



PrimeFaces: Overview, Installation, and Setup

Originals of slides and source code for examples: <http://www.coreservlets.com/JSF-Tutorial/primefaces/>

Also see the JSF 2 tutorial – <http://www.coreservlets.com/JSF-Tutorial/jsf2/>

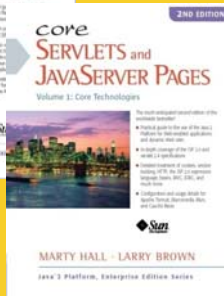
and customized JSF2 and PrimeFaces training courses – <http://courses.coreservlets.com/jsf-training.html>



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For live training on JSF 2, PrimeFaces, or other Java EE topics, email hall@coreservlets.com
Marty is also available for consulting and development support

Taught by the author of *Core Servlets and JSP*, this tutorial, and JSF 2.2 version of *Core JSF*. Available at public venues, or customized versions can be held on-site at your organization.

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Topics in This Section

- **Third-Party JSF component libraries**
- **Overview of PrimeFaces**
- **Installation and setup**
- **Simple examples**
 - With and without server behavior

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Third-Party JSF Component Libraries



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Component Libraries: Idea

- **Component libraries do**
 - Add rich GUI elements, for both input and output
 - Sliders, autocomplete textfields, dialog boxes, tabbed panels, color pickers, masked input fields, etc.
- **Component libraries do not**
 - Require you to use a particular Java server (e.g., JBoss)
 - Change the general way you write your Java code
 - Change the JSF flow of control
 - Change the overall structure of facelets pages
 - Prevent you from using *any* of the techniques covered in the earlier JSF 2 tutorial
 - <http://www.coreservlets.com/JSF-Tutorial/jsf2/>
 - Bottom line
 - They add GUI elements, but are not different frameworks

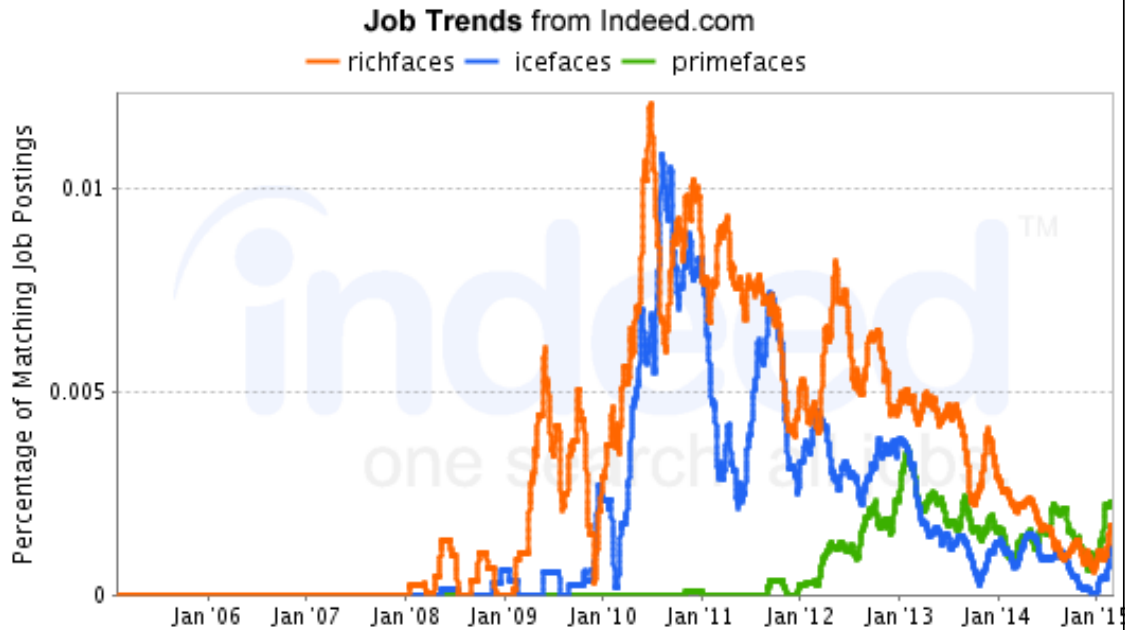
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Popular JSF 2 Component Libraries

- **PrimeFaces**
 - <http://primefaces.org/>
- **RichFaces**
 - <http://www.jboss.org/richfaces>
- **IceFaces**
 - <http://www.icesoft.org/>
- **Oracle ADF Faces**
 - <http://www.oracle.com/technetwork/developer-tools/adf/overview/index-092391.html>
- **OpenFaces**
 - <http://openfaces.org/>
- **Tomahawk**
 - <http://myfaces.apache.org/tomahawk/index.html>
- **Trinidad**
 - <http://myfaces.apache.org/trinidad/index.html>

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Usage Trends: Job Postings



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Usage Trends: Google Searches



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Overview of PrimeFaces

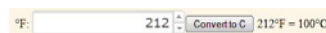
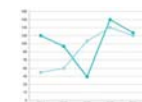
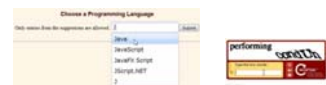


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General Features

- **Rich visual components**
 - Calendars, charts, sliders, image viewers, much more
 - Many are based on jQuery UI and jQuery plugins
- **Completely compliant with JSF 2**
 - Runs in any JSF 2 implementation
- **Free and open source**
 - Free for all apps, including commercial ones. Apache license.
- **Lightweight**
 - Very low overhead to adding PrimeFaces components to existing JSF 2 apps
- **Optional theming**
 - Rich skinning options, with interactive theme builder.
 - But can easily use components in existing JSF 2 app.



