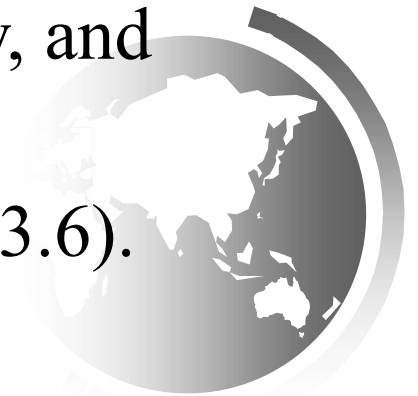


Chapter 33 JavaServer Face



Objectives

- ☞ To explain what JSF is (§33.1).
- ☞ To create a JSF page using NetