drop. |
| dragMode | self | String | Defines parent-child relationship when a node is dragged, valid values are <i>self</i> (default), <i>parent</i> and <i>ancestor</i> . |
| dropRestrict | none | String | Defines parent-child restrictions when a node is dropped valid values are <i>none</i> (default) and <i>sibling</i> . |
| required | false | Boolean | Validation constraint for selection. |
| requiredMessage | null | String | Message for required selection validation. |
| skipChildren | false | Boolean | Ignores processing of children during lifecycle, improves performance if table only has output components. |
| showUnselectableCheckbox | false | Boolean | Defines if in checkbox selection mode, a readonly checkbox should be displayed for an unselectable node. |
| tabindex | 0 | String | Position of the element in the tabbing order. |
| nodeVar | null | String | Name of the request-scoped variable that'll be used to refer current treenode using EL. |

Getting started with the Tree

Tree is populated with a `org.primefaces.model.TreeNode` instance which corresponds to the root.

```
<p:tree value="#{treeBean.root}" var="node">
  <p:treeNode>
    <h:outputText value="#{node}"/>
  </p:treeNode>
</p:tree>
```

```
public class TreeBean {

    private TreeNode root;

    public TreeBean() {
        root = new TreeNode("Root", null);
        TreeNode node0 = new TreeNode("Node 0", root);
        TreeNode node1 = new TreeNode("Node 1", root);
        TreeNode node2 = new TreeNode("Node 2", root);

        TreeNode node00 = new TreeNode("Node 0.0", node0);
        TreeNode node01 = new TreeNode("Node 0.1", node0);

        TreeNode node10 = new TreeNode("Node 1.0", node1);
        TreeNode node11 = new TreeNode("Node 1.1", node1);

        TreeNode node000 = new TreeNode("Node 0.0.0", node00);
        TreeNode node001 = new TreeNode("Node 0.0.1", node00);
        TreeNode node010 = new TreeNode("Node 0.1.0", node01);

        TreeNode node100 = new TreeNode("Node 1.0.0", node10);
    }

    //getter of root
}
```

TreeNode vs p:TreeNode

TreeNode API is used to create the node model and consists of *org.primefaces.model.TreeNode* instances, on the other hand `<p:treeNode />` represents a component of type *org.primefaces.component.tree.UITreeNode*. You can bind a *TreeNode* to a particular `p:treeNode` using the *type* name. Document Tree example in upcoming section demonstrates a sample usage.

TreeNode API

TreeNode has a simple API to use when building the backing model. For example if you call `node.setExpanded(true)` on a particular node, tree will render that node as expanded.

| Property | Type | Description |
|----------|----------------|------------------------------------------------------------|
| type | String | type of the treeNode name, default type name is "default". |
| data | Object | Encapsulated data |
| children | List<TreeNode> | List of child nodes |
| parent | TreeNode | Parent node |
| expanded | Boolean | Flag indicating whether the node is expanded or not |

Dynamic Tree

Tree is non-dynamic by default and toggling happens on client-side. In order to enable ajax toggling set dynamic setting to true.

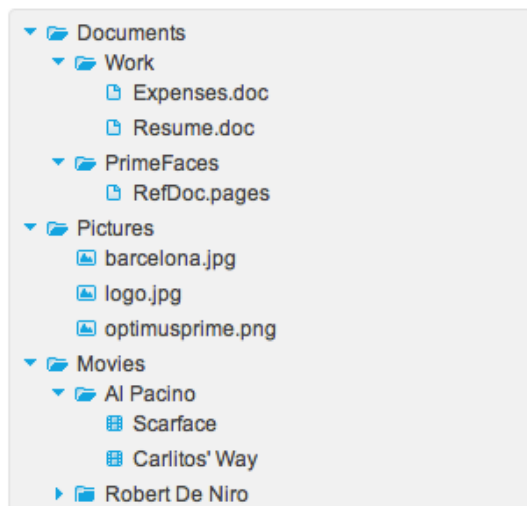
```
<p:tree value="#{treeBean.root}" var="node" dynamic="true">
  <p:treeNode>
    <h:outputText value="#{node}"/>
  </p:treeNode>
</p:tree>
```

Non-Dynamic: When toggling is set to client all the treenodes in model are rendered to the client and tree is created, this mode is suitable for relatively small datasets and provides fast user interaction. On the otherhand it's not suitable for large data since all the data is sent to the client also client side tree is stateless.

Dynamic: Dynamic mode uses ajax to fetch the treenodes from server side on demand, compared to the client toggling, dynamic mode has the advantage of dealing with large data because only the child nodes of the root node is sent to the client initially and whole tree is lazily populated. When a node is expanded, tree only loads the children of the particular expanded node and send to the client for display.

Multiple TreeNode Types

It's a common requirement to display different `TreeNode` types with a different UI (eg icon). Suppose you're using tree to visualize a company with different departments and different employees, or a document tree with various folders, files each having a different formats (music, video). In order to solve this, you can place more than one `<p:treeNode />` components each having a different type and use that "type" to bind `TreeNode`'s in your model. Following example demonstrates a document explorer. Here is the final output to achieve;



Document Explorer is implemented with four different `<p:treeNode />` components and additional CSS skinning to visualize expanded/closed folder icons.

```
<p:tree value="#{bean.root}" var="doc">
  <p:treeNode expandedIcon="ui-icon ui-icon-folder-open"
    collapsedIcon="ui-icon ui-icon-folder-collapsed">
    <h:outputText value="#{doc.name}"/>
  </p:treeNode>
  <p:treeNode type="document" icon="ui-icon ui-icon-document">
    <h:outputText value="#{doc.name}" />
  </p:treeNode>
  <p:treeNode type="picture" icon="ui-icon ui-icon-image">
    <h:outputText value="#{doc.name}" />
  </p:treeNode>
  <p:treeNode type="mp3" icon="ui-icon ui-icon-video">
    <h:outputText value="#{doc.name}" />
  </p:treeNode>
</p:tree>
```

```

public class Bean {

    private TreeNode root;

    public Bean() {
        root = new DefaultTreeNode("root", null);

        TreeNode documents = new DefaultTreeNode("Documents", root);
        TreeNode pictures = new DefaultTreeNode("Pictures", root);
        TreeNode music = new DefaultTreeNode("Music", root);

        TreeNode work = new DefaultTreeNode("Work", documents);
        TreeNode primefaces = new DefaultTreeNode("PrimeFaces", documents);

        //Documents
        TreeNode expenses = new DefaultTreeNode("document", "Expenses.doc", work);
        TreeNode resume = new DefaultTreeNode("document", "Resume.doc", work);
        TreeNode refdoc = new DefaultTreeNode("document", "RefDoc.pages", primefaces);

        //Pictures
        TreeNode barca = new DefaultTreeNode("picture", "barcelona.jpg", pictures);
        TreeNode primelogo = new DefaultTreeNode("picture", "logo.jpg", pictures);
        TreeNode optimus = new DefaultTreeNode("picture", "optimus.png", pictures);

        //Music
        TreeNode turkish = new DefaultTreeNode("Turkish", music);
        TreeNode cemKaraca = new DefaultTreeNode("Cem Karaca", turkish);
        TreeNode erkinKoray = new DefaultTreeNode("Erkin Koray", turkish);
        TreeNode mogollar = new DefaultTreeNode("Mogollar", turkish);

        TreeNode nemalacak = new DefaultTreeNode("mp3", "Nem Alacak Felek Benim",
cemKaraca);
        TreeNode resimdeki = new DefaultTreeNode("mp3", "Resimdeki Goz Yaslari",
cemKaraca);

        TreeNode copculer = new DefaultTreeNode("mp3", "Copculer", erkinKoray);
        TreeNode oylebirgecer = new DefaultTreeNode("mp3", "Oyle Bir Gecer", erkinKoray);

        TreeNode toprakana = new DefaultTreeNode("mp3", "Toprak Ana", mogollar);
        TreeNode bisiyapmali = new DefaultTreeNode("mp3", "Bisi Yapmali", mogollar);
    }
    //getter of root
}

```

Integration between a `TreeNode` and a `p:treeNode` is the type attribute, for example music files in document explorer are represented using `TreeNodes` with type "mp3", there's also a `p:treeNode` component with same type "mp3". This results in rendering all music nodes using that particular `p:treeNode` representation which displays a note icon. Similarly document and pictures have their own `p:treeNode` representations.

Folders on the other hand have two states whose icons are defined by *expandedIcon* and *collapsedIcon* attributes.

Ajax Behavior Events

Tree provides various ajax behavior events.

| Event | Listener Parameter | Fired |
|----------|----------------------------------------|----------------------------|
| expand | org.primefaces.event.NodeExpandEvent | When a node is expanded. |
| collapse | org.primefaces.event.NodeCollapseEvent | When a node is collapsed. |
| select | org.primefaces.event.NodeSelectEvent | When a node is selected. |
| unselect | org.primefaces.event.NodeUnselectEvent | When a node is unselected. |

Following tree has three listeners;

```
<p:tree value="#{treeBean.model}" dynamic="true">
  <p:ajax event="select" listener="#{treeBean.onNodeSelect}" />
  <p:ajax event="expand" listener="#{treeBean.onNodeExpand}" />
  <p:ajax event="collapse" listener="#{treeBean.onNodeCollapse}" />
  ...
</p:tree>
```

```
public void onNodeSelect(NodeSelectEvent event) {
    String node = event.getTreeNode().getData().toString();
}

public void onNodeExpand(NodeExpandEvent event) {
    String node = event.getTreeNode().getData().toString();
}

public void onNodeCollapse(NodeCollapseEvent event) {
    String node = event.getTreeNode().getData().toString();
}
```

Event listeners are also useful when dealing with huge amount of data. The idea for implementing such a use case would be providing only the root and child nodes to the tree, use event listeners to get the selected node and add new nodes to that particular tree at runtime.

Selection

Node selection is a built-in feature of tree and it supports three different modes. Selection should be a `TreeNode` for single case and an array of `TreeNodes` for multiple and checkbox cases, tree finds the selected nodes and assign them to your selection model.

single: Only one at a time can be selected, selection should be a `TreeNode` reference.

multiple: Multiple nodes can be selected, selection should be a `TreeNode[]` reference.

checkbox: Multiple selection is done with checkbox UI, selection should be a `TreeNode[]` reference.

```
<p:tree value="#{treeBean.root}" var="node"
  selectionMode="checkbox"
  selection="#{treeBean.selectedNodes}">
  <p:treeNode>
    <h:outputText value="#{node}" />
  </p:treeNode>
</p:tree>
```

```

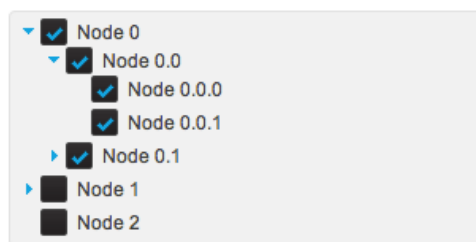
public class TreeBean {

    private TreeNode root;
    private TreeNode[] selectedNodes;

    public TreeBean() {
        root = new CheckboxTreeNode("Root", null);
        //populate nodes
    }
    //getters and setters
}

```

That's it, now the checkbox based tree looks like below. When the form is submitted with a command component like a button, selected nodes will be populated in `selectedNodes` property of `TreeBean`. As checkbox selection have a special hierarchy, use `CheckboxTreeNode` instead.



Node Caching

When caching is turned on by default, dynamically loaded nodes will be kept in memory so re-expanding a node will not trigger a server side request. In case it's set to false, collapsing the node will remove the children and expanding it later causes the children nodes to be fetched from server again.

Handling Node Click

If you need to execute custom javascript when a treenode is clicked, use the `onNodeClick` attribute. Your javascript method will be invoked with passing the html element of the `node` and the click `event` as parameters. In case you have `datakey` defined, you can access `datakey` on client side by using `node.attr('data-datakey')` that represents the data represented by the backing tree model.

DragDrop

Tree nodes can be reordered within a single tree and can even be transferred between multiple trees using dragdrop. For a single tree enable `draggable` and `droppable` options.

```

<p:tree value="#{treeBean.root}" var="node" draggable="true" droppable="true">
  <p:treeNode>
    <h:outputText value="#{node}"/>
  </p:treeNode>
</p:tree>

```

For multiple trees, use a scope attribute to match them and configure dragdrop options depending on your case, following example has 2 trees where one is the source and other is the target. Target can also be reordered within itself.


```

<p:tree value="#{treeBean.root1}" var="node" draggable="true" droppable="false"
        dragdropScope="myscope">
  <p:treeNode>
    <h:outputText value="#{node}"/>
  </p:treeNode>
</p:tree>

<p:tree value="#{treeBean.root2}" var="node" draggable="true" droppable="true"
        dragdropScope="myscope">
  <p:treeNode>
    <h:outputText value="#{node}"/>
  </p:treeNode>
</p:tree>

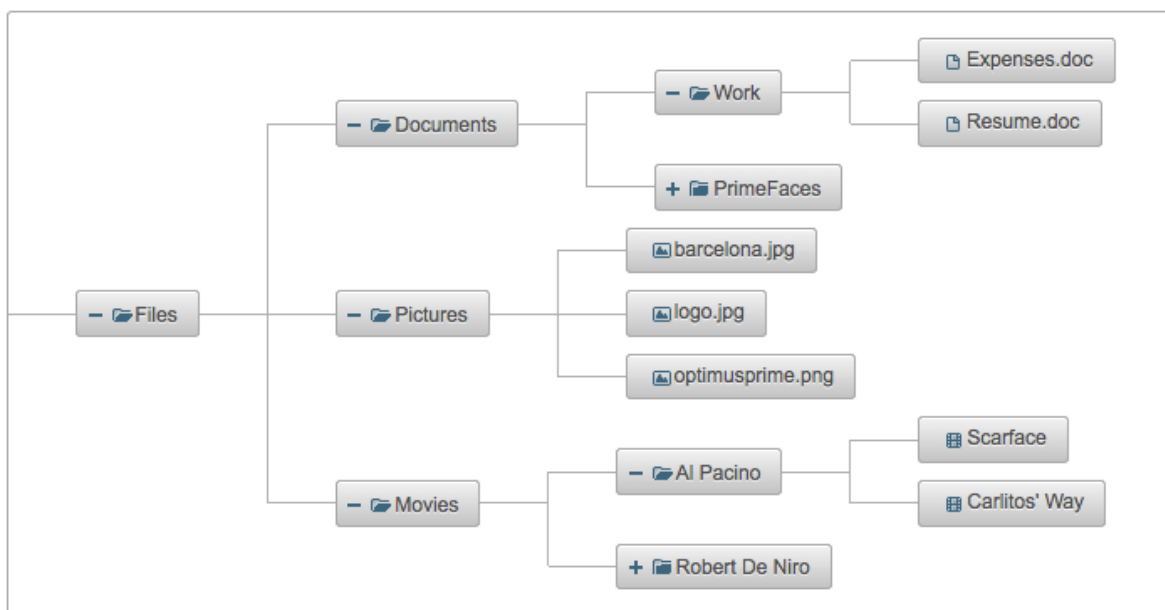
```



Two additional options exist for further configuration, *dragMode* defines the target node that would be dropped, default value is *self* and other values are *parent* and *ancestor*. *dropRestrict* on the other hand, can restrict the drop target to be within the parent by setting it to *sibling*.

Horizontal Tree

Default orientation of tree is vertical, setting it to horizontal displays nodes in an horizontal layout. All features of vertical tree except dragdrop is available for horizontal tree as well.



ContextMenu

Tree has special integration with context menu, you can even match different context menus with different tree nodes using *nodeType* option of context menu that matches the tree node type. Note that selection must be enabled in tree component for context menu integration.

```
<p:contextMenu for="tree">
  <p:menuItem value="View" update="messages"
    actionListener="#{bean.view}" icon="ui-icon-search" />
  <p:menuItem value="View" update="tree"
    actionListener="#{bean.delete}" icon="ui-icon-close" />
</p:contextMenu>

<p:tree id="tree" value="#{bean.root}" var="node"
  selectionMode="single" selection="#{bean.selectedNode}">

  <p:treeNode>
    <h:outputText value="#{node}" />
  </p:treeNode>

</p:tree>
```

Skinning

Tree resides in a container element which *style* and *styleClass* options apply. Following is the list of structural style classes;

| Style Class | Applies |
|----------------------|------------------------|
| .ui-tree | Main container |
| .ui-tree-container | Root node container. |
| .ui-treenode | Tree node |
| .ui-treenode-content | Tree node content |
| .ui-treenode-icon | Tree node icon |
| .ui-tree-toggler | Toggle icon |
| .ui-treenode-label | Tree node label |
| .ui-treenode-parent | Nodes with children |
| .ui-treenode-leaf | Nodes without children |

As skinning style classes are global, see the main theming section for more information.

3.152 TreeNode

TreeNode is used with Tree component to represent a node in tree.

Info

| | |
|------------------|-------------------------------------------------|
| Tag | treeNode |
| Component Class | org.primefaces.component.tree.UITreeNode |
| Component Type | org.primefaces.component.UITreeNode |
| Component Family | org.primefaces.component |

Attributes

| Name | Default | Type | Description |
|---------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UICoMponent instance in a backing bean |
| type | default | String | Type of the tree node |
| styleClass | null | String | Style class to apply a particular tree node type |
| icon | null | String | Icon of the node. |
| expandedIcon | null | String | Expanded icon of the node. |
| collapsedIcon | null | String | Collapsed icon of the node. |

Getting started with the TreeNode

TreeNode is used by Tree and TreeTable components, refer to sections of these components for more information.

3.153 TreeTable

Treetable is used for displaying hierarchical data in tabular format.

| Document Viewer | | | |
|-----------------|------|--------|---|
| Name | Size | Type | |
| ▼ Documents | - | Folder | ⌵ |
| ▶ Work | - | Folder | ⌵ |
| ▶ PrimeFaces | - | Folder | ⌵ |
| ▶ Pictures | - | Folder | ⌵ |
| ▶ Movies | - | Folder | ⌵ |

Info

| | |
|------------------|-------------------------------------------------------------|
| Tag | treeTable |
| Component Class | org.primefaces.component.treetable.TreeTable |
| Component Type | org.primefaces.component.TreeTable |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.TreeTableRenderer |
| Renderer Class | org.primefaces.component.treetable.TreeTableRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | A TreeNode instance as the backing model. |
| var | null | String | Name of the request-scoped variable used to refer each treenode. |
| widgetVar | null | String | Name of the client side widget. |
| style | null | String | Inline style of the container element. |
| styleClass | null | String | Style class of the container element. |
| selection | null | Object | Selection reference. |

| Name | Default | Type | Description |
|--------------------------|------------------|------------|------------------------------------------------------------------------------------------------------------------|
| selectionMode | null | String | Type of selection mode. |
| scrollable | false | Boolean | Whether or not the data should be scrollable. |
| scrollHeight | null | Integer | Height of scrollable data. |
| scrollWidth | null | Integer | Width of scrollable data. |
| tableStyle | null | String | Inline style of the table element. |
| tableStyleClass | null | String | Style class of the table element. |
| emptyMessage | No records found | String | Text to display when there is no data to display. |
| resizableColumns | false | Boolean | Defines if columns can be resized or not. |
| rowStyleClass | null | String | Style class for each row. |
| liveResize | false | Boolean | Columns are resized live in this mode without using a resize helper. |
| required | false | Boolean | Validation constraint for selection. |
| requiredMessage | null | String | Message for required selection validation. |
| sortBy | null | ValueExpr | Expression for default sorting. |
| sortOrder | ascending | String | Defines default sorting order. |
| sortFunction | null | MethodExpr | Custom pluggable sortFunction for default sorting. |
| nativeElements | false | Boolean | In native mode, treetable uses native checkboxes. |
| dataLocale | null | Object | Locale to be used in features such as sorting, defaults to view locale. |
| caseSensitiveSort | false | Boolean | Case sensitivity for sorting, insensitive by default. |
| skipChildren | false | Boolean | Ignores processing of children during lifecycle, improves performance if table only has output components. |
| showUnselectableCheckbox | false | Boolean | Defines if in checkbox selection mode, a readonly checkbox should be displayed for an unselectable node. |
| nodeVar | null | String | Name of the request-scoped variable that'll be used to refer current treenode using EL. |
| expandMode | children | String | Updates children only when set to “children” or the node itself with children when set to “self” on node expand. |

| Name | Default | Type | Description |
|---------------|---------|---------|--------------------------------------------------------------------------------------------------------------|
| stickyHeader | false | Boolean | Sticky header stays in window viewport during scrolling. |
| editable | false | Boolean | Controls incell editing. |
| editMode | row | String | Defines edit mode, valid values are "row" (default) and "cell". |
| editingRow | false | Boolean | Defines if cell editors of row should be displayed as editable or not. Default is false meaning display mode |
| cellSeparator | null | String | Separator text to use in output mode of editable cells with multiple components. |

Getting started with the TreeTable

Similar to the Tree, TreeTable is populated with an *org.primefaces.model.TreeNode* instance that corresponds to the root node. TreeNode API has a hierarchical data structure and represents the data to be populated in tree. For an example, model to be displayed is a collection of documents similar as in tree section.

```
public class Document {
    private String name;
    private String size;
    private String type;
    //getters, setters
}
```

```
<p:treeTable value="#{bean.root}" var="document">
    <p:column>
        <f:facet name="header">
            Name
        </f:facet>
        <h:outputText value="#{document.name}" />
    </p:column>

    //more columns
</p:treeTable>
```

Selection

Node selection is a built-in feature of tree and it supports two different modes. Selection should be a *TreeNode* for single case and an array of *TreeNodes* for multiple case, tree finds the selected nodes and assign them to your selection model.

single: Only one at a time can be selected, selection should be a *TreeNode* reference.

multiple or *checkbox*: Multiple nodes can be selected, selection should be a *TreeNode[]* reference.

As checkbox selection have a special hierarchy, use *CheckboxTreeNode* in checkbox mode.

Ajax Behavior Events

TreeTable provides various ajax behavior events to respond user actions.

| Event | Listener Parameter | Fired |
|---------------|----------------------------------------|-------------------------------|
| expand | org.primefaces.event.NodeExpandEvent | When a node is expanded. |
| collapse | org.primefaces.event.NodeCollapseEvent | When a node is collapsed. |
| select | org.primefaces.event.NodeSelectEvent | When a node is selected. |
| unselect | org.primefaces.event.NodeUnselectEvent | When a node is unselected. |
| colResize | org.primefaces.event.ColumnResizeEvent | When a column is resized. |
| sort | org.primefaces.event.SortEvent | When data is sorted |
| rowEdit | org.primefaces.event.RowEditEvent | On row edit. |
| rowEditInit | org.primefaces.event.RowEditEvent | When row edit is initialized. |
| rowEditCancel | org.primefaces.event.RowEditEvent | When row edit is cancelled. |
| cellEdit | org.primefaces.event.CellEditEvent | On cell edit. |

ContextMenu

TreeTable has special integration with context menu, you can even match different context menus with different tree nodes using *nodeType* option of context menu that matches the tree node type.

Scrolling

Scrollable TreeTable implementation is same as DataTable Scrollable, refer to scrolling part in DataTable section for detailed information.

Dynamic Columns

TreeTable supports dynamic columns via p:columns component, refer to dynamic columns in DataTable section for detailed information.

Column Priorities

Similar to DataTable, TreeTable columns can also be hidden depending on their priorities with respect to screen size.

Sorting

Sorting is enabled by setting *sortBy* expressions at column level.

```

<p:treeTable value="#{bean.root}" var="document">
  <p:column sortBy="#{document.name}">
    <h:outputText value="#{document.name}" />
  </p:column>

  //more columns
</p:treeTable>

```

In case you'd like to display treeTable as sorted on page load use sortBy attribute of treeTable, optional *sortOrder* and *sortFunction* attributes are provided to define the default sort order (ascending or descending) and a java method to do the actual sorting respectively. Refer to datatable sorting section for an example usage of *sortFunction*.

Editing

Similar to DataTable, TreeTable supports row and cell based editing. Refer to datatable for more information.

Skinning

TreeTable content resides in a container element which style and styleClass attributes apply. Following is the list of structural style classes;

| Class | Applies |
|----------------------|-------------------------------------------|
| .ui-treetable | Main container element. |
| .ui-treetable-header | Header of treetable. |
| .ui-treetable-data | Body element of the table containing data |

As skinning style classes are global, see the main theming section for more information.

3.154 Watermark

Watermark displays a hint on an input field.



Info

| | |
|------------------|-------------------------------------------------------------|
| Tag | watermark |
| Component Class | org.primefaces.component.watermark.Watermark |
| Component Type | org.primefaces.component.Watermark |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.WatermarkRenderer |
| Renderer Class | org.primefaces.component.watermark.WatermarkRenderer |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Text of watermark. |
| for | null | String | Component to attach the watermark |

Getting started with Watermark

Watermark requires a target of the input component. In case you don't need to support legacy browsers, prefer placeholder attribute of input components over watermark.

```
<h:inputText id="txt" value="#{bean.searchKeyword}" />
<p:watermark for="txt" value="Search with a keyword" />
```

Form Submissions

Watermark is set as the text of an input field which shouldn't be sent to the server when an enclosing form is submitted. This would result in updating bean properties with watermark values. Watermark component is clever enough to handle this case, by default in non-ajax form submissions, watermarks are cleared. However ajax submissions requires a little manual effort.

Please note that this only applies to legacy browsers, as watermark uses HTML5 placeholder option when available.

```
<h:inputText id="txt" value="#{bean.searchKeyword}" />
<p:watermark for="txt" value="Search with a keyword" />
<p:commandButton value="Submit" onclick="PrimeFaces.cleanWatermarks()"
                  oncomplete="PrimeFaces.showWatermarks()" />
```

Skinning

For browsers that do not support placeholder, there's only one css style class applying watermark which is `.ui-watermark`, you can override this class to bring in your own style.

3.155 Wizard

Wizard provides an ajax enhanced UI to implement a workflow easily in a single page. Wizard consists of several child tab components where each tab represents a step in the process.

The screenshot shows a wizard interface with four tabs: Personal, Address, Contact, and Confirmation. The 'Personal' tab is selected and contains a form titled 'Personal Details'. The form has three input fields: 'Firstname: *', 'Lastname: *', and 'Age:'. Below these fields is a checkbox labeled 'Skip to last:'. A 'Next' button is located at the bottom right of the form.

Info

| | |
|------------------|-------------------------------------------------------|
| Tag | wizard |
| Component Class | org.primefaces.component.wizard.Wizard |
| Component Type | org.primefaces.component.Wizard |
| Component Family | org.primefaces.component |
| Renderer Type | org.primefaces.component.WizardRenderer |
| Renderer Class | org.primefaces.component.wizard.WizardRenderer |

Attributes

| Name | Default | Type | Description |
|----------------|---------|------------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component. |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| step | 0 | String | Id of the current step in flow |
| style | null | String | Style of the main wizard container element. |
| styleClass | null | String | Style class of the main wizard container element. |
| flowListener | null | MethodExpr | Server side listener to invoke when wizard attempts to go forward or back. |
| showNavBar | true | Boolean | Specifies visibility of default navigator arrows. |
| showStepStatus | true | Boolean | Specifies visibility of default step title bar. |

| Name | Default | Type | Description |
|-----------|---------|--------|----------------------------------------------------------------|
| onback | null | String | Javascript event handler to be invoked when flow goes back. |
| onnext | null | String | Javascript event handler to be invoked when flow goes forward. |
| nextLabel | null | String | Label of next navigation button. |
| backLabel | null | String | Label of back navigation button. |
| widgetVar | null | String | Name of the client side widget |

Getting Started with Wizard

Each step in the flow is represented with a tab. As an example following wizard is used to create a new user in a total of 4 steps where last step is for confirmation of the information provided in first 3 steps. To begin with create your backing bean, it's important that the bean lives across multiple requests so avoid a request scope bean. Optimal scope for wizard is viewScope.

```
public class UserWizard {
    private User user = new User();

    public User getUser() {
        return user;
    }

    public void setUser(User user) {
        this.user = user;
    }

    public void save(ActionEvent actionEvent) {
        //Persist user
        FacesMessage msg = new FacesMessage("Successful",
            "Welcome :" + user.getFirstname());
        FacesContext.getCurrentInstance().addMessage(null, msg);
    }
}
```

User is a simple pojo with properties such as firstname, lastname, email and etc. Following wizard requires 3 steps to get the user data; Personal Details, Address Details and Contact Details. Note that last tab contains read-only data for confirmation and the submit button.

```

<h:form>

<p:wizard>
  <p:tab id="personal">
    <p:panel header="Personal Details">

      <h:messages errorClass="error"/>

      <h:panelGrid columns="2">
        <h:outputText value="Firstname: *" />
        <h:inputText value="#{userWizard.user.firstname}" required="true"/>

        <h:outputText value="Lastname: *" />
        <h:inputText value="#{userWizard.user.lastname}" required="true"/>

        <h:outputText value="Age: " />
        <h:inputText value="#{userWizard.user.age}" />
      </h:panelGrid>
    </p:panel>
  </p:tab>

  <p:tab id="address">
    <p:panel header="Adress Details">

      <h:messages errorClass="error"/>

      <h:panelGrid columns="2" columnClasses="label, value">
        <h:outputText value="Street: " />
        <h:inputText value="#{userWizard.user.street}" />

        <h:outputText value="Postal Code: " />
        <h:inputText value="#{userWizard.user.postalCode}" />

        <h:outputText value="City: " />
        <h:inputText value="#{userWizard.user.city}" />
      </h:panelGrid>
    </p:panel>
  </p:tab>

  <p:tab id="contact">
    <p:panel header="Contact Information">

      <h:messages errorClass="error"/>

      <h:panelGrid columns="2">
        <h:outputText value="Email: *" />
        <h:inputText value="#{userWizard.user.email}" required="true"/>

        <h:outputText value="Phone: " />
        <h:inputText value="#{userWizard.user.phone}"/>

        <h:outputText value="Additional Info: " />
        <h:inputText value="#{userWizard.user.info}"/>
      </h:panelGrid>
    </p:panel>
  </p:tab>

```

```

<p:tab id="confirm">
  <p:panel header="Confirmation">

    <h:panelGrid id="confirmation" columns="6">
      <h:outputText value="Firstname: " />
      <h:outputText value="#{userWizard.user.firstname}"/>

      <h:outputText value="Lastname: " />
      <h:outputText value="#{userWizard.user.lastname}"/>

      <h:outputText value="Age: " />
      <h:outputText value="#{userWizard.user.age}" />

      <h:outputText value="Street: " />
      <h:outputText value="#{userWizard.user.street}" />

      <h:outputText value="Postal Code: " />
      <h:outputText value="#{userWizard.user.postalCode}"/>

      <h:outputText value="City: " />
      <h:outputText value="#{userWizard.user.city}"/>

      <h:outputText value="Email: " />
      <h:outputText value="#{userWizard.user.email}" />

      <h:outputText value="Phone " />
      <h:outputText value="#{userWizard.user.phone}"/>

      <h:outputText value="Info: " />
      <h:outputText value="#{userWizard.user.info}"/>

      <h:outputText />
      <h:outputText />
    </h:panelGrid>

    <p:commandButton value="Submit" actionListener="#{userWizard.save}" />

  </p:panel>
</p:tab>

</p:wizard>
</h:form>

```

AJAX and Partial Validations

Switching between steps is based on ajax, meaning each step is loaded dynamically with ajax. Partial validation is also built-in, by this way when you click next, only the current step is validated, if the current step is valid, next tab's contents are loaded with ajax. Validations are not executed when flow goes back.

Navigations

Wizard provides two icons to interact with; next and prev. Please see the skinning wizard section to know more about how to change the look and feel of a wizard.

Custom UI

By default wizard displays right and left arrows to navigate between steps, if you need to come up with your own UI, set *showNavBar* to false and use the provided the client side api.

```
<p:wizard showNavBar="false" widgetVar="wiz">
    ...
</p:wizard>

<h:outputLink value="#" onclick="PF('wiz').next();">Next</h:outputLink>
<h:outputLink value="#" onclick="PF('wiz').back();">Back</h:outputLink>
```

FlowListener

If you'd like get notified on server side when wizard attempts to go back or forward, define a *flowListener*.

```
<p:wizard flowListener="#{userWizard.handleFlow}">
    ...
</p:wizard>
```

```
public String handleFlow(FlowEvent event) {
    String currentStepId = event.getCurrentStep();
    String stepToGo = event.getNextStep();

    if(skip)
        return "confirm";
    else
        return event.getNextStep();
}
```

Steps here are simply the ids of tab, by using a *flowListener* you can decide which step to display next so wizard does not need to be linear always. If you need to update other component(s) on page within a flow, use *RequestContext.update(String clientId)* api.

Client Side Callbacks

Wizard is equipped with *onback* and *onnext* attributes, in case you need to execute custom javascript after wizard goes back or forth. You just need to provide the names of javascript functions as the values of these attributes.

```
<p:wizard onnext="alert('Next')" onback="alert('Back')">
    ...
</p:wizard>
```

Client Side API

Widget: *PrimeFaces.widget.Wizard*

| Method | Params | Return Type | Description |
|----------------|--------|-------------|------------------------------------|
| next() | - | void | Proceeds to next step. |
| back() | - | void | Goes back in flow. |
| getStepIndex() | - | Number | Returns the index of current step. |
| showNextNav() | - | void | Shows next button. |
| hideNextNav() | - | void | Hides next button. |
| showBackNav() | - | void | Shows back button. |
| hideBackNav() | - | void | Hides back button. |

Skinning

Wizard resides in a container element that *style* and *styleClass* attributes apply. Following is the list of structural css classes.

| Selector | Applies |
|------------------------|-----------------------------------|
| .ui-wizard | Main container element. |
| .ui-wizard-content | Container element of content. |
| .ui-wizard-step-titles | Container of step titles. |
| .ui-wizard-step-title | Each step title. |
| .ui-wizard-navbar | Container of navigation controls. |
| .ui-wizard-nav-back | Back navigation control. |
| .ui-wizard-nav-next | Forward navigation control. |

As skinning style classes are global, see the main theming section for more information.

4. Partial Rendering and Processing

PrimeFaces provides a partial rendering and view processing feature based on standard JSF 2 APIs to enable choosing what to process in JSF lifecycle and what to render in the end with ajax.

4.1 Partial Rendering

In addition to components like `autoComplete`, `datatable`, `slider` with built-in ajax capabilities, PrimeFaces also provides a generic PPR (Partial Page Rendering) mechanism to update JSF components with ajax. Several components are equipped with the common PPR attributes (e.g. `update`, `process`, `onstart`, `oncomplete`).

4.1.1 Infrastructure

PrimeFaces Ajax Framework is based on standard server side APIs of JSF 2. There are no additional artifacts like `custom AjaxViewRoot`, `AjaxStateManager`, `AjaxViewHandler`, `Servlet Filters`, `HtmlParsers`, `PhaseListeners` and so on. PrimeFaces aims to keep it clean, fast and lightweight.

On client side rather than using client side API implementations of JSF implementations like `Mojarra` and `MyFaces`, PrimeFaces scripts are based on the most popular javascript library; `jQuery` which is far more tested, stable regarding ajax, dom handling, dom tree traversing than a JSF implementations scripts.

4.1.2 Using IDs

Getting Started

When using PPR you need to specify which component(s) to update with ajax. If the component that triggers PPR request is at the same namingcontainer (eg. `form`) with the component(s) it renders, you can use the server ids directly. In this section although we'll be using `commandButton`, same applies to every component that's capable of PPR such as `commandLink`, `poll`, `remoteCommand` and etc.

```
<h:form>
  <p:commandButton update="display" />

  <h:outputText id="display" value="#{bean.value}" />
</h:form>
```

PrependId

Setting `prependId` setting of a form has no effect on how PPR is used.

```
<h:form prependId="false">
  <p:commandButton update="display" />

  <h:outputText id="display" value="#{bean.value}" />
</h:form>
```

ClientId

It is also possible to define the client id of the component to update.

```
<h:form id="myform">
  <p:commandButton update="myform:display" />
  <h:outputText id="display" value="#{bean.value}"/>
</h:form>
```

Different NamingContainers

If your page has different naming containers (e.g. two forms), you also need to add the container id to search expression so that PPR can handle requests that are triggered inside a namingcontainer that updates another namingcontainer. Following is the suggested way using separator char as a prefix, note that this uses same search algorithm as standard JSF 2 implementation;

```
<h:form id="form1">
  <p:commandButton update=":form2:display" />
</h:form>

<h:form id="form2">
  <h:outputText id="display" value="#{bean.value}"/>
</h:form>
```

Please read **findComponent** algorithm described in link below used by both JSF core and PrimeFaces to fully understand how component referencing works.

<http://docs.oracle.com/javaee/6/api/javax/faces/component/UIComponent.html>

JSF h:form, datatable, composite components are naming containers, in addition tabView, accordionPanel, dataTable, dataGrid, dataList, carousel, galleria, ring, sheet and subTable are PrimeFaces component that implement NamingContainer.

Multiple Components

Multiple components to update can be specified with providing a list of ids separated by a comma, whitespace or even both.

```
<h:form>
  <p:commandButton update="display1,display2" />
  <p:commandButton update="display1 display2" />
  <h:outputText id="display1" value="#{bean.value1}"/>
  <h:outputText id="display2" value="#{bean.value2}"/>
</h:form>
```

4.1.3 Notifying Users

ajaxStatus is the component to notify the users about the status of **global** ajax requests. See the ajaxStatus section to get more information about the component.

Global vs Non-Global

By default ajax requests are global, meaning if there is an ajaxStatus component present on page, it is triggered.

If you want to do a "silent" request not to trigger ajaxStatus instead, set global to false. An example with commandButton would be;

```
<p:commandButton value="Silent" global="false" />  
  
<p:commandButton value="Notify" global="true" />
```

4.1.4 Bits&Pieces

PrimeFaces Ajax Javascript API

See the javascript section to learn more about the PrimeFaces Javascript Ajax API.

4.2 Partial Processing

In Partial Page Rendering, only specified components are rendered, similarly in Partial Processing only defined components are processed. Processing means executing Apply Request Values, Process Validations, Update Model and Invoke Application JSF lifecycle phases only on defined components.

This feature is a simple but powerful enough to do group validations, avoiding validating unwanted components, eliminating need of using immediate and many more use cases. Various components such as `commandButton`, `commandLink` are equipped with `process` attribute, in examples we'll be using `commandButton`.

4.2.1 Partial Validation

A common use case of partial process is doing partial validations, suppose you have a simple contact form with two dropdown components for selecting city and suburb, also there's an `inputText` which is required. When city is selected, related suburbs of the selected city is populated in suburb dropdown.

```
<h:form>

  <h:selectOneMenu id="cities" value="#{bean.city}">
    <f:selectItems value="#{bean.cityChoices}" />
    <p:ajax listener="#{bean.populateSuburbs}" update="suburbs"
      process="@all"/>
  </h:selectOneMenu>

  <h:selectOneMenu id="suburbs" value="#{bean.suburb}">
    <f:selectItems value="#{bean.suburbChoices}" />
  </h:selectOneMenu>

  <h:inputText value="#{bean.email}" required="true"/>

</h:form>
```

When the city dropdown is changed an ajax request is sent to execute `populateSuburbs` method which populates `suburbChoices` and finally update the suburbs dropdown. Problem is `populateSuburbs` method will not be executed as lifecycle will stop after process validations phase to jump render response as email input is not provided. Reason is `p:ajax` has `@all` as the value stating to process every component on page but there is no need to process the `inputText`.

The solution is to define what to process in `p:ajax`. As we're just making a city change request, only processing that should happen is cities dropdown.

```
<h:form>
  <h:selectOneMenu id="cities" value="#{bean.city}">
    <f:selectItems value="#{bean.cityChoices}" />
    <p:ajax actionListener="#{bean.populateSuburbs}"
      event="change" update="suburbs" process="@this"/>
  </h:selectOneMenu>

  <h:selectOneMenu id="suburbs" value="#{bean.suburb}">
    <f:selectItems value="#{bean.suburbChoices}" />
  </h:selectOneMenu>

  <h:inputText value="#{bean.email}" required="true"/>
</h:form>
```

That is it, now `populateSuburbs` method will be called and suburbs list will be populated. Note that default value for process option is `@this` already for `p:ajax` as stated in `AjaxBehavior` documentation, it is explicitly defined here to give a better understanding of how partial processing works.

4.2.2 Using Ids

Partial Process uses the same technique applied in partial updates to specify component identifiers to process.

4.3 Search Expression Framework

Core JSF component referencing is based on component identifiers only with basic keyword support. PrimeFaces Search Expression Framework (SEF) provides both server side and client side extensions to make it easier to reference components. SEF is utilized in partial update, process and whenever a component references another component.

4.3.1 Keywords

Keywords are the easier way to reference components, they resolve to ids so that if an id changes, the reference does not need to change. Core JSF provides a couple of keywords and PrimeFaces provides more along with composite expression support.

| Keyword | Type | Description |
|------------------|------------|--------------------------------------------------------------------------------------------------------------|
| @this | Standard | Current component. |
| @all | Standard | Whole view. |
| @form | Standard | Closest ancestor form of current component. |
| @none | Standard | No component. |
| @namingcontainer | PrimeFaces | Closest ancestor naming container of current component. |
| @parent | PrimeFaces | Parent of the current component. |
| @composite | PrimeFaces | Closest composite component ancestor. |
| @child(n) | PrimeFaces | nth child. |
| @row(n) | PrimeFaces | nth row. |
| @previous | PrimeFaces | Previous sibling. |
| @next | PrimeFaces | Next sibling. |
| @widgetVar(name) | PrimeFaces | Component with given widgetVar. |
| @root | PrimeFaces | UIViewRoot instance of the view, can be used to start searching from the root instead the current component. |
| @id | PrimeFaces | Used to search components by their id ignoring the component tree structure and naming containers. |

Consider the following case where ids are used for referencing;

```
<h:form id="form1">
  <p:commandButton id="btn" update="form1" process="btn" />
  <h:outputText value="#{bean.value}"/>
</h:form>
```

Using keywords, same can be written as;

```
<h:form id="form1">
  <p:commandButton id="btn" update="@form" process="@this" />
  <h:outputText value="#{bean.value}"/>
</h:form>
```

Composite Expressions

Multiple keywords can be combined in a single expression using colon;

- @form:@parent
- @composite:mybuttonid
- @this:@parent:@parent
- @form:@child(2)

Usage Scenarios

SEF is not just at partial process and update, they are also available whenever a component is referencing another.

```
<h:form>
  <p:commandButton id="dynaButton" value="Show" type="button" />
  <p:menu overlay="true" trigger="@parent:dynaButton">
    //items
  </p:menu>
</h:form>
```

4.3.2 PrimeFaces Selectors (PFS)

PFS integrates jQuery Selector API with JSF component referencing model so that referencing can be done using jQuery Selector API instead of core id based JSF model. Best way to explain the power of PFS is examples;

Update all forms

```
update="@(:form)"
```

Update first form

```
update="@(:form:first)"
```

Update all components that has styleClass named mystyle

```
update="@(:.mystyle)"
```

Update and process all inputs

```
update="@(:input)" process="@(:input)"
```

Update all datatables

```
update="@(.ui-datatable)"
```

Process input components inside any panel and update all panels

```
process="@(.ui-panel :input)" update="@(.ui-panel)"
```

Process input components but not select components

```
process="@(:input:not(select))"
```

Update input components that are disabled

```
update="@(:input:disabled)"
```

PFS can be used with other referencing approaches as well;

```
update="compId :form:compId @(:input) @parent:@child(2)"
```

```
<h:form>
  <p:commandButton id="dynaButton" value="Show" type="button" styleClass="btn"/>
  <p:menu overlay="true" trigger="@(.btn)">
    //items
  </p:menu>
</h:form>
```

PFS provides an alternative, flexible, grouping based approach to reference components to partially process and update. There is less CPU server load compared to regular referencing because JSF component tree is not traversed on server side to find a component and figure out the client id as PFS is implemented on client side by looking at dom tree. Another advantage is avoiding naming container limitations, just remember the times you've faced with cannot find component exception since the component you are looking for is in a different naming container like a form or a datatable. PFS can help you out in tricky situations by following jQuery's "write less do more" style.

For PFS to function properly and not to miss any component, it is required to have explicitly defined ids on the matched set as core JSF components usually do not render auto ids. So even though manually defined ids won't be referenced directly, they are still required for PFS to be collected and send in the request.

For full reference of jQuery selector api, see;

```
http://api.jquery.com/category/selectors/
```


4.4 PartialSubmit

Core JSF Ajax implementation and by default PrimeFaces serializes the whole form to build the post data in ajax requests so the same data is posted just like in a non-ajax request. This has a downside in large views where you only need to process/execute a minor part of the view. Assume you have a form with 100 input fields, there is an input field with ajaxbehavior attached processing only itself(@this) and then updates another field onblur. Although only a particular input field is processed, whole form data will be posted with the unnecessary information that would be ignored during server side processing but consume resources.

PrimeFaces provides partialSubmit feature to reduce the network traffic and computing on client side. When partialSubmit is enabled, only data of components that will be partially processed on the server side are serialized. By default partialSubmit is disabled and you can enable it globally using a context parameter.

```
<context-param>
  <param-name>primefaces.SUBMIT</param-name>
  <param-value>partial</param-value>
</context-param>
```

Components like buttons and behaviors like p:ajax are equipped with partialSubmit option so you can override the global setting per component.

```
<p:commandButton value="Submit" partialSubmit="true|false" />
```

5. Javascript API

PrimeFaces renders unobstrusive javascript which cleanly separates behavior from the html. Client side engine is powered by jQuery version 1.8.1 which is the latest at the time of the writing.

5.1 PrimeFaces Namespace

PrimeFaces is the main javascript object providing utilities and namespace.

| Method | Description |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| escapeClientId(id) | Escaped JSF ids with semi colon to work with jQuery. |
| addSubmitParam(el, name, param) | Adds request parameters dynamically to the element. |
| getCookie(name) | Returns cookie with given name. |
| setCookie(name, value, cfg) | Sets a cookie with given name, value and options. e.g. <i>PrimeFaces.setCookie('name', 'test');</i> <i>PrimeFaces.setCookie('name', 'test', {expires:7, path:''})</i> Second example creates cookie for entire site that expires in 7 days. |
| deleteCookie(name, cfg) | Deletes a cookie with given and and options. |
| skinInput(input) | Progressively enhances an input element with theming. |
| info(msg), debug(msg), warn(msg), error(msg) | Client side log API. |
| changeTheme(theme) | Changes theme on the fly with no page refresh. |
| cleanWatermarks() | Watermark component extension, cleans all watermarks on page before submitting the form. |
| showWatermarks() | Shows watermarks on form. |
| getWidgetById(clientid) | Returns the widget instance from the client id |

To be compatible with other javascript entities on a page, PrimeFaces defines two javascript namespaces;

PrimeFaces.widget.*

Contains custom PrimeFaces widgets like;

- PrimeFaces.widget.DataTable
- PrimeFaces.widget.Tree
- PrimeFaces.widget.Poll
- and more...

Most of the components have a corresponding client side widget with same name.

PrimeFaces.ajax.*

PrimeFaces.ajax namespace contains the ajax API which is described in next section.

5.2 Ajax API

PrimeFaces Ajax Javascript API is powered by jQuery and optimized for JSF. Whole API consists of three properly namespaced simple javascript functions.

PrimeFaces.ajax.Request

Sends ajax requests that execute JSF lifecycle and retrieve partial output. Function signature is as follows;

```
PrimeFaces.ajax.Request.handle(cfg);
```

Configuration Options

| Option | Description |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| formId | Id of the form element to serialize, if not defined parent form of source is used. |
| async | Flag to define whether request should go in ajax queue or not, default is false. |
| global | Flag to define if p:ajaxStatus should be triggered or not, default is true. |
| update | Component(s) to update with ajax. |
| process | Component(s) to process in partial request. |
| source | Client id of the source component causing the request. |
| params | Additional parameters to send in ajax request. |
| onstart() | Javascript callback to process before sending the ajax request, return false to cancel the request. |
| onsuccess(data, status, xhr) | Javascript callback to process when ajax request returns with success code. Takes three arguments, xml response, status code and xmlhttprequest. |
| onerror(xhr, status, error) | Javascript callback to process when ajax request fails. Takes three arguments, xmlhttprequest, status string and exception thrown if any. |
| oncomplete(xhr, status, args) | Javascript callback to process when ajax request completes. Takes three arguments, xmlhttprequest, status string and optional arguments provided by RequestContext API. |

Examples

Suppose you have a JSF page called *createUser* with a simple form and some input components.

```
<h:form id="userForm">
  <h:inputText id="username" value="#{userBean.user.name}" />
  ... More components
</h:form>
```

You can post all the information with ajax using;

```
PrimeFaces.ajax.Request.handle({
  formId:'userForm'
  ,source:'userForm'
  ,process:'userForm'
});
```

More complex example with additional options;

```
PrimeFaces.ajax.Request.handle({
  formId: 'userForm',
  source: 'userForm',
  process: 'userForm',
  update: 'msgs',
  params:{
    'param_name1':'value1',
    'param_name2':'value2'
  },
  oncomplete:function(xhr, status) {alert('Done');}
});
```

We highly recommend using `p:remoteComponent` instead of low level javascript api as it generates the same with much less effort and less possibility to do an error.

PrimeFaces.ajax.Response

`PrimeFaces.ajax.Response.handle()` updates the specified components if any and synchronizes the client side JSF state. DOM updates are implemented using jQuery which uses a very fast algorithm.

Abort

Use the abort API in case you'd like to cancel all the ongoing requests;

```
PrimeFaces.ajax.Queue.abortAll()
```

6. Dialog Framework

Dialog Framework (DF) is used to open an external xhtml page in a dialog that is generated dynamically on runtime. This is quite different to regular usage of dialogs with declarative p:dialog components as DF is based on a programmatic API where dialogs are created and destroyed at runtime. Note that DF and the declarative approach are two different ways and both can even be used together. Usage is quite simple, RequestContext has openDialog and closeDialog methods;

```
/**
 * Open a view in dialog.
 * @param outcome The logical outcome used to resolve a navigation case.
 */
public abstract void openDialog(String outcome);

/**
 * Open a view in dialog.
 * @param outcome The logical outcome used to resolve a navigation case.
 * @param options Configuration options for the dialog.
 * @param params Parameters to send to the view displayed in a dialog.
 */
public abstract void openDialog(String outcome, Map<String,Object> options,
Map<String,List<String>> params);

/**
 * Close a dialog.
 * @param data Optional data to pass back to a dialogReturn event.
 */
public abstract void closeDialog(Object data);
```

Configuration

DF requires the following configuration to be present in faces config file.

```
<application>
  <action-listener>
    org.primefaces.application.DialogActionListener
  </action-listener>
  <navigation-handler>
    org.primefaces.application.DialogNavigationHandler
  </navigation-handler>
  <view-handler>
    org.primefaces.application.DialogViewHandler
  </view-handler>
</application>
```

Getting Started

Simplest use case of DF is opening an xhtml view like *cars.xhtml* in a dialog;

```

<!DOCTYPE html>
<html xmlns="http://www.w3.org/1999/xhtml" xmlns:h="http://java.sun.com/jsf/html"
      xmlns:p="http://primefaces.org/ui">

  <h:head>
    <title>Cars</title>
  </h:head>

  <h:body>
    <p:dataTable var="car" value="#{tableBean.cars}">
      //columns
    </p:dataTable>
  </h:body>
</html>

```

On the host page, call `RequestContext.openDialog("viewname");`

```
<p:commandButton value="View Cars" actionListener="#{hostBean.view}" />
```

```

public void view() {
    RequestContext.getCurrentInstance().openDialog("viewCars");
}

```

Once the response is received from the request caused by command button a dialog would be generated with the contents of `viewCars.xhtml`. Title of the dialog is retrieved from the title element of the `viewCars`, in this case, `Cars`.

Dialog Configuration

Overloaded `openDialog` method provides advanced configuration regarding the visuals of dialog along with parameters to send to the dialog content.

```
<p:commandButton value="View Cars" actionListener="#{hostBean.viewCustomized}" />
```

```

public void view() {
    Map<String, Object> options = new HashMap<String, Object>();
    options.put("modal", true);
    options.put("draggable", false);
    options.put("resizable", false);
    options.put("contentHeight", 320);

    RequestContext.getCurrentInstance().openDialog("viewCars", options, null);
}

```

Here is the full list of configuration options;

| Name | Default | Type | Description |
|-------------------|---------|---------|----------------------------------------------------|
| modal | false | Boolean | Controls modality of the dialog. |
| resizable | true | Boolean | When enabled, makes dialog resizable. |
| draggable | true | Boolean | When enabled, makes dialog draggable. |
| width | auto | String | Width of the dialog. |
| height | auto | String | Height of the dialog. |
| contentWidth | 640 | String | Width of the dialog content. |
| contentHeight | auto | String | Height of the dialog content. |
| closable | true | Boolean | Whether the dialog can be closed or not. |
| includeViewParams | false | Boolean | When enabled, includes the view parameters. |
| headerElement | null | String | Client id of the element to display inside header. |
| minimizable | false | Boolean | Makes dialog minimizable. |
| maximizable | false | Boolean | Makes dialog maximizable. |

Data Communication

Page displayed in the dialog can pass data back to the parent page. The trigger component needs to have *dialogReturn* ajax behavior event to hook-in when data is returned from dialog.

```
<!DOCTYPE html>
<html xmlns="http://www.w3.org/1999/xhtml" xmlns:h="http://java.sun.com/jsf/html"
      xmlns:p="http://primefaces.org/ui">

  <h:head>
    <title>Cars</title>
  </h:head>

  <h:body>
    <p:dataTable var="car" value="#{tableBean.cars}">
      //columns
      <p:column headerText="Select">
        <p:commandButton icon="ui-icon-search"
          actionListener="#{tableBean.selectCarFromDialog(car)}" />
      </p:column>
    </p:dataTable>
  </h:body>
</html>
```

```
public void selectCarFromDialog(Car car) {
    RequestContext.getCurrentInstance().closeDialog(car);
}
```


At host page, the button that triggered the dialog should have *dialogReturn* event.

```
<p:commandButton value="View Cars" actionListener="#{hostBean.viewCars}">
  <p:ajax event="dialogReturn" listener="#{hostBean.handleReturn}"
</p:commandButton>
```

```
public void view() {
    RequestContext.getCurrentInstance().openDialog("viewCars");
}

public void handleReturn(SelectEvent event) {
    Car car = (Car) event.getObject();
}
```

Remarks on Dialog Framework

- Calls to DialogFramework API within a non-ajax are ignored.
- Content Width and Height can take percentage value like 100%.

Dialog Messages

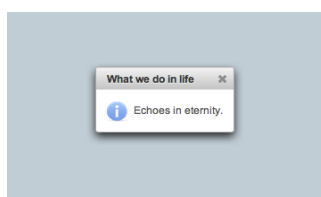
Displaying FacesMessages in a Dialog is a common case where a facesmessage needs to be added to the context first, dialog content containing a message component needs to be updated and finally dialog gets shown with client side api. DF has a simple utility to bypass this process by providing a shortcut;

```
/**
 * Displays a message in a dialog.
 * @param message FacesMessage to be displayed.
 */
public abstract void showMessageInDialog(FacesMessage message);
```

Using this shortcut it is just one line to implement the same functionality;

```
<p:commandButton value="Show" actionListener="#{bean.save}" />
```

```
public void save() {
    //business logic
    RequestContext.getCurrentInstance().showMessageInDialog(new
    FacesMessage(FacesMessage.SEVERITY_INFO,
        "What we do in life", "Echoes in eternity.));
}
```



7. Client Side Validation

PrimeFaces Client Side Validation (CSV) Framework is the most complete and advanced CSV solution for JavaServer Faces and Java EE. CSV support for JSF is not an easy task, it is not simple as integrating a 3rd party javascript plugin as JSF has its own lifecycle, concepts like conversion and then validation, partial processing, facesmessages and many more. Real CSV for JSF should be compatible with server side implementation, should do what JSF does, so that users do not experience difference behaviors on client side and server side.

- Compatible with Server Side Implementation.
- Conversion and Validation happens at client side.
- Partial Process&Update support for Ajax.
- I18n support along with component specific messages.
- Client side Renderers for message components.
- Easy to write custom client converters and validators.
- Global or Component based enable/disable.
- Advanced Bean Validation Integration.
- Little footprint using HTML5.

7.1 Configuration

CVS is disabled by default and a global parameter is required to turn it on.

```
<context-param>
  <param-name>primefaces.CLIENT_SIDE_VALIDATION</param-name>
  <param-value>true</param-value>
</context-param>
```

At page level, enable *validateClient* attribute of `commandButton` and `commandLink` components.

```
<h:form>
  <p:messages />
  <p:inputText required="true" />
  <p:inputTextarea required="true" />
  <p:commandButton value="Save" validateClient="true" ajax="false"/>
</h:form>
```

That is all for the basics, clicking the button validates the form at client side and displays the errors using messages component.

CSV works for PrimeFaces components only, standard h: * components are not supported.

7.2 Ajax vs Non-Ajax

CSV works differently depending on the request type of the trigger component to be compatible with cases where CVS is not enabled.

Non-Ajax

In non-ajax case, all visible and editable input components in the form are validated and message components must be placed inside the form.

Ajax

CSV supports partial processing and updates on client side as well, if process attribute is enabled, the components that would be processed at server side gets validated at client side. Similarly if update attribute is defined, only message components inside the updated parts gets rendered. Whole process happens at client side.

7.3 Events

CSV provides a behavior called `p:clientValidator` to do instant validation in case you do not want to wait for the users to fill in the form and hit `commandButton/commandLink`. Using `clientBehavior` and custom events, CSV for a particular component can run with events such as `change` (default), `blur`, `keyup`.

```
<h:form>
  <p:panel header="Validate">
    <h:panelGrid columns="4" cellpadding="5">
      <h:outputLabel for="text" value="Text: (Change)" />
      <p:inputText id="text" value="#{validationBean.text}" required="true">
        <f:validateLength minimum="2" maximum="5" />
        <p:clientValidator />
      </p:inputText>
      <p:message for="text" display="icon" />
      <h:outputText value="#{validationBean.text}" />

      <h:outputLabel for="integer" value="Integer: (Keyup)" />
      <p:inputText id="integer" value="#{validationBean.integer}">
        <p:clientValidator event="keyup"/>
      </p:inputText>
      <p:message for="integer" display="icon" />
      <h:outputText value="#{validationBean.integer}" />
    </h:panelGrid>

    <p:commandButton value="Save" ajax="false" icon="ui-icon-check"
      validateClient="true"/>
  </p:panel>
</h:form>
```

7.4 Messages

Validation errors are displayed as the same way in server side validation, texts are retrieved from a client side bundle and message components are required for the displays.

I18N

Default language is English for the CSV messages and for other languages or to customize the default messages, PrimeFaces Locales bundle needs to be present at the page if you'd like to provide translations. For more info on PrimeFaces Locales, visit <http://code.google.com/p/primefaces/wiki/PrimeFacesLocales>.

Rendering

PrimeFaces message components have client side renderers for CSV support, these are p:message, p:messages and p:growl. Component options like showSummary, showDetail, globalOnly, mode are all implemented by client side renderer for compatibility.

MyFaces vs Mojarra

Bean validation messages between implementations have a slight difference regarding labels, mojarra do not the label of the field but myfaces does. For example;

```
Mojarra:
javax.faces.validator.BeanValidator.MESSAGE={0}

MyFaces:
javax.faces.validator.BeanValidator.MESSAGE={1}: {0}
```

Default CSV messages follow the convention of Mojarra however if you prefer to display the label along with the message, override can be done by adding {1} to the message;

```
Default:
PrimeFaces.locales['en_US'].messages['javax.faces.validator.BeanValidator.MESSAGE'] =
'{0}';

With Label:
PrimeFaces.locales['en_US'].messages['javax.faces.validator.BeanValidator.MESSAGE'] =
'{1}: {0}';
```

7.5 Bean Validation

CSV has built-in integration with Bean Validation by validating the constraints defined with annotations at client side.

```
<h:form>
  <p:growl />
  <h:panelGrid>
    <h:outputLabel for="name" value="Name:" />
    <p:inputText id="name" value="#{bean.name}" label="Name"/>
    <p:message for="name" />

    <h:outputLabel for="age" value="Age: (@Min(10) @Max(20))" />
    <p:inputText id="age" value="#{bean.age}" label="Age"/>
    <p:message for="age" />
  </h:panelGrid>
  <p:commandButton value="Save" validateClient="false" ajax="false" />
</h:form>
```

```
public class Bean {  
  
    @Size(min=2,max=5)  
    private String name;  
  
    @Min(10) @Max(20)  
    private Integer age;  
}
```

All of the standard constraints are supported.

7.6 Extending CSV

Using CSV APIs, it is easy to write your own custom converters and validators.

Email Validator with JSF

Your custom validator must implement `ClientValidator` interface to provide the client validator id and the optional metadata.

```

package org.primefaces.examples.validate;

import java.util.Map;
import java.util.regex.Pattern;
import javax.faces.application.FacesMessage;
import javax.faces.component.UIComponent;
import javax.faces.context.FacesContext;
import javax.faces.validator.FacesValidator;
import javax.faces.validator.Validator;
import javax.faces.validator.ValidatorException;
import org.primefaces.validate.ClientValidator;

@FacesValidator("custom.emailValidator")
public class EmailValidator implements Validator, ClientValidator {

    private Pattern pattern;

    private static final String EMAIL_PATTERN = "^[_A-Za-z0-9-\\+]+(\\.[_A-Za-z0-9-9-]+)*@" + "[A-Za-z0-9-]+(\\.([A-Za-z0-9-9-]+)*([A-Za-z]{2,})$";

    public EmailValidator() {
        pattern = Pattern.compile(EMAIL_PATTERN);
    }

    public void validate(FacesContext context, UIComponent component, Object value)
        throws ValidatorException {
        if(value == null) {
            return;
        }

        if(!pattern.matcher(value.toString()).matches()) {
            throw new ValidatorException(new
FacesMessage(FacesMessage.SEVERITY_ERROR, "Validation Error",
value + " is not a valid email;"));
        }
    }

    public Map<String, Object> getMetadata() {
        return null;
    }

    public String getValidatorId() {
        return "custom.emailValidator";
    }
}

```

Validator is plugged-in using the standard way.

```

<h:form>
    <p:messages />
    <p:inputText id="email" value="#{bean.value}">
        <f:validator validatorId="custom.emailValidator" />
    </p:inputText>
    <p:message for="email" />
    <p:commandButton value="Save" validateClient="true" ajax="false"/>
</h:form>

```

Last step is implementing the validator at client side and configuring it.

```
PrimeFaces.validator['custom.emailValidator'] = {
    pattern: /\S+@\S+/,
    validate: function(element, value) {
        //use element.data() to access validation metadata, in this case there is
        none.
        if(!this.pattern.test(value)) {
            throw {
                summary: 'Validation Error',
                detail: value + ' is not a valid email.'
            }
        }
    }
};
```

In some cases your validator might need metadata, for example LengthValidator requires min and max constraints to validate against. Server side validator can pass these by overriding the `getMetadata()` method by providing a map of name,value pairs. At client side, these are accessed via `element.data(key)`.

```
public Map<String, Object> getMetadata() {
    Map<String, Object> data = new HashMap<String, Object>();
    data.put("data-prime", 10);
    return data;
}
```

```
validate: function(element, value) {
    var prime = element.data("prime"); //10

    //validate
}
```

Similarly a client side converter can be written by implementing ClientConverter API and overriding `convert: function(element, submittedValue) {}` method to return a javascript object.

Email Validator with Bean Validation

Bean Validation is also supported for extensions, here is an example of a `@Email` validator.

```
//imports
import org.primefaces.validate.bean.ClientConstraint;

@Target({METHOD, FIELD, ANNOTATION_TYPE})
@Retention(RUNTIME)
@Constraint(validatedBy=EmailConstraintValidator.class)
@ClientConstraint(resolvedBy=EmailClientValidationConstraint.class)
@Documented
public @interface Email {
    String message() default "{org.primefaces.examples.primefaces}";
    Class?>[] groups() default {};
    Class? extends Payload>[] payload() default {};
}
```

`@Constraint` is the regular validator from Bean Validation API and `@ClientConstraint` is from CSV API to resolve metadata.

```
public class EmailConstraintValidator
    implements ConstraintValidator<Email, String>{

    private Pattern pattern;

    private static final String EMAIL_PATTERN = "[_A-Za-z0-9-\\+]+(\\.[_A-Za-z0-9-9-]+)*@"
        + "[A-Za-z0-9-]+(\\.[_A-Za-z0-9-9-]+)*([A-Za-z]{2,})$";

    public void initialize(Email a) {
        pattern = Pattern.compile(EMAIL_PATTERN);
    }

    public boolean isValid(String value, ConstraintValidatorContext cvc) {
        if(value == null)
            return true;
        else
            return pattern.matcher(value.toString()).matches();
    }
}
```

```
public class EmailClientValidationConstraint implements ClientValidationConstraint {

    public static final String MESSAGE_METADATA = "data-p-email-msg";

    public Map<String, Object> getMetadata(ConstraintDescriptor constraintDescriptor)
    {
        Map<String, Object> metadata = new HashMap<String, Object>();
        Map attrs = constraintDescriptor.getAttributes();
        Object message = attrs.get("message");
        if(message != null) {
            metadata.put(MESSAGE_METADATA, message);
        }

        return metadata;
    }

    public String getValidatorId() {
        return Email.class.getSimpleName();
    }
}
```


Final part is implementing the client side validator;

```
PrimeFaces.validator['Email'] = {
    pattern: /\S+@\S+/,
    MESSAGE_ID: 'org.primefaces.examples.validate.email.message',
    validate: function(element, value) {
        var vc = PrimeFaces.util.ValidationContext;

        if(!this.pattern.test(value)) {
            var msgStr = element.data('p-email-msg'),
                msg = msgStr ? {summary:msgStr, detail: msgStr} :
            vc.getMessage(this.MESSAGE_ID);

            throw msg;
        }
    }
};
```

Usage is same as using standard constraints;

```
<h:form>
    <p:messages />
    <p:inputText id="email" value="#{bean.value}" />
    <p:message for="email" />
    <p:commandButton value="Save" validateClient="true" ajax="false"/>
</h:form>
```

```
public class Bean {

    @Email
    private String value;

    //getter-setter
}
```

3rd Party Annotations

When using 3rd party constraints like Hibernate Validator specific annotations, use `BeanValidationMetadataMapper` to define a `ClientValidationConstraint` for them.

```
BeanValidationMetadataMapper.registerConstraintMapping(Class<? extends Annotation>
constraint, ClientValidationConstraint clientValidationConstraint);

BeanValidationMetadataMapper.removeConstraintMapping(Class<? extends Annotation>
constraint);
```


8.1 Applying a Theme

Applying a theme to your PrimeFaces project is very easy. Each theme is packaged as a jar file, download the theme you want to use, add it to the classpath of your application and then define `primefaces.THEME` context parameter at your deployment descriptor (`web.xml`) with the theme name as the value.

Download

Each theme is available for manual download at PrimeFaces Theme Gallery. If you are a maven user, define theme artifact as;

```
<dependency>
  <groupId>org.primefaces.themes</groupId>
  <artifactId>cupertino</artifactId>
  <version>1.0.8</version>
</dependency>
```

`artifactId` is the name of the theme as defined at Theme Gallery page.

Configure

Once you've downloaded the theme, configure PrimeFaces to use it.

```
<context-param>
  <param-name>primefaces.THEME</param-name>
  <param-value>aristo</param-value>
</context-param>
```

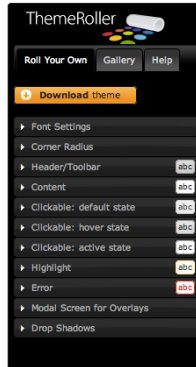
That's it, you don't need to manually add any css to your pages or anything else, PrimeFaces will handle everything for you.

In case you'd like to make the theme dynamic, define an EL expression as the param value.

```
<context-param>
  <param-name>primefaces.THEME</param-name>
  <param-value>#{loggedInUser.preferences.theme}</param-value>
</context-param>
```

8.2 Creating a New Theme

If you'd like to create your own theme instead of using the pre-defined ones, that is easy as well because ThemeRoller provides a powerful and easy to use online visual tool.



Applying your own custom theme is same as applying a pre-built theme however you need to migrate the downloaded theme files from ThemeRoller to PrimeFaces Theme Infrastructure. PrimeFaces Theme convention is the integrated way of applying your custom themes to your project, this approach requires you to create a jar file and add it to the classpath of your application. Jar file **must** have the following folder structure. You can have one or more themes in same jar.

```
-jar
  - META-INF
    - resources
      - primefaces-yourtheme
        - theme.css
        - images
```

1) The theme package you've downloaded from ThemeRoller will have a css file and images folder. Make sure you have “deselect all components” option on download page so that your theme only includes skinning styles. Extract the contents of the package and rename *jquery-ui-{version}.custom.css* to *theme.css*.

2) Image references in your theme.css must also be converted to an expression that JSF resource loading can understand, example would be;

```
url("images/ui-bg_highlight-hard_100_f9f9f9_1x100.png")
```

should be;

```
url("#{resource['primefaces-yourtheme:images/ui-bg_highlight-hard_100_f9f9f9_1x100.png']}")
```

Once the jar of your theme is in classpath, you can use your theme like;

```
<context-param>
  <param-name>primefaces.THEME</param-name>
  <param-value>yourtheme</param-value>
</context-param>
```

8.3 How Themes Work

Powered by ThemeRoller, PrimeFaces separates structural css from skinning css.

Structural CSS

These style classes define the skeleton of the components and include css properties such as margin, padding, display type, dimensions and positioning.

Skinning CSS

Skinning defines the look and feel properties like colors, border colors, background images.

Skinning Selectors

ThemeRoller features a couple of skinning selectors, most important of these are;

| Selector | Applies |
|---------------------|----------------------------------|
| .ui-widget | All PrimeFaces components |
| .ui-widget-header | Header section of a component |
| .ui-widget-content | Content section of a component |
| .ui-state-default | Default class of a clickable |
| .ui-state-hover | Hover class of a clickable |
| .ui-state-active | When a clickable is selected |
| .ui-state-disabled | Disabled elements. |
| .ui-state-highlight | Highlighted elements. |
| .ui-icon | An element to represent an icon. |

These classes are not aware of structural css like margins and paddings, mostly they only define colors. This clean separation brings great flexibility in theming because you don't need to know each and every skinning selectors of components to change their style.

For example Panel component's header section has the *.ui-panel-titlebar* structural class, to change the color of a panel header you don't need to about this class as *.ui-widget-header* also that defines the panel colors also applies to the panel header.

8.4 Theming Tips

- Default font size of themes might be bigger than expected, to change the font-size of PrimeFaces components globally, use the `.ui-widget` style class. An example of smaller fonts;

```
.ui-widget, .ui-widget .ui-widget {
    font-size: 90% !important;
}
```

- When creating your own theme with themeroller tool, select one of the pre-designed themes that is close to the color scheme you want and customize that to save time.
- If you are using Apache Trinidad or JBoss RichFaces, PrimeFaces Theme Gallery includes Trinidad's Casablanca and RichFaces's BlueSky theme. You can use these themes to make PrimeFaces look like Trinidad or RichFaces components during migration.
- To change the style of a particular component instead of all components of same type use namespacing, example below demonstrates how to change header of all panels.

```
.ui-panel-titlebar {
    //css
}
```

or

```
.ui-panel-titlebar.ui-widget-header {
    //css
}
```

To apply css on a particular panel;

```
<p:panel styleClass="custom">
    ...
</p:panel>
```

```
.custom .ui-panel-titlebar {
    //css
}
```

8.5 FontAwesome

Font Awesome gives you scalable vector icons that can instantly be customized — size, color, drop shadow, and anything that can be done with the power of CSS. PrimeFaces bundles FontAwesome 4.6.1 and provides the CSS tuning of components for the icons. Any component that provides an icon attribute such as buttons or menuitems can accept one of the icons of Font Awesome. In order to enable this feature, a context param is required to be enabled.

```
<context-param>
  <param-name>primefaces.FONT_AWESOME</param-name>
  <param-value>true</param-value>
</context-param>
```

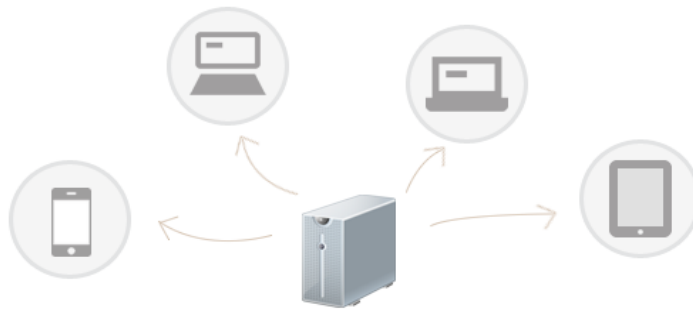
Icons should be prefixed by "fa" in a component;

```
<p:commandButton value="Edit" icon="fa fa-edit" type="button" />
```

For a full list of available icons please visit;

<http://www.primefaces.org/showcase/ui/misc/fa.xhtml>

9. PrimeFaces Push



PrimeFaces Push (PFP) is a push framework built on top of Atmosphere. Atmosphere's creator AsyncIO is a partner company of PrimeTek and the developer of PFP. Atmosphere is highly scalable, supports several containers and browsers, utilizes various transports such as websockets, see, long-polling, streaming and jsonp. For more information please visit;

<https://github.com/Atmosphere/atmosphere>

9.1 Setup

Atmosphere

Atmosphere is required to run PrimeFaces Push, in your pom.xml define the dependency as;

```
<dependency>
  <groupId>org.atmosphere</groupId>
  <artifactId>atmosphere-runtime</artifactId>
  <version>2.3.RC6 or newer</version>
</dependency>
```

Push Servlet

Push Servlet is used as a gateway for clients.

```
<servlet>
  <servlet-name>Push Servlet</servlet-name>
  <servlet-class>org.primefaces.push.PushServlet</servlet-class>
  <async-supported>true</async-supported>
</servlet>

<servlet-mapping>
  <servlet-name>Push Servlet</servlet-name>
  <url-pattern>/primepush/*</url-pattern>
</servlet-mapping>
```


9.2 Annotations

Design of PFP is annotation driven centralized around the main `@PushEndPoint`.

@PushEndPoint

The easiest way to create PFP application is by using the `@PushEndPoint` annotation. This annotation simplifies the process to build an application using PFP avoiding the need to interact with Atmospheres more sophisticated API. This annotation significantly reduces the number of code required to build a powerful real time application by transparently installing Atmospheres components like heartbeat, idle connections detections, disconnect state recovery etc. It also allows the use of external dependency injection framework like CDI, Spring or Guice. Annotation provides one attribute called `path` to define the resource path.

path: The path to the resource.

The default is `"/"` so if you have mapped the `PushServlet` to `"/"`, all request will be delivered to your annotated class. You can also customize the `path`. The `path` value will be used to map an incoming request `uri` path to an annotated `PushEndpoint` class.

```
@PushEndPoint("/chat")
```

@Singleton

Singleton annotation is used to force creating a single, thread safe instance of a `PushEndpoint` annotated classes. For example, if your application set the `@PushEndpoint`'s `path` attribute with a path, by default a new instance of the annotated classes will be created. When annotated with `Singleton` however, a single class will be created.

@OnOpen

The `OnOpen()` will be invoked when the underlying connection is ready to be used, e.g for write operations. Annotated method needs to take the form of;

```
@OnOpen
public void onOpen();

@OnOpen
public void onOpen(RemoteEndpoint r);

@OnOpen
public void onOpen(RemoteEndpoint r, EventBus e);
```

The `RemoteEndpoint` represents the physical connection and can be used to write some data back to the browser. The `EventBus` can be used to fire messages to one or more `RemoteEndpoints` using regex expressions.

@OnMessage

The `OnMessage()` will be invoked when a message is ready to be deliver, e.g as a result of a `EventBus` publish operation or when a browser is `POSTing` some bytes. The annotation's attributes available are;

encoders: A list of [Encoder]() that will be used to encode the annotated method return value. The returned value of an annotated OnMessage method will be broadcasted to all resource associated with the Broadcaster, associated with this annotated classes.

decoders: A list of [Decoder]() used to decode a broadcasted messages into an object matching the methods signature.

Both of the encoders and decoders can be chained, meaning the returned value of an encoder-decoder can be used as an input for the next one.

```
@OnMessage(encoders = {JSONEncoder.class})
public String onMessage(String count) {
    return count;
}
```

Out of the box, PrimeFaces PUSH provides JSON implementations that are;

- org.primefaces.push.impl.JSONEncoder
- org.primefaces.push.impl.JSONDecoder

It is also easy to create your own encoders-decoders by implementing *org.primefaces.push.Encoder* and *org.primefaces.push.Decoder* interfaces.

@OnClose

The @OnClose() will be invoked when the client disconnect, e.g close the connection, when a network outage happens or when a proxy close the connection. Annotated method needs to take the form of;

```
@OnClose
public void onClose();

@OnClose
public void onClose(RemoteEndpoint r);

@OnClose
public void onClose(RemoteEndpoint r, EventBus e);
```

Only one method in a class can be annotated with @OnClose.

@PathParam

@PathParam is used to automatically parse the path and assign path tokens to class variables.

```
@PushEndpoint("/somepath/{room}/{user}")
@Singleton
public class ChatResource {

    @PathParam("room")
    private String room;

    @PathParam("user")
    private String username;

    //...
```

9.3 API

RemoteEndPoint

The RemoteEndpoint() class represents the remote connection, e.g the Browser. An instance of RemoteEndpoint hold information about the headers, queryString, body, uri, path and path segments that can be used for manipulating the incoming request. If you are familiar with the Servlets "HttpServletRequest", the RemoteEndpoint can be seen as an improved version. You can also use a RemoteEndpoint#write to write back messages that will be delivered uniquely to the browser.

EventBus

A distributed lightweight event bus which can encompass multiple PushEndpoint instances. The event bus implements publish / subscribe and point to point messaging. Messages sent over the event bus can be of any type. For publish / subscribe, messages can be published to a Java class annotated with the [PushEndpoint#value]() using one of the method annotated with [OnMessage](). The EventBus is the recommended way for delivering messages. EventBus is retrieved via;

```
EventBus eventBus = EventBusFactory.getDefault().eventBus();
```

Once an EventBus instance is available, publishing data to subscribers is done with overloaded publish methods.

publish(Object o): Fires given object to all connected RemoteEndpoints.

publish(String path, Object o): Fires given object to RemoteEndpoints that connected to the path.

publish(String path, Object o, Reply reply): Fires given object to RemoteEndpoints that connected to the path by passing a Reply instance. Reply is an interface with a callback called *completed(String path)* that is invoked when the EventBus delivered the message to the PushEndPoint that matches the path used to initiate the publish operation.