Types of Components

- **Input elements**
 - Popup calendar, slider, autocompleter, masked fields, etc.
- **Popup windows**
 - Dialog boxes, menus, Mac-like “Growl” notifications, etc
- **Grouping panels**
 - Accordion panel, tab panel, scroll panel, dashboard, etc.
- **Charts**
 - Bar charts, pie charts, line graphs, etc.
- **Image viewers**
 - Many types of image galleries and viewers
- **Skins (themes) and interactive skin builder**
- **Rich Ajax support**
 - Built into many components
- **Drag and drop API**

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Installation and Setup



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Basic Installation

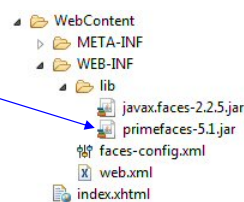
- **Most components**
 - Download JAR file
 - <http://www.primefaces.org/downloads.html>
 - **Already included in app that goes with this tutorial**
 - Put JAR file in WEB-INF/lib folder of your application
 - Same place all other JAR files go
 - Add PrimeFaces declaration to <html ...> start tag
 - <html ... xmlns:p="http://primefaces.org/ui">
 - Start using PrimeFaces tags. (It is really that easy!)
 - E.g., put <p:calendar/> inside any JSF 2 form
- **A few specialized components**
 - PDF exporter, Excel exporter, file upload, and Ajax push require some extra JAR files.
 - Well documented in User Manual

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Installation and Setup

- **Put JAR file in app**

Download from <http://www.primefaces.org/downloads.html>



If you download the sample app that goes with this tutorial, the PrimeFaces JAR file is already included.

- **Add PrimeFaces declaration**

```
<html xmlns="http://www.w3.org/1999/xhtml"
      xmlns:h="http://xmlns.jcp.org/jsf/html"
      xmlns:p="http://primefaces.org/ui">
```
- **Start using PrimeFaces components**
 - That's really all there is to it!

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Documentation

- **User's Guide**

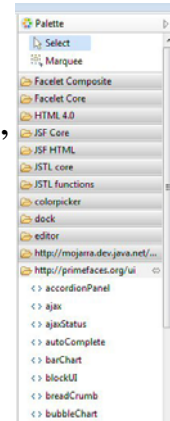
- <http://www.primefaces.org/documentation.html>
 - Moderately good by open source standards
- Download PDF of Guide to your local computer
 - This is only documentation most developers use
 - But main page above also has link to JavaDoc for underlying Java code, which is used once in a while

- **Eclipse code completion and palette**

- Automatic in projects that have PrimeFaces JAR file, as long as JSF project facet enabled
 - JSF facet described in earlier tutorial on JSF 2 setup

- **Showcase**

- <http://www.primefaces.org/showcase/>
 - Has easy-to-copy facelets and Java code samples for each example



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Simple Example: No Server Behavior



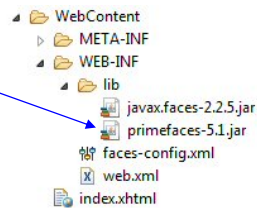
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Simple Example (No Server Behavior)

- Put JAR file in app

Downloaded from <http://www.primefaces.org/downloads.html>



- Added PrimeFaces declaration

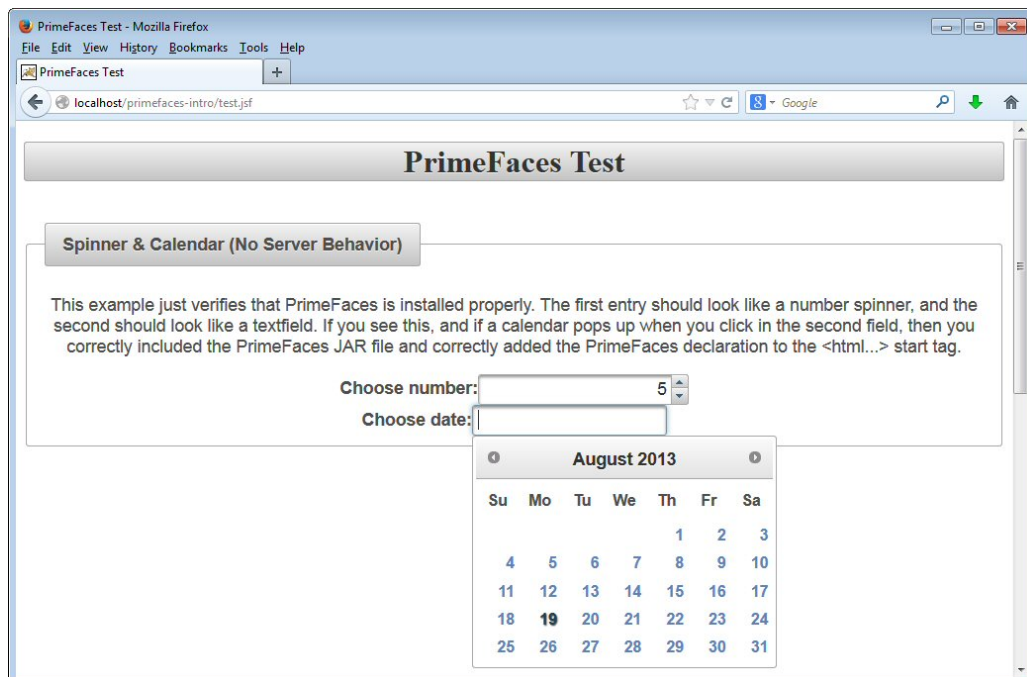
```
<html xmlns="http://www.w3.org/1999/xhtml"
      xmlns:h="http://xmlns.jcp.org/jsf/html"
      xmlns:p="http://primefaces.org/ui">
```

- Inserted PrimeFaces components

```
<h:form>
  <b>Choose number:</b> <p:spinner/><br/>
  <b>Choose date:</b> <p:calendar/>
</h:form>
```

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Results



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Simple Example: With Server Behavior



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Better but Still Simple Example (with Server Behavior)

- **Point**
 - PrimeFaces input components convert types automatically
 - p:spinner converts to double (or int if step is whole num)
 - p:calendar converts to Date
 - No user conversion needed
 - And no need for validatorMessage since neither one will permit the user to enter an illegal type

Bean

```
@ManagedBean
public class TestBean {
    private int number;
    private Date date;

    public int getNumber() {
        return(number);
    }
    public void setNumber(int number) {
        this.number = number;
    }
    public Date getDate() {
        return(date);
    }
    public void setDate(Date date) {
        this.date = date;
    }
    public String doAction() {
        return("show-test-data");
    }
}
```

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Input Form (test.xhtml)

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
    xmlns:h="http://xmlns.jcp.org/jsf/html"
    xmlns:p="http://primefaces.org/ui">
<h:head>...</h:head>
<h:body>
...
<h:form>
    <b>Choose number:</b> <p:spinner value="#{testBean.number}"/><br/>
    <b>Choose date:</b> <p:calendar value="#{testBean.date}"/><br/>
    <p:commandButton action="#{testBean.doAction}" ajax="false"
        value="Submit"/>
</h:form>
...
</h:body></html>
```

It works fine to use h:commandButton, but the advantage of p:commandButton is that the button picks up the fonts, sizes, and colors of the current theme. But, if you use p:commandButton, you have to use ajax="false" if you want it to behave just like h:commandButton. In general, it works fine to mix p:blah and h:blah elements in the same form, but only the p:blah elements will automatically follow the PrimeFaces theme.

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Results Page (show-test-data.xhtml)

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
  xmlns:h="http://xmlns.jcp.org/jsf/html">
<h:head><title>Test Data</title>
</h:head>
<h:body>
<h1 class="ui-widget-header ui-corner-all" align="center">
Test Data</h1>
<p/>
<ul>
  <li>Selected number: #{testBean.number}</li>
  <li>Selected date: #{testBean.date}</li>
</ul>
</h:body></html>
```

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Results

Spinner & Calendar (With Server Behavior)

This example shows some simple server-side behavior. In particular, it shows that the PrimeFaces input components often automatically convert types. So, in this case, the associated getter and setter of the spinner should be of type double, and the getter and setter for the calendar should be of type Date, and no user conversion is needed in either case. Also note that this example has no validation; see the later section on date and number input for a more realistic calendar example that validates the input.

Choose number:

Choose date:

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Test Data

- Selected number: 7.0
- Selected date: Wed Dec 25 00:00:00 EST 2013

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Wrap-Up



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Summary

- **Component libraries**
 - Add rich GUI elements for input or output
 - Normal JSF code and approaches still work
 - Extra GUI elements, not new framework!
- **Popular component libraries**
 - All of PrimeFaces, RichFaces, IceFaces, Tomahawk, and Oracle ADF Faces are widely used
 - But PrimeFaces is (arguably) the least intrusive and most widely used
- **Installation**
 - Drop in JAR file, add declaration to <html...>, go!



Questions?

More info:

<http://www.coreservlets.com/JSF-Tutorial/jsf2/> – JSF 2.2 tutorial

<http://www.coreservlets.com/JSF-Tutorial/primefaces/> – PrimeFaces tutorial

<http://courses.coreservlets.com/jsf-training.html> – Customized JSF and PrimeFaces training courses

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