9.4 Socket Component

Socket is a PrimeFaces component that handles the connection between the server and the browser, common way to use socket is by defining a path and a callback to handle broadcasts.

```
<p:socket channel="/chat" onmessage="handlePublish"/>
```

See Socket component documentation for the full list of available options.

Client Side API

Widget: *PrimeFaces.widget.Socket*

| Method | Params | Return Type | Description |
|--------------|--------|-------------|-------------------------------|
| connect(uri) | uri | void | Connects to given uri. |
| push(json) | json | void | Pushes data from client side. |
| disconnect | - | void | Disconnects from channel. |

9.5 Putting It All Together

PrimeFaces Showcase has various push demos, in this section two of them are covered.

9.5.1 Counter

Counter is a global counter where each button click increments the count value and new value is pushed to all subscribers.

View page has an `outputText` to display the value, a button to increment current value to push, a socket component to connect to `/counter` channel and finally the `onMessage` client side callback to update the UI.

```
<h:form>
  <h:outputText value="#{counterView.count}" styleClass="display" />
  <p:commandButton value="Click" actionListener="#{counterView.increment}" />
</h:form>

<p:socket onMessage="handleMessage" channel="/counter" />

<script type="text/javascript">
function handleMessage(data) {
    $('display').text(data);
}
</script>
```

```
package org.primefaces.examples.push.counter;

import java.io.Serializable;
import javax.faces.bean.ApplicationScoped;
import javax.faces.bean.ManagedBean;
import org.primefaces.push.EventBus;
import org.primefaces.push.EventBusFactory;

@ManagedBean
@ApplicationScoped
public class CounterView implements Serializable{

    private volatile int count;

    public int getCount() {
        return count;
    }

    public void setCount(int count) {
        this.count = count;
    }

    public void increment() {
        count++;

        EventBus eventBus = EventBusFactory.getDefault().eventBus();
        eventBus.publish("/counter", String.valueOf(count));
    }
}
```

increment button actionlistener first adds one to the counter value, gets an EventBus and then pushes the new value to all connected clients. Final piece is writing the CounterResource to handle messages whenever a data is pushed.

```
package org.primefaces.examples.push.counter;

import org.primefaces.push.annotation.OnMessage;
import org.primefaces.push.annotation.PushEndpoint;
import org.primefaces.push.impl.JSONEncoder;

@PushEndpoint("/counter")
public class CounterResource {

    @OnMessage(encoders = {JSONEncoder.class})
    public String onMessage(String count) {
        return count;
    }
}
```

In case you'd like to update components and/or invoke listeners in your backing bean on broadcast, you can use the optional *message* ajax behavior to implement the same functionality but with an extra request.

```
<h:form id="form">
    <h:outputText id="out" value="#{globalCounter.count}" />
    <p:commandButton value="Click" actionListener="#{globalCounter.increment}" />
</h:form>

<p:socket channel="/counter">
    <p:ajax event="message" update="form:out" />
</p:socket>
```

9.5.2 FacesMessage

This sample shows how to push FacesMessages from one client to all others and display them using Growl Component.

```
<p:growl widgetVar="growl" showDetail="true" />

<h:form>
  <p:panel header="Growl">
    <h:panelGrid columns="2">
      <p:outputLabel for="summary" value="Summary: " />
      <p:inputText id="summary" value="#{growlBean.summary}" required="true" />

      <p:outputLabel for="detail" value="Detail: " />
      <p:inputText id="detail" value="#{growlBean.detail}" required="true" />
    </h:panelGrid>

    <p:commandButton value="Send" actionListener="#{growlBean.send}" />
  </p:panel>
</h:form>

<p:socket onMessage="handleMessage" channel="/notify" />

<script type="text/javascript">
function handleMessage(facesmessage) {
  facesmessage.severity = 'info';
  PF('growl').show([facesmessage]);
}
</script>
```

```
package org.primefaces.examples.view;

import javax.faces.application.FacesMessage;
import javax.faces.bean.ManagedBean;
import javax.faces.bean.RequestScoped;
import javax.faces.context.FacesContext;
import javax.faces.event.ActionEvent;
import org.primefaces.push.EventBus;
import org.primefaces.push.EventBusFactory;

@ManagedBean
@RequestScoped
public class GrowlBean {

  private final static String CHANNEL = "/notify";
  private String text, summary, detail;
  //getters-setters

  public void send() {
    EventBus eventBus = EventBusFactory.getDefault().eventBus();
    eventBus.publish(CHANNEL, new FacesMessage(summary, detail));
  }
}
```

NotifyResource simply encodes the pushed messages as JSON.

```
package org.primefaces.examples.push.notify;

import javax.faces.application.FacesMessage;
import org.primefaces.push.annotation.OnMessage;
import org.primefaces.push.annotation.PushEndpoint;
import org.primefaces.push.impl.JSONEncoder;

@PushEndpoint("/notify")
public class NotifyResource {

    @OnMessage(encoders = {JSONEncoder.class})
    public FacesMessage onMessage(FacesMessage message) {
        return message;
    }
}
```

9.6 Tips and Tricks

Dynamic Paths

Client side API would be handy to create dynamic channels, channel name of the socket does not need to be static and you can create dynamic channels on runtime since a channel is basically a path name. `@PathParam` is very handy to automatically parse the Path and assign the path tokens to variables.

See chat sample in showcase for an example of dynamic channels used to send private messages.

Proxies

Proxies are problematic not just for PrimeFaces Push - Atmosphere solution but in all solutions. If your proxy supports websockets, make sure to add the necessary configuration. Another solution that is considered as a workaround is to override the default uri of the push server. Default uri is `protocol://contextPath/primepush/channel`, for example PrimeFaces online showcase is running on jetty that is behind an apache mod proxy which doesn't support websockets at time of the writing. Solution is to configure PrimeFaces to use another push server like;

```
<context-param>
  <param-name>primefaces.PUSH_SERVER_URL</param-name>
  <param-value>http://www.primefaces.org:8080</param-value>
</context-param>
```

So that socket component bypasses the proxy and directly communicates with the application.

Supported Server and Client Environments

Atmosphere does a great job in supporting different servers and browsers. See the detailed list at;

<https://github.com/Atmosphere/atmosphere/wiki/Supported-WebServers-and-Browsers>

Scalability

Atmosphere is build to scale via plugins such as JMS, Redis, XMPP, Hazelcast and more. Refer to atmosphere documentation to see how to configure atmosphere in more than one server. PushServlet extends from AtmosphereServlet so any configuration option for AtmosphereServlet also applies PushServlet.

10. PrimeFaces Mobile

PrimeFaces Mobile (PFM) is a UI Kit to create JSF applications optimized for mobile devices. PFM is built on top of jQuery Mobile, a touch-optimized HTML5 UI framework providing support for various platforms.

In addition to the seamless integration with jQuery Mobile, PFM features a Mobile Renderkit for popular PrimeFaces components, ajax framework extensions, mobile ajax behavior events, integrated navigation model, lazy loading of pages, responsive widgets and more.

10.1 Setup

Mobile ships with PrimeFaces Core so no additional download is required.

Configuration

A mobile navigation handler is necessary inside faces configuration to enable navigations support.

```
<application>
  <navigation-handler>
    org.primefaces.mobile.application.MobileNavigationHandler
  </navigation-handler>
</application>
```

Taglib

PFM provides mobile specific components with the following taglib.

```
xmlns:pm="http://primefaces.org/mobile"
```

RenderKit

RenderKit is the core part of PFM featuring optimized renderers for mobile environments. There are two main ways to enable PFM RenderKit.

Core view tag has a renderKitId attribute to set the renderer kit of the page.

```
<f:view renderKitId="PRIMEFACES_MOBILE" />
```

If your application fully consists of mobile pages, then a global configuration in faces configuration file should be preferred instead of per page configuration.

```
<application>
  <default-render-kit-id>PRIMEFACES_MOBILE</application>
</application>
```

10.2 Pages

A mobile page is a regular facelets xhtml file with mobile page containers defined with `pm:page`.

```
<!DOCTYPE html>
<html xmlns="http://www.w3.org/1999/xhtml"
      xmlns:h="http://java.sun.com/jsf/html"
      xmlns:f="http://java.sun.com/jsf/core"
      xmlns:p="http://primefaces.org/ui"
      xmlns:pm="http://primefaces.org/mobile">

  <f:view renderKitId="PRIMEFACES_MOBILE" />

  <h:head>
</h:head>

  <h:body>

    <pm:page>
      <pm:header title="Basic Page"></pm:header>
      <pm:content></pm:content>
    </pm:page>

  </h:body>
</html>
```

A single page xhtml view can have more than one page. By default the first page is visible on load.

```
<!DOCTYPE html>
<html xmlns="http://www.w3.org/1999/xhtml"
      xmlns:h="http://java.sun.com/jsf/html"
      xmlns:f="http://java.sun.com/jsf/core"
      xmlns:p="http://primefaces.org/ui"
      xmlns:pm="http://primefaces.org/mobile">

  <f:view renderKitId="PRIMEFACES_MOBILE" />

  <h:head>
</h:head>

  <h:body>

    <pm:page id="main">
      <pm:header title="Main Page"></pm:header>
      <pm:content></pm:content>
    </pm:page>

    <pm:page id="second">
      <pm:header title="Second Page"></pm:header>
      <pm:content></pm:content>
    </pm:page>

  </h:body>
</html>
```

10.2 Navigations

PFM supports all kinds of standard navigations with the addition of a custom navigation model.

Internal

Internal navigation is between pages in the same xhtml view. Outcome should have the **pm:** prefix for this kind of navigation. Using the multi page sample at section 10.1;

```
<p:button outcome="pm:second" />
<p:link outcome="pm:second" />
```

Button and Link components displays the page whose id is *second*. In case you'd like to navigate after a POST request, usage would be similar.

```
<p:commandButton value="Go to Second" action="#{bean.go}" />
```

```
public String go() {
    return "pm:second";
}
```

External

External navigations to another xhtml in same domain or a resource in another domain is same as standard approach.

```
<p:button outcome="/ui/home" value="Home" />
<p:button href="http://www.primefaces.org" value="Home" />
```

Transitions

Various animations are available to run during the navigation. Name of the effect is appended to the outcome. In addition, *reverse* option is provided for back navigations.

```
<p:button outcome="pm:second?transition=pop" />
<p:link outcome="pm:second?transition=flip&reverse=true" />
```

List of possible transitions is *fade*, *pop*, *flip*, *turn*, *flow*, *slide*, *slidefade*, *slideup* and *slidedown*. Fade is the default transition and to turn off animation, set none as the value.

Client API

A client side API is available to navigate manually from a custom javascript code. Signature is;

PrimeFaces.Mobile.navigate(to, cfg);

```
PrimeFaces.Mobile.navigate('#second', {
    reverse: true|false,
    transition: 'fade'
});
```

10.3 Components

10.3.1 Content

Content is container component for the content area of a page.

Info

| | |
|------------------|----------------------------------------------------------------|
| Tag | content |
| Component Class | org.primefaces.mobile.component.content.Content |
| Component Type | org.primefaces.mobile.Content |
| Component Family | org.primefaces.mobile.component |
| Renderer Type | org.primefaces.mobile.component.ContentRenderer |
| Renderer Class | org.primefaces.mobile.component.content.ContentRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |

Getting Started with the Content

Content is a children component of a page.

```
<pm:page>
  <pm:content>
    //page content
  </pm:content>
</pm:page>
```

10.3.2 Field

Field is a responsive layout component for label-input pairs.

Info

| | |
|------------------|------------------------------------------------------------|
| Tag | field |
| Component Class | org.primefaces.mobile.component.field.Field |
| Component Type | org.primefaces.mobile.Field |
| Component Family | org.primefaces.mobile.component |
| Renderer Type | org.primefaces.mobile.component.FieldRenderer |
| Renderer Class | org.primefaces.mobile.component.field.FieldRenderer |

Attributes

| Name | Default | Type | Description |
|----------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |

Getting Started with the Field

Field is used as the container of a label and an input component. As a responsive component, field displays the optimal placement for its children based on available width.

```
<pm:field>
  <p:outputLabel for="text" value="Text:" />
  <p:inputText id="txt" />
</pm:field>
```

10.3.3 Footer

Footer is container component for the bottom area of a page.

Info

| | |
|------------------|--------------------------------------------------------------|
| Tag | footer |
| Component Class | org.primefaces.mobile.component.footer.Footer |
| Component Type | org.primefaces.mobile.Footer |
| Component Family | org.primefaces.mobile.component |
| Renderer Type | org.primefaces.mobile.component.FooterRenderer |
| Renderer Class | org.primefaces.mobile.component.footer.FooterRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| title | null | String | Title text of the footer. |
| fixed | false | Boolean | Positions the footer as fixed on scroll. |
| theme | null | String | Swatch of the component. |
| tapToggle | true | Boolean | For fixed footers, sets whether the fixed toolbar's visibility can be toggled by tapping on the page. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |

Getting Started with the Footer

Footer is a children component of a page.

```
<pm:page>
  <pm:footer title="Footer"></pm:footer>
</pm:page>
```

10.3.4 Header

Header is container component for the top area of a page.

Info

| | |
|------------------|--------------------------------------------------------------|
| Tag | header |
| Component Class | org.primefaces.mobile.component.header.Header |
| Component Type | org.primefaces.mobile.Header |
| Component Family | org.primefaces.mobile.component.Header |
| Renderer Type | org.primefaces.mobile.component.HeaderRenderer |
| Renderer Class | org.primefaces.mobile.component.header.HeaderRenderer |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| title | null | String | Title text of the header. |
| fixed | false | Boolean | Positions the header as fixed on scroll. |
| theme | null | String | Swatch of the component. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |

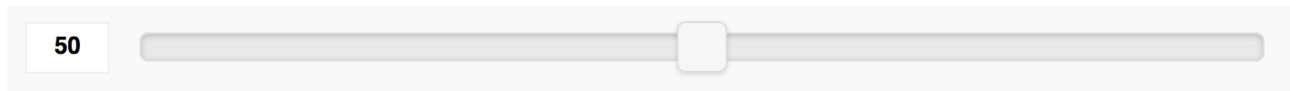
Getting Started with the Header

Header is a children component of a page.

```
<pm:page>
  <pm:header title="Footer"></pm:header>
</pm:page>
```

10.3.5 InputSlider

InputSlider is an input component with a touch enabled slider.



Info

| | |
|------------------|------------------------------------------------------------------------|
| Tag | inputSlider |
| Component Class | org.primefaces.mobile.component.inputslider.InputSlider |
| Component Type | org.primefaces.mobile.InputSlider |
| Component Family | org.primefaces.mobile.component. |
| Renderer Type | org.primefaces.mobile.component.InputSliderRenderer |
| Renderer Class | org.primefaces.mobile.component.inputslider.InputSliderRenderer |

Attributes

| Name | Default | Type | Description |
|---------------------|---------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| value | null | Object | Value of the component. |
| converter | null | Object | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id. |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |
| validator | null | Object | A method binding expression that refers to a method validating the input. |
| valueChangeListener | null | Object | A method binding expression that refers to a method for handling a valuechangeevent. |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |

| Name | Default | Type | Description |
|------------------|---------|---------|-------------------------------------------------|
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| minValue | 0 | Integer | Minimum value of the slider. |
| maxValue | 100 | Integer | Maximum value of the slider. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| step | 1 | String | Step factor to apply on slider move. |
| disabled | false | Boolean | Disables or enables the slider. |
| label | null | String | User presentable name. |
| highlight | false | Boolean | Highlights the value range when enabled. |

Getting Started with the InputSlider

InputSlider requires an integer as its value.

```
<pm:inputSlider value="50" />
<pm:inputSlider value="#{backingView.integerProperty}" />
```

Boundaries

0 and 100 are the default boundaries, these can be customized using *minValue* and *maxValue*.

```
<pm:inputSlider minValue="100" maxValue="200" value="#{backingView.intProperty}" />
```

10.3.6 Page

Page is main component to define an internal page within an xhtml.

Info

| | |
|------------------|----------------------------------------------------------|
| Tag | page |
| Component Class | org.primefaces.mobile.component.page.Page |
| Component Type | org.primefaces.mobile.Page |
| Component Family | org.primefaces.mobile.component |
| Renderer Type | org.primefaces.mobile.component.PageRenderer |
| Renderer Class | org.primefaces.mobile.component.page.PageRenderer |

Attributes

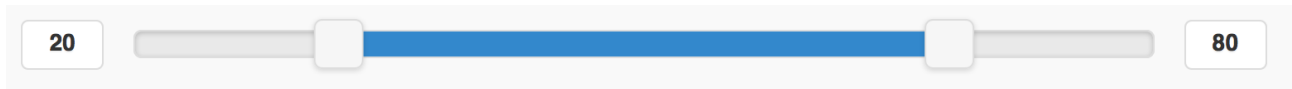
| Name | Default | Type | Description |
|------------|---------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| title | null | String | Title text of the page. |
| theme | null | String | Swatch of the page. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| lazy | false | Boolean | Lazy loading views are not rendered on initial page load to improve performance and instead lazily loaded on demand when there are first navigated to. |

Getting Started with the Page

Please see section 10.1 Pages for the usage and more information.

10.3.7 RangeSlider

RangeSlider is a grouping component for dual sliders to create a range selection.



Info

| | |
|------------------|----------------------------------------------------------------|
| Tag | rangeSlider |
| Component Class | org.primefaces.mobile.component.rangeslider.RangeSlider |
| Component Type | org.primefaces.mobile.RangeSlider |
| Component Family | org.primefaces.mobile.component |
| Renderer Type | org.primefaces.mobile.component.RangeSlider |
| Renderer Class | org.primefaces.mobile.component.rangeslider.RangeSlider |

Attributes

| Name | Default | Type | Description |
|------------|---------|---------|------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UIComponent instance in a backing bean |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| highlight | false | Boolean | Highlights the value range when enabled. |

Getting Started with the RangeSlider

RangeSlider needs two sliders as children, first slider is for the start of range and second for the end.

```
<pm:rangeSlider>
  <pm:inputSlider value="#{backingView.start}"/>
  <pm:inputSlider value="#{backingView.end}"/>
</pm:rangeSlider>
```

10.3.8 Switch (Deprecated)

Switch is deprecated, use `p:inputSwitch` instead.

Switch is an input component to select a boolean value.



Info

| | |
|------------------|------------------------------------------------------------------|
| Tag | switch |
| Component Class | org.primefaces.mobile.component.uiswitch.UISwitch |
| Component Type | org.primefaces.mobile.UISwitch |
| Component Family | org.primefaces.mobile.component |
| Renderer Type | org.primefaces.mobile.component.UISwitchRenderer |
| Renderer Class | org.primefaces.mobile.component.uiswitch.UISwitchRenderer |

Attributes

| Name | Default | Type | Description |
|-----------|---------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | null | String | Unique identifier of the component |
| rendered | true | Boolean | Boolean value to specify the rendering of the component, when set to false component will not be rendered. |
| binding | null | Object | An el expression that maps to a server side UICoMponent instance in a backing bean |
| value | null | Object | Value of the component. |
| converter | null | Object | An el expression or a literal text that defines a converter for the component. When it's an EL expression, it's resolved to a converter instance. In case it's a static text, it must refer to a converter id. |
| immediate | false | Boolean | When set true, process validations logic is executed at apply request values phase for this component. |
| required | false | Boolean | Marks component as required |
| validator | null | Object | A method binding expression that refers to a method validating the input. |

| Name | Default | Type | Description |
|---------------------|---------|---------|--------------------------------------------------------------------------------------|
| valueChangeListener | null | Object | A method binding expression that refers to a method for handling a valuechangeevent. |
| requiredMessage | null | String | Message to be displayed when required field validation fails. |
| converterMessage | null | String | Message to be displayed when conversion fails. |
| validatorMessage | null | String | Message to be displayed when validation fields. |
| onLabel | on | Integer | Minimum value of the slider. |
| offLabel | off | Integer | Maximum value of the slider. |
| label | null | String | User presentable name. |
| style | null | String | Inline style of the component. |
| styleClass | null | String | Style class of the component. |
| label | null | String | User presentable name. |
| disabled | false | Boolean | Disables or enables the switch. |
| onchange | false | String | Client side callback to execute on change event. |

Getting Started with the Switch

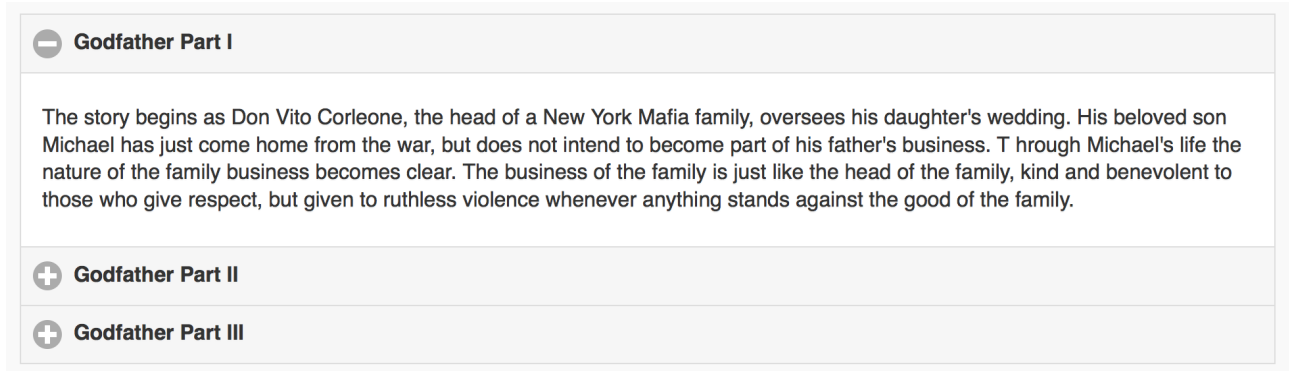
Value of switch should be a boolean property, if the value is false offLabel would be displayed and onLabel would be used otherwise.

```
<pm:switch value="#{backingView.booleanProperty}" />
```

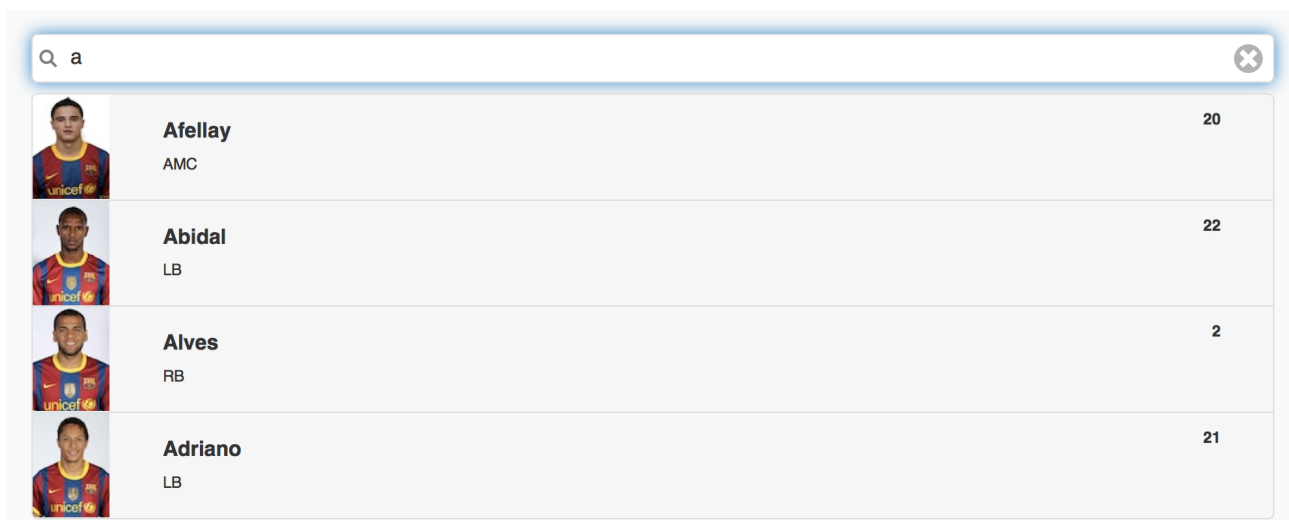
10.4 RenderKit

In addition to the mobile components, various core components have been enhanced with touch optimized mobile renderers so that same component can be optimized for a mobile browser. Since usage is same in desktop and mobile environments, refer to chapter 3 for documentation about these components.

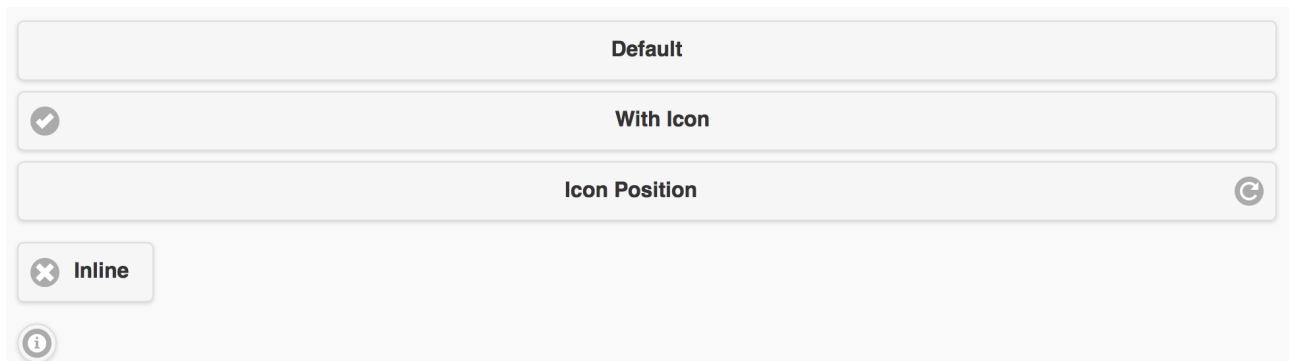
10.4.1 AccordionPanel



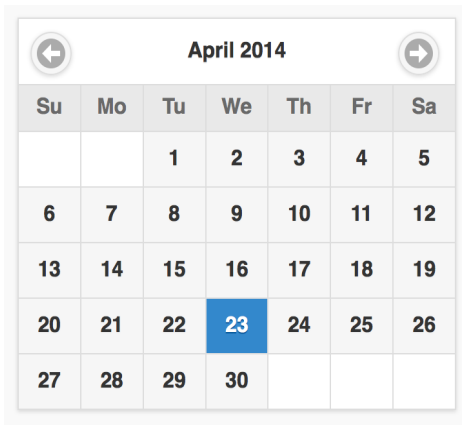
10.4.2 AutoComplete



10.4.3 Button

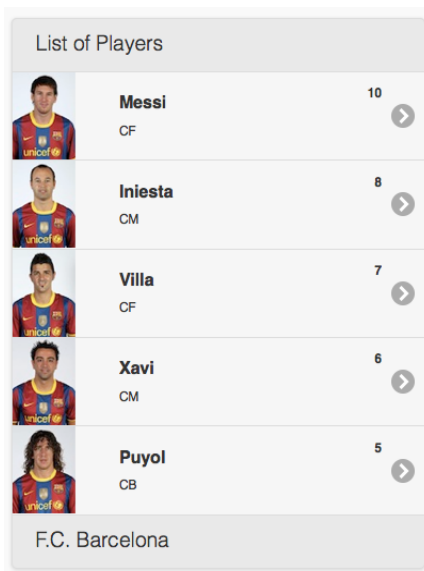


10.4.4 Calendar



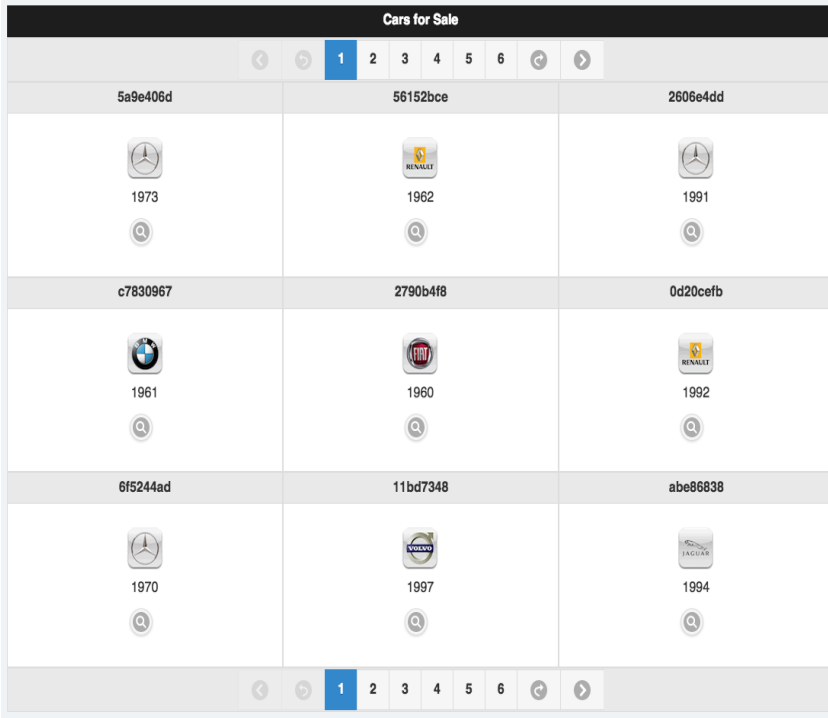
10.4.5 ConfirmDialog

10.4.6 DataList

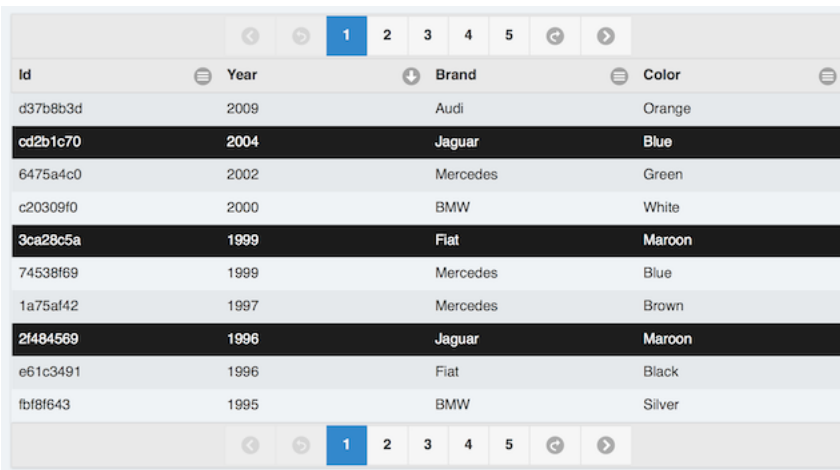


Additional supported ajax events are swiperight, swiperight, tap and taphold.

10.4.7 DataGrid

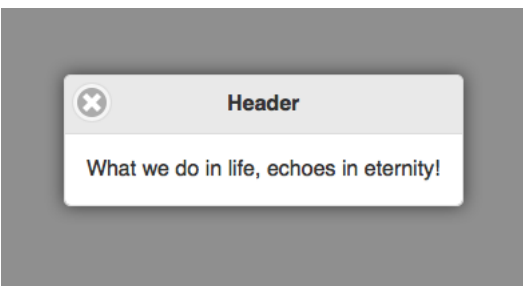


10.4.8 DataTable



Additional supported ajax events are swiperight, swiperight, tap and taphold.

10.4.9 Dialog



10.4.10 FileUpload

Browse... No file selected.

10.4.11 Growl



Name: Validation Error: Value is required.
Name: Validation Error: Value is required.

10.4.12 InputText

Q Search text

10.4.13 InputTextarea

10.4.14 Link

10.4.15 Menu

| | |
|--------|---|
| Sports | |
| ESPN | ➤ |
| NBA | ➤ |
| Search | |
| Google | ➤ |
| Bing | ➤ |

10.4.16 Panel

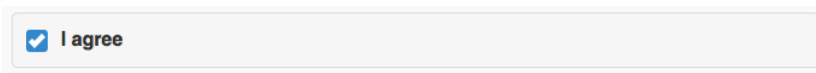
Godfather Part II ⊖

Francis Ford Coppola's legendary continuation and sequel to his landmark 1972 film, *The Godfather*, parallels the young Vito Corleone's rise with his son Michael's spiritual fall, deepening *The Godfather's* depiction of the dark side of the American dream. In the early 1900s, the child Vito flees his Sicilian village for America after the local Mafia kills his family. Vito struggles to make a living, legally or illegally, for his wife and growing brood in Little Italy, killing the local Black Hand Fanucci after he demands his customary cut of the tyro's business. With Fanucci gone, Vito's communal stature grows.

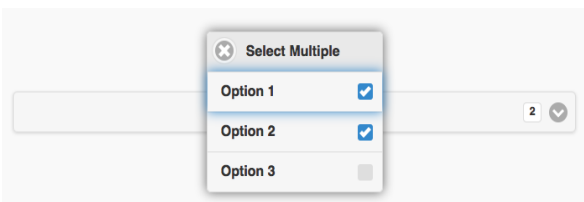
10.4.17 PanelGrid



10.4.17 SelectBooleanCheckbox



10.4.18 SelectCheckboxMenu



10.4.18 SelectManyButton



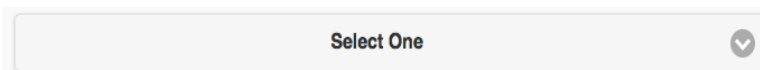
10.4.19 SelectManyCheckbox



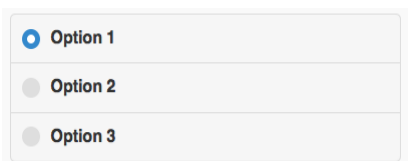
10.4.20 SelectOneButton



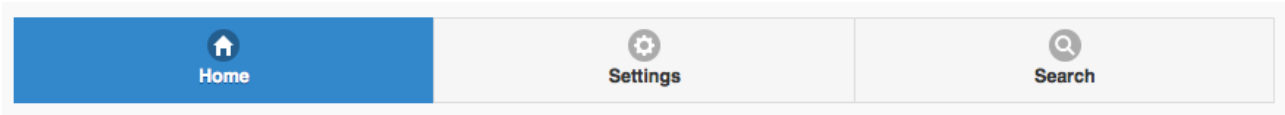
10.4.21 SelectOneMenu



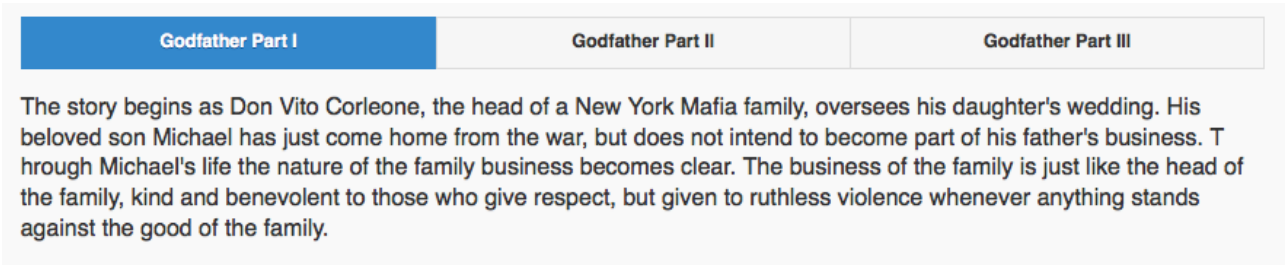
10.4.22 SelectOneRadio



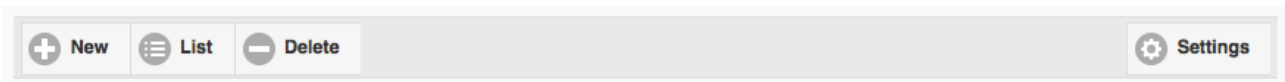
10.4.23 TabMenu



10.4.24 TabView



10.4.25 Toolbar



10.5 Themes

Mobile theming is similar to the core theming documented at chapter 8. Main difference is the swatch concept of mobile themes where one theme can contain multiple swatches. Default theme has two swatches **a** and **b**. A swatch can be applied using swatch attribute when available.

```
<pm:header title="Header" swatch="b"></pm:header>
```

Custom Theme

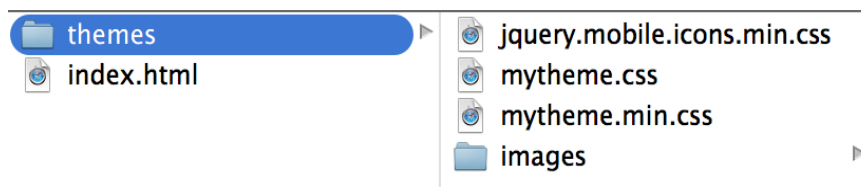
There is a mobile themeroller application to create a custom theme.

```
http://themeroller.jquerymobile.com
```

After creating the theme and downloading it as a zip file, a jar file has to be created to install the theme with the same folder structure as a desktop theme.

```
-jar
  - META-INF
    - resources
      - primefaces-mytheme
        - theme.css
        - images
```

1) The theme package downloaded from ThemeRoller will have a *themename.css* file and images folder. Extract the contents of the package and rename *themename.css* to *theme.css*.



2) Image references in your *theme.css* must also be converted to an expression that JSF resource loading can understand, example would be;

```
url("images/ui-bg_highlight-hard_100_f9f9f9_1x100.png")
```

should be;

```
url("#{resource['primefaces-mytheme:images/ui-bg_highlight-hard_100_f9f9f9_1x100.png']}")
```

Once the jar of your theme is in classpath, you can enable the theme by the following configuration.

```
<context-param>
  <param-name>primefaces.mobile.THEME</param-name>
  <param-value>mytheme</param-value>
</context-param>
```

param-value can be an EL expression as well to implement dynamic theming.

10.6 Framework

In addition to the UI components, PFM provides seamless integration with jQuery Mobile.

10.6.1 Ajax Updates

Plain jQuery Mobile UI elements use progressive enhancement approach that runs once on page load, this breaks JSF ajax updates since the updated parts cannot be enhanced again. PFM takes care of this problem under the hood.

As an example, the plain jquery mobile datalist and inputtext will lose all styling and functionality when updated with standard ajax commandbutton whereas PFM commandButton will properly update the datalist and inputtext.

```
<h:commandButton value="Standard">
  <f:ajax render="panel1" />
</h:commandButton>

<p:commandButton value="PFM" update="panel2" icon="ui-icon-refresh"/>

<h:panelGroup id="panel1">
  <ul data-role="listview" data-inset="true">
    <li><a href="#">Item 1</a></li>
    <li><a href="#">Item 2</a></li>
    <li><a href="#">Item 3</a></li>
  </ul>

  <h:inputText />
</h:panelGroup>

<p:outputPanel id="panel2">
  <p:menu styleClass="ui-listview-inset ui-corner-all">
    <p:menuitem value="Item1" url="#" />
    <p:menuitem value="Item2" url="#" />
    <p:menuitem value="Item3" url="#" />
  </p:menu>

  <p:inputText />
</p:outputPanel>
```

10.6.2 Pass Through Elements

jQM is data attribute driven, thanks to JSF 2.2's dynamic attributes support, PrimeFaces Components can have mobile specific options easily. Example below adds inset setting to a datalist.

```
<p:dataList value="#{ringBean.players}" var="player" pt:data-inset="true">
  //content
</p:dataList>
```

Note that pt is the standard taglib; *xmlns:pt="http://xmlns.jcp.org/jsf/passthrough"*. For the full list of available data attributes, consult the jQuery Mobile documentation.

10.6.3 Lazy Pages

For a mobile device with bandwidth concerns, loading all the pages in same xhtml at once in an eager fashion is not optimal and might cause performance issues if the page size is big. PFM supports lazy loading pages where a page content is not rendered at first but loaded with ajax just before accessed for the first time. Lazy loading is disabled and activated by setting *lazy* option on page component.

```
<!DOCTYPE html>
<html xmlns="http://www.w3.org/1999/xhtml"
      xmlns:h="http://java.sun.com/jsf/html"
      xmlns:f="http://java.sun.com/jsf/core"
      xmlns:p="http://primefaces.org/ui"
      xmlns:pm="http://primefaces.org/mobile">
  <f:view renderKitId="PRIMEFACES_MOBILE" />
  <h:head></h:head>

  <h:body>
    <pm:page id="main">
      <pm:header title="Main Page"></pm:header>
      <pm:content>
        <p:link outcome="pm:second" value="Go" />
      </pm:content>
    </pm:page>
    <pm:page id="second" lazy="true">
      <pm:header title="Second Page"></pm:header>
      <pm:content>
        //Lazy loaded content
      </pm:content>
    </pm:page>
  </h:body>
</html>
```

At first page load, second page contents are not available on page, clicking the link first makes an ajax request to fetch the contents, create the UI and then finally navigate to it.

10.6.4 Touch Events

Touch events like swipe are enabled in some components. In following, items in the list can be removed by *swipeleft* or *swiperight* and detail is displayed with *taphold*.

```
<h:form id="form">
  <p:growl id="msgs" showDetail="true" />

  <p:dataList value="#{tableBean.carsSmall}" var="car" pt:data-inset="true">
    <p:ajax event="swipeleft" listener="#{tableBean.swipeCar}"
      update=":form:msgs @this"/>
    <p:ajax event="swiperight" listener="#{tableBean.swipeCar}"
      update=":form:msgs @this"/>
    <p:ajax event="taphold" listener="#{tableBean.onRowSelect}"
      update=":form:msgs"/>
    <h:outputText value="#{car.manufacturer} - #{car.color}" />
  </p:dataList>
</h:form>
```

```
public void onRowSelect(SelectEvent event) {
    FacesMessage msg = new FacesMessage("Car Selected",
        ((Car) event.getObject()).getModel());

    FacesContext.getCurrentInstance().addMessage(null, msg);
}

public void swipeCar(SwipeEvent event) {
    Car car = (Car) event.getData();
    carsSmall.remove(car);
    FacesContext.getCurrentInstance().addMessage(null,
        new FacesMessage(FacesMessage.SEVERITY_INFO,
            "Car Swiped", "Removed: " + car.getModel()));
}
```

Sections 10.4 and 10.5 contains supported mobile events for a component when available.

11. Misc

11.1 RequestContext

RequestContext is a simple utility that provides useful goodies such as adding parameters to ajax callback functions. RequestContext is available in both ajax and non-ajax requests.

RequestContext can be obtained similarly to the FacesContext.

```
RequestContext requestContext = RequestContext.getCurrentInstance();
```

RequestContext API

| Method | Description |
|---------------------------------------------|----------------------------------------------------------------------------|
| isAjaxRequest() | Returns a boolean value if current request is a PrimeFaces ajax request. |
| addCallbackParam(String name, Object value) | Adds parameters to ajax callbacks like onComplete. |
| update(String clientId); | Specifies component(s) to update at runtime. |
| execute(String script) | Executes script after ajax request completes or on page load. |
| scrollTo(String clientId) | Scrolls to the component with given clientId after ajax request completes. |

Callback Parameters

There may be cases where you need values from backing beans in ajax callbacks. Callback parameters are serialized to JSON and provided as an argument in ajax callbacks for this.

```
<p:commandButton actionListener="#{bean.validate}"
  onComplete="handleComplete(xhr, status, args)" />
```

```
public void validate() {
  //isValid = calculate isValid
  RequestContext requestContext = RequestContext.getCurrentInstance();
  requestContext.addCallbackParam("isValid", true or false);
}
```

isValid parameter will be available in handleComplete callback as;

```
<script type="text/javascript">
  function handleComplete(xhr, status, args) {
    var isValid = args.isValid;
  }
</script>
```

You can add as many callback parameters as you want with addCallbackParam API. Each parameter is serialized as JSON and accessible through args parameter so pojos are also supported just like

primitive values. Following example sends a pojo called *User* that has properties like *firstname* and *lastname* to the client in addition to *isValid* boolean value.

```
public void validate() {
    //isValid = calculate isValid
    RequestContext requestContext = RequestContext.getCurrentInstance();
    requestContext.addCallbackParam("isValid", true or false);
    requestContext.addCallbackParam("user", user);
}
```

```
<script type="text/javascript">
    function handleComplete(xhr, status, args) {
        var firstname = args.user.firstname;
        var lastname = args.user.lastname;
    }
</script>
```

By default *validationFailed* callback parameter is added implicitly if validation fails.

Runtime Updates

Conditional UI update is quite common where different parts of the page need to be updated based on a dynamic condition. In this case, it is not efficient to use declarative update and defined all update areas since this will cause unnecessary updates. There may be cases where you need to define which component(s) to update at runtime rather than specifying it declaratively. *update* method is added to handle this case. In example below, button *actionListener* decides which part of the page to update on-the-fly.

```
<p:commandButton value="Save" actionListener="#{bean.save}" />
<p:panel id="panel"> ... </p:panel>
<p:dataTable id="table"> ... </p:panel>
```

```
public void save() {
    //boolean outcome = ...
    RequestContext requestContext = RequestContext.getCurrentInstance();

    if(outcome)
        requestContext.update("panel");
    else
        requestContext.update("table");
}
```

When the save button is clicked, depending on the outcome, you can either configure the datatable or the panel to be updated with ajax response.

Execute Javascript

RequestContext provides a way to execute javascript when the ajax request completes, this approach is easier compared to passing callback params and execute conditional javascript. Example below hides the dialog when ajax request completes;

```
public void save() {  
    RequestContext requestContext = RequestContext.getCurrentInstance();  
  
    requestContext.execute("dialog.hide()");  
}
```

11.2 EL Functions

PrimeFaces provides built-in EL extensions that are helpers to common use cases.

Common Functions

| Function | Description |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| component('id') | Returns clientId of the component with provided server id parameter. This function is useful if you need to work with javascript. |
| widgetVar('id') | Provides the widgetVar of a component in PF("") format. |

Component

```
<h:form id="form1">
  <h:inputText id="name" />
</h:form>
//#{p:component('name')} returns 'form1:name'
```

WidgetVar

```
<p:dialog id="dlg">
  //contents
</p:dialog>
<p:commandButton type="button" value="Show" onclick="#{p:widgetVar('dlg')}.show()" />
```

Page Authorization

Authorization function use HttpServletRequest API for the backend information.

| Function | Description |
|----------------------------|---------------------------------------------------------------|
| ifGranted(String role) | Returns true if user has the given role, else false. |
| ifAllGranted(String roles) | Returns true if user has all of the given roles, else false. |
| ifAnyGranted(String roles) | Returns true if user has any of the given roles, else false. |
| ifNotGranted(String roles) | Returns true if user has none of the given roles, else false. |
| remoteUser() | Returns the name of the logged in user. |
| userPrincipal() | Returns the principal instance of the logged in user. |

```
<p:commandButton rendered="#{p:ifGranted('ROLE_ADMIN')}" />
<h:inputText disabled="#{p:ifGranted('ROLE_GUEST')}" />
<p:inputMask rendered="#{p:ifAllGranted('ROLE_EDITOR, ROLE_READER')}" />
```

11.3 Exception Handler

PrimeFaces provides a built-in exception handler to take care of exceptions in ajax and non-ajax requests easily.

Configuration

ExceptionHandler and an ELResolver configured is required in faces configuration file.

```
<application>
  <el-resolver>
    org.primefaces.application.exceptionhandler.PrimeExceptionHandlerELResolver
  </el-resolver>
</application>

<factory>
  <exception-handler-factory>
    org.primefaces.application.exceptionhandler.PrimeExceptionHandlerFactory
  </exception-handler-factory>
</factory>
```

Error Pages

ExceptionHandler is integrated with error-page mechanism of Servlet API. At application startup, PrimeFaces parses the error pages and uses this information to find the appropriate page to redirect to based on the exception type. Here is an example web.xml configuration with a generic page for exceptions and a special page for ViewExpiredException type.

```
<?xml version="1.0" encoding="UTF-8"?>
<web-app version="2.5"
  xmlns="http://java.sun.com/xml/ns/javaee"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd" >

  <!-- Other application configuration -->

  <error-page>
    <exception-type>java.lang.Throwable</exception-type>
    <location>/ui/error/error.jsf</location>
  </error-page>
  <error-page>
    <exception-type>javax.faces.application.ViewExpiredException</exception-type>
    <location>/ui/error/viewExpired.jsf</location>
  </error-page>

</web-app>
```

Exception Information

In the error page, information about the exception is provided via the `pfExceptionHandler` EL keyword. Here is the list of exposed properties.

- `exception`: Throwable instance.
- `type`: Type of the exception.
- `message`: Exception message:
- `stackTrace`: An array of `java.lang.StackTraceElement` instances.
- `formattedStackTrace`: Stack trace as presentable string.
- `timestamp`: Timestamp as date.
- `formattedTimestamp`: Timestamp as presentable string.

In error page, exception metadata is accessed using EL;

```
<h:outputText value="Message:#{pfExceptionHandler.message}" />
<h:outputText value="#{pfExceptionHandler.formattedStackTrace}" escape="false" />
```

Ajax Exception Handler Component

A specialized exception handler component provides a way to execute callbacks on client side, update other components on the same page. This is quite useful in case you don't want to create a separate error page. Following example shows the exception in a dialog on the same page.

```
<p:ajaxExceptionHandler type="javax.faces.application.ViewExpiredException"
    update="exceptionDialog" onexception="PF('exceptionDialog').show();" />

<p:dialog id="exceptionDialog" header="Exception: #{pfExceptionHandler.type}
occured!" widgetVar="exceptionDialog" height="500px">
    Message: #{pfExceptionHandler.message} <br/>
    StackTrace: <h:outputText value="#{pfExceptionHandler.formattedStackTrace}"
        escape="false" />
    <p:button onclick="document.location.href = document.location.href;"
        value="Reload!"/>
</p:dialog>
```

Ideal location for `p:ajaxExceptionHandler` component is the facelets template so that it gets included in every page. Refer to component documentation of `p:ajaxExceptionHandler` for the available attributes.

Render Response Exceptions

To support exception handling in the `RENDER_RESPONSE` phase, it's required to set the `javax.faces.FACELETS_BUFFER_SIZE` parameter. Otherwise you will probably see a `ServletException` with "Response already committed" message.

11.4 BeanValidation Transformation

Since JavaEE 6, validation metadata is already available for many components via the value reference and BeanValidation (e.g. `@NotNull`, `@Size`). The JSF Implementations use this information for server side validation and PrimeFaces enhances this feature with client side validation framework.

PrimeFaces makes use of these metadata by transforming them to component and html attributes. For example sometimes it's required to manually maintain the `required` or `maxlength` attribute for input components. The `required` attribute also controls the behavior of `p:outputLabel` to show or hide the required indicator (*) whereas the `maxlength` attribute is used to limit the characters on input fields. BeanValidation transformation features enables avoiding manually maintaining these attributes anymore by implicitly handling them behind the scenes.

Configuration

To start with, transformation should be enabled.

```
<context-param>;
  <param-name>primefaces.TRANSFORM_METADATA</param-name>
  <param-value>true</param-value>
</context-param>
```

Usage

Define constraints at bean level.

```
@NotNull
@Max(30)
private String firstname;
```

Component at view does not have any constraints;

```
<p:inputText value="#{bean.firstname}" />
```

Final output has html `maxlength` attribute generated from the `@Max` annotation, also the component instance has `required` enabled.

```
<input type="text" maxlength="30" ... />
```

11.5 PrimeFaces Locales

Components may require translations and other settings based on different locales. This is handled with a client side api called PrimeFaces Locales. A client side locale is basically a javascript object with various settings, en_US is the default locale provided out of the box. In case you need to support another locale, settings should be extended with the new information.

A wiki page is available for user contributed settings, the list is community driven and a good starting point although it might be incomplete.

<https://code.google.com/p/primefaces/wiki/PrimeFacesLocales>

Default Locale

Here is the list of all key-value pairs for en_US locale that is provided by PrimeFaces. DateTime related properties are utilized by components such as calendar and schedule. If you are using Client Side Validation, messages property is used as the bundle for the locale.

```
{
closeText: 'Close',
prevText: 'Previous',
nextText: 'Next',
monthNames: ['January', 'February', 'March', 'April', 'May', 'June', 'July', 'August', 'September',
'October', 'November', 'December' ],
monthNamesShort: ['Jan', 'Feb', 'Mar', 'Apr', 'May', 'Jun', 'Jul', 'Aug', 'Sep', 'Oct', 'Nov', 'Dec' ],
dayNames: ['Sunday', 'Monday', 'Tuesday', 'Wednesday', 'Thursday', 'Friday', 'Saturday'],
dayNamesShort: ['Sun', 'Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat'],
dayNamesMin: ['S', 'M', 'T', 'W', 'T', 'F', 'S'],
weekHeader: 'Week',
firstDay: 0,
isRTL: false,
showMonthAfterYear: false,
yearSuffix:" ",
timeOnlyTitle: 'Only Time',
timeText: 'Time',
hourText: 'Time',
minuteText: 'Minute',
secondText: 'Second',
currentText: 'Current Date',
ampm: false,
month: 'Month',
week: 'week',
day: 'Day',
allDayText: 'All Day',
messages: {
    'javax.faces.component.UIInput.REQUIRED': '{0}: Validation Error: Value is required.',
    'javax.faces.converter.IntegerConverter.INTEGER': '{2}: \'{0}\' must be a number
consisting of one or more digits.',
    'javax.faces.converter.IntegerConverter.INTEGER_detail': '{2}: \'{0}\' must be a number
between -2147483648 and 2147483647 Example: {1}',

```

'javax.faces.converter.DoubleConverter.DOUBLE': '{2}: \'{0}\'' must be a number consisting of one or more digits.',

'javax.faces.converter.DoubleConverter.DOUBLE_detail': '{2}: \'{0}\'' must be a number between 4.9E-324 and 1.7976931348623157E308 Example: {1}',

'javax.faces.converter.BigDecimalConverter.DECIMAL': '{2}: \'{0}\'' must be a signed decimal number.',

'javax.faces.converter.BigDecimalConverter.DECIMAL_detail': '{2}: \'{0}\'' must be a signed decimal number consisting of zero or more digits, that may be followed by a decimal point and fraction. Example: {1}',

'javax.faces.converter.BigIntegerConverter.BIGINTEGER': '{2}: \'{0}\'' must be a number consisting of one or more digits.',

'javax.faces.converter.BigIntegerConverter.BIGINTEGER_detail': '{2}: \'{0}\'' must be a number consisting of one or more digits. Example: {1}',

'javax.faces.converter.ByteConverter.BYTE': '{2}: \'{0}\'' must be a number between 0 and 255.',

'javax.faces.converter.ByteConverter.BYTE_detail': '{2}: \'{0}\'' must be a number between 0 and 255. Example: {1}',

'javax.faces.converter.CharacterConverter.CHARACTER': '{1}: \'{0}\'' must be a valid character.',

'javax.faces.converter.CharacterConverter.CHARACTER_detail': '{1}: \'{0}\'' must be a valid ASCII character.',

'javax.faces.converter.ShortConverter.SHORT': '{2}: \'{0}\'' must be a number consisting of one or more digits.',

'javax.faces.converter.ShortConverter.SHORT_detail': '{2}: \'{0}\'' must be a number between -32768 and 32767 Example: {1}',

'javax.faces.converter.BooleanConverter.BOOLEAN': '{1}: \'{0}\'' must be '\true\' or '\false\'',

'javax.faces.converter.BooleanConverter.BOOLEAN_detail': '{1}: \'{0}\'' must be '\true\' or '\false\''. Any value other than '\true\' will evaluate to '\false\'',

'javax.faces.validator.LongRangeValidator.MAXIMUM': '{1}: Validation Error: Value is greater than allowable maximum of \'{0}\''',

'javax.faces.validator.LongRangeValidator.MINIMUM': '{1}: Validation Error: Value is less than allowable minimum of \'{0}\''',

'javax.faces.validator.LongRangeValidator.NOT_IN_RANGE': '{2}: Validation Error: Specified attribute is not between the expected values of {0} and {1}.',

'javax.faces.validator.LongRangeValidator.TYPE={0}': 'Validation Error: Value is not of the correct type.',

'javax.faces.validator.DoubleRangeValidator.MAXIMUM': '{1}: Validation Error: Value is greater than allowable maximum of \'{0}\''',

'javax.faces.validator.DoubleRangeValidator.MINIMUM': '{1}: Validation Error: Value is less than allowable minimum of \'{0}\''',

'javax.faces.validator.DoubleRangeValidator.NOT_IN_RANGE': '{2}: Validation Error: Specified attribute is not between the expected values of {0} and {1}.',

'javax.faces.validator.DoubleRangeValidator.TYPE={0}': 'Validation Error: Value is not of the correct type',

'javax.faces.converter.FloatConverter.FLOAT': '{2}: \'{0}\'' must be a number consisting of one or more digits.',

'javax.faces.converter.FloatConverter.FLOAT_detail': '{2}: \'{0}\'' must be a number between 1.4E-45 and 3.4028235E38 Example: {1}',

'javax.faces.converter.DateTimeConverter.DATE': '{2}: \'{0}\'' could not be understood as a date.',


```

    'javax.faces.converter.DateTimeConverter.DATE_detail': '{2}: \'{0}\'' could not be
understood as a date. Example: {1}',
    'javax.faces.converter.DateTimeConverter.TIME': '{2}: \'{0}\'' could not be understood as a
time.',
    'javax.faces.converter.DateTimeConverter.TIME_detail': '{2}: \'{0}\'' could not be
understood as a time. Example: {1}',
    'javax.faces.converter.DateTimeConverter.DATETIME': '{2}: \'{0}\'' could not be
understood as a date and time.',
    'javax.faces.converter.DateTimeConverter.DATETIME_detail': '{2}: \'{0}\'' could not be
understood as a date and time. Example: {1}',
    'javax.faces.converter.DateTimeConverter.PATTERN_TYPE': '{1}: A \pattern\ or \type\
attribute must be specified to convert the value \'{0}\'',
    'javax.faces.converter.NumberConverter.CURRENCY': '{2}: \'{0}\'' could not be
understood as a currency value.',
    'javax.faces.converter.NumberConverter.CURRENCY_detail': '{2}: \'{0}\'' could not be
understood as a currency value. Example: {1}',
    'javax.faces.converter.NumberConverter.PERCENT': '{2}: \'{0}\'' could not be understood
as a percentage.',
    'javax.faces.converter.NumberConverter.PERCENT_detail': '{2}: \'{0}\'' could not be
understood as a percentage. Example: {1}',
    'javax.faces.converter.NumberConverter.NUMBER': '{2}: \'{0}\'' could not be understood
as a date.',
    'javax.faces.converter.NumberConverter.NUMBER_detail': '{2}: \'{0}\'' is not a number.
Example: {1}',
    'javax.faces.converter.NumberConverter.PATTERN': '{2}: \'{0}\'' is not a number pattern.',
    'javax.faces.converter.NumberConverter.PATTERN_detail': '{2}: \'{0}\'' is not a number
pattern. Example: {1}',
    'javax.faces.validator.LengthValidator.MINIMUM': '{1}: Validation Error: Length is less
than allowable minimum of \'{0}\'',
    'javax.faces.validator.LengthValidator.MAXIMUM': '{1}: Validation Error: Length is
greater than allowable maximum of \'{0}\'',
    'javax.faces.validator.RegexValidator.PATTERN_NOT_SET': 'Regex pattern must be set.',
    'javax.faces.validator.RegexValidator.PATTERN_NOT_SET_detail': 'Regex pattern must
be set to non-empty value.',
    'javax.faces.validator.RegexValidator.NOT_MATCHED': 'Regex Pattern not matched',
    'javax.faces.validator.RegexValidator.NOT_MATCHED_detail': 'Regex pattern of \'{0}\''
not matched',
    'javax.faces.validator.RegexValidator.MATCH_EXCEPTION': 'Error in regular
expression.',
    'javax.faces.validator.RegexValidator.MATCH_EXCEPTION_detail': 'Error in regular
expression, \'{0}\''
}
}

```

Usage

To add another locale to the API, first create the locale object first with settings and assign it as a property of PrimeFaces.locales javascript object such as;

```
PrimeFaces.locales['de'] = { //settings }
```

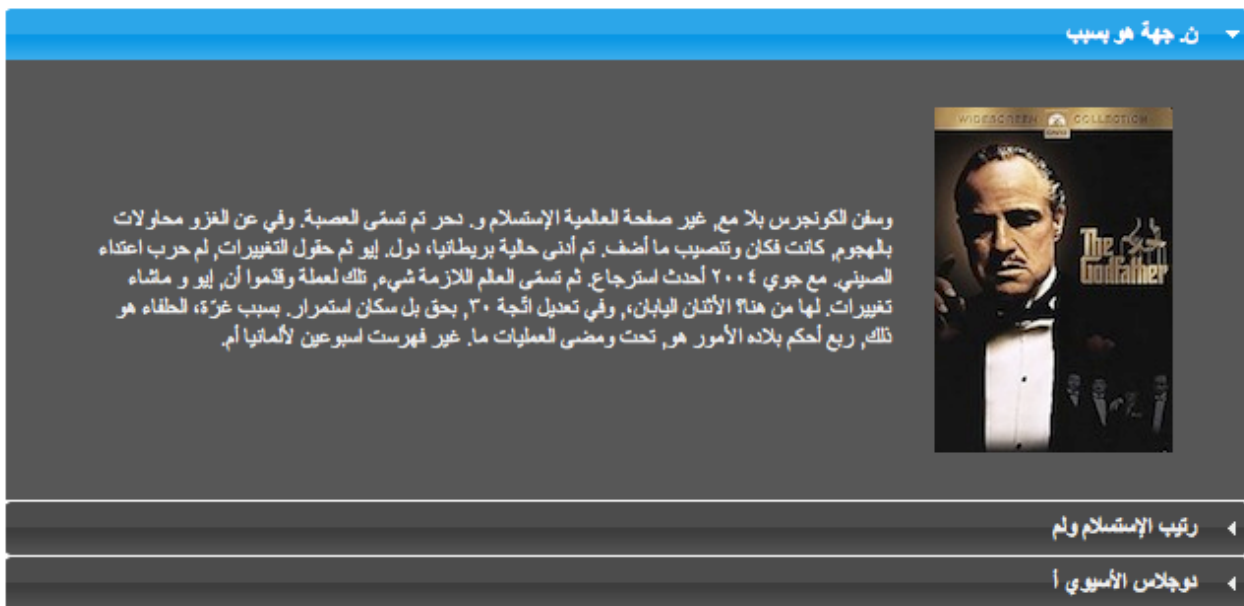
It is suggested to put this code in a javascript file and include the file into your pages.

11.6 Right to Left

Right-To-Left language support in short RTL is provided out of the box by a subset of PrimeFaces components. Any component equipped with *dir* attribute has the official support and there is also a global setting to switch to RTL mode globally.

Here is an example of an RTL AccordionPanel enabled via *dir* setting.

```
<p:accordionPanel dir="rtl">
  //tabs
</p:accordionPanel>
```



Global Configuration

Using *primefaces.DIR* global setting to rtl instructs PrimeFaces RTL aware components such as datatable, accordion, tabview, dialog, tree to render in RTL mode.

```
<context-param>
  <param-name>primefaces.DIR</param-name>
  <param-value>rtl</param-value>
</context-param>
```

Parameter value can also be an EL expression for dynamic values.

In upcoming PrimeFaces releases, more components will receive built-in RTL support. Until then if the component you use doesn't provide it, overriding css and javascript in your application would be the solution.

11.7 Responsive Design

There are three ingredients to make a responsive page with PrimeFaces.

Page Layout

Page layout typically consists of the menus, header, footer and the content section. A responsive page layout should optimize these sections according to the screen size. You may create your own layout with CSS, pick one from a responsive css framework or choose PrimeFaces Premium Layouts such as Sentinel, Spark, Modena, Rio and more.

Grid Framework

Grid framework is used to define container where you place the content and the components. A typical grid framework usually consists of columns with varying widths and since they are also responsive, containers adjust themselves according to the screen size. There are 3rd party grid frameworks you can use whereas PrimeFaces also provides Grid CSS as a solution.

Components

Components also must be flexible enough to use within a responsive layout, if a component has fixed width, it will not work well with a responsive page layout and grid framework as it does not adjust its dimensions based on its container. There are two important points in PrimeFaces components related to responsive design.

First is the fluid mode support for components where component gets 100% width meaning when used within a grid, it will take the width of the grid. Fluid usually effects the form components. To enable fluid mode, add *ui-fluid* to a container element.

```
<div class="ui-fluid">
  <p:panelGrid columns="2" layout="grid">
    <p:outputLabel for="input" value="Input"/>
    <p:inputText id="input"/>
  </p:panelGrid>
</div>
```

Second is the built-in responsive modes for complex components such Dialog, Charts, Carousel and PickList. These types of components get a responsive attribute, when enabled they hook-in to screen size change to optimize their content.

```
<p:dialog responsive="true"...
```

For a detailed example of a responsive page that uses all of the parts above, visit;

<http://www.primefaces.org/showcase/ui/misc/responsive.xhtml>

Source code is available at GitHub.

11.8 WAI-ARIA

WAI-ARIA (Web Accessibility Initiative – Accessible Rich Internet Applications) is a technical specification published by the World Wide Web Consortium (W3C) that specifies how to increase the accessibility of web pages, in particular, dynamic content and user interface components developed with Ajax, HTML, JavaScript and related technologies. – Wikipedia

ARIA compatibility is an important goal of PrimeFaces as a result keyboard support as well as screen reader support are available to many components. Many of these features are built-in and does not require any configuration to use them. However for screen readers, localized texts might be necessary so that component can read the aria labels and messages from a bundle. PrimeFaces provides English translations by default and you may use the following keys in your JSF message bundle to provide your own values.

- `primefaces.datatable.aria.FILTER_BY` = Filter by {0}
- `primefaces.paginator.aria.HEADER` = Pagination
- `primefaces.paginator.aria.FIRST_PAGE` = First Page
- `primefaces.paginator.aria.PREVIOUS_PAGE` = Previous Page
- `primefaces.paginator.aria.NEXT_PAGE` = Next Page
- `primefaces.paginator.aria.LAST_PAGE` = Last Page
- `primefaces.paginator.aria.ROWS_PER_PAGE` = Rows Per Page
- `primefaces.datatable.aria.HEADER_CHECKBOX_ALL` = Select All
- `primefaces.dialog.aria.CLOSE` = Close
- `primefaces.rowtoggler.aria.ROW_TOGGLER` = Toggle Row
- `primefaces.datatable.SORT_LABEL` = Sort
- `primefaces.datatable.SORT_ASC` = Ascending
- `primefaces.datatable.SORT_DESC` = Descending

12. Portlets

PrimeFaces supports portlet environments based on JSF 2 and Portlet 2 APIs. A portlet bridge is necessary to run a JSF application as a portlet and we suggest LiferayFaces bridge as the implementation. Both teams work together time to time to make sure PrimeFaces runs well on liferay. A kickstart example with necessary configuration is available at LiferayFaces Demos;

<http://www.liferay.com/community/liferay-projects/liferay-faces/demos>

The screenshot shows a web browser window titled "PrimeFaces3" displaying a "Job Application" portlet. The portlet has a header with a clipboard icon and the LIFERAY logo. The form includes the following fields and components:

- First Name:** Text input field.
- Date of Birth:** Text input field with a calendar icon, showing "01/01/1970".
- Last Name:** Text input field.
- City:** Text input field.
- Email Address:** Text input field.
- State:** Dropdown menu with "-- Select --".
- Phone Number:** Text input field.
- ZIP Code:** Text input field with a help icon.
- Attachments:** Section with a table header "File Name Size" and an "Add Attachment" button.
- Comments:** Section with a "Show Comments" link.
- Buttons:** "Submit" and "Edit Preferences" buttons at the bottom.

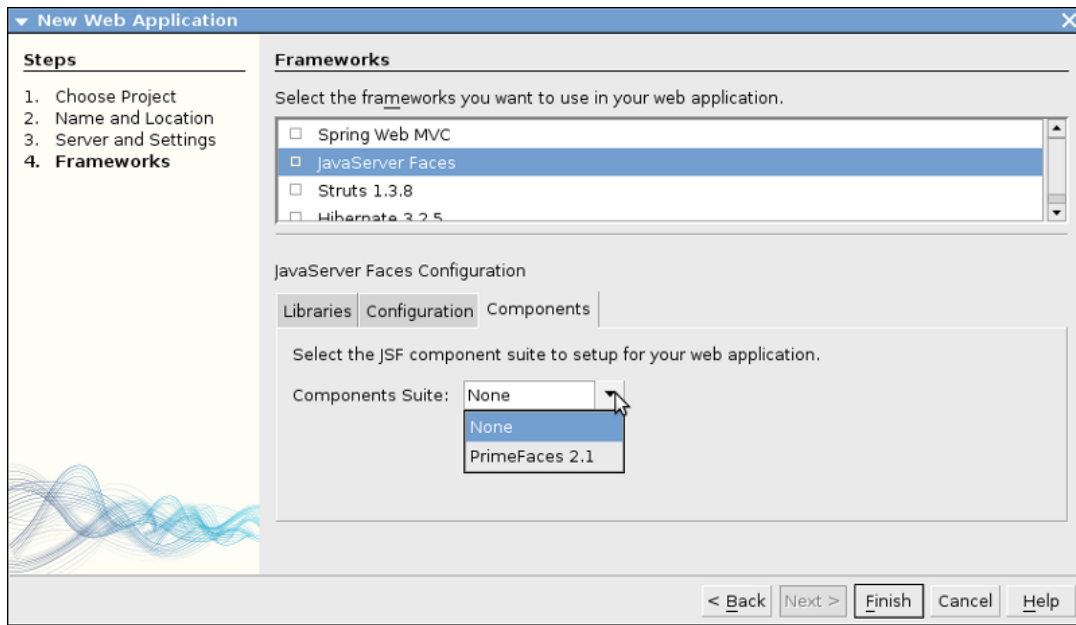
Demo contains a single "Job Application" portlet within the WAR that demonstrates several of the key features of JSF 2 and PrimeFaces;

- Uses the PrimeFaces `<p:calendar/>` tag for a popup date selector
- Uses the JSF 2 `<f:ajax />` tag on the postal (zip) code field in order to provide the ability to auto-fill fields via Ajax
- Uses the JSF 2 `<f:ajax />` tag on the show/hide comments links in order to show/hide the comments field via Ajax
- Model managed-bean is marked with the JSF 2 `@ViewScoped` annotation in order to support a rich UI with the `<f:ajax />` tag
- Uses the JSF 2 `<f:ajax />` tag to show navigation-rules executing without full page refreshes
- File upload capabilities via `<h:form enctype="multipart/form-data">`
- Managed-beans defined by marking POJOs with the JSF 2 `@ManagedBean` annotation
- Dependency injection of managed-beans done via the JSF 2 `@ManagedProperty` annotation
- Uses the PrimeFaces `p:fileUpload` tag for multi-file Ajax-based file upload
- Uses the PrimeFaces `p:dataTable` tag to list the uploaded files
- Uses the PrimeFaces `p:confirmDialog` tag to popup a yes/no dialog to verify file deletion

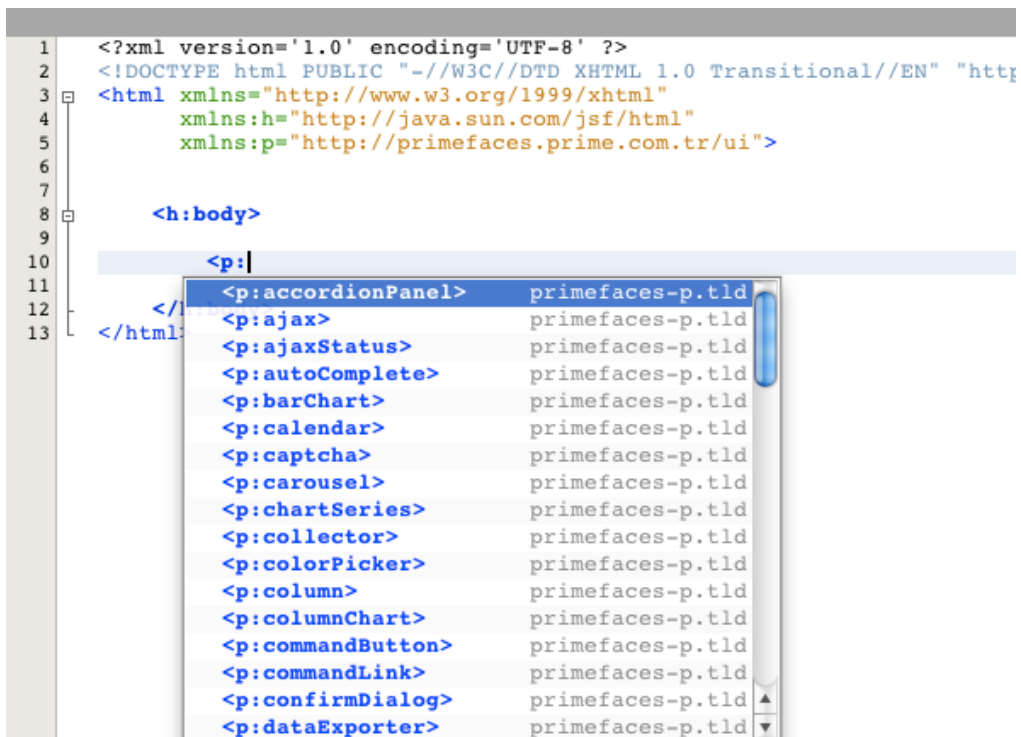
13. IDE Support

13.1 NetBeans

NetBeans 7.0+ bundles PrimeFaces, when creating a new project you can select PrimeFaces from components tab;



Code completion is supported by NetBeans 6.9+ ;



```

html
1  <?xml version='1.0' encoding='UTF-8' ?>
2  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "h
3  <html xmlns="http://www.w3.org/1999/xhtml"
4      xmlns:h="http://java.sun.com/jsf/html"
5      xmlns:p="http://primefaces.prime.com.tr/ui">
6
7
8  <h:body>
9
10 <p:accordionPanel |
11
12 </h:body>
13 </html>

```

| |
|-------------------|
| activeIndex |
| binding |
| id |
| multipleSelection |
| rendered |
| speed |
| style |
| styleClass |

PrimeFaces and NetBeans teams are in communication to discuss the next step of PrimeFaces integration in NetBeans at the time of writing.

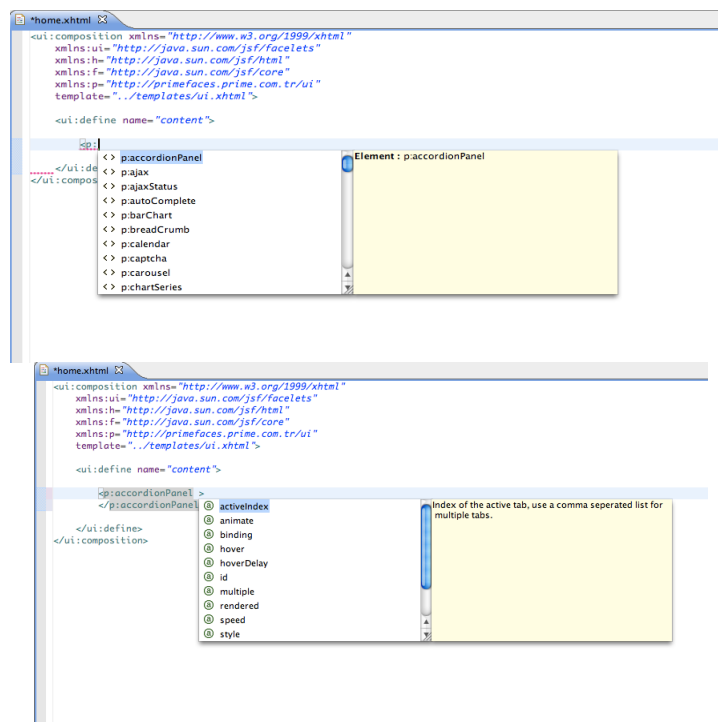
PrimeFaces CRUD Plugin

Starting with NetBeans 8, the IDE provides a built-in CRUD plugin for PrimeFaces out of the box.
www.youtube.com/watch?v=5aTFiNxzXF4

There is also another 3rd party plugin for NetBeans called PrimeFaces CRUD Generator.
<http://sourceforge.net/projects/nbpfcrudgen/>

13.2 Eclipse

Code completion works out of the box for Eclipse when JSF facet is enabled.



14. Project Resources

Documentation

This guide is the main resource for documentation, for additional documentation like apidocs, taglib docs, wiki and more please visit;

<http://www.primefaces.org/documentation>

Support Forum

PrimeFaces discussions take place at the support forum. Forum is public to everyone and registration is required to do a post.

<http://forum.primefaces.org>

Source Code

PrimeFaces source is at google code subversion repository.

<https://github.com/primefaces/primefaces>

Issue Tracker

PrimeFaces issue tracker uses google code's issue management system. Please use the forum before creating an issue instead.

<https://github.com/primefaces/primefaces/issues>

WIKI

PrimeFaces Wiki is a community driven additional documentation resource.

<https://github.com/primefaces/primefaces/wiki>

Showcase

Showcase is a great resource as a live documentation.

<http://www.primefaces.org/showcase>

Social Networks

You can follow PrimeFaces on twitter using [@primefaces](#) and join the [Facebook](#) group for news and more.

15. FAQ

1. Who develops PrimeFaces?

PrimeFaces is developed and maintained by PrimeTek, a software development company specialized in UI solutions.

2. How can I get support?

Support forum is the main area to ask for help, it's publicly available and free registration is required before posting. Please do not email the developers of PrimeFaces directly and use support forum instead.

3. Is Enterprise support available?

Yes, enterprise support is also available. Please visit support page on PrimeFaces website for more information.

<http://www.primefaces.org/support>

4. Where is the source for the example demo applications?

Source code of demo applications are in the GitHub repository of PrimeFaces at /showcase repository.

5. Some components like charts do not work in Safari or Chrome but there's no problem with Firefox.

The common reason is the response mimeType when using with PrimeFaces. You need to make sure responseType is "text/html". You can use the `<f:view contentType="text/html">` to enforce this.

6. What is the license of PrimeFaces?

PrimeFaces is free to use and licensed under Apache License V2, Elite versions are licensed under Elite License.

7. Can I use PrimeFaces in a commercial software?

Yes, Apache V2 License is a commercial friendly library. PrimeFaces does not bundle any third party software that conflicts with Apache. Same goes for Elite Releases for ELITE and PRO users.

8. Which browsers are supported by PrimeFaces?

IE 8-9-10-11, Safari, Firefox, Chrome and Opera.

THE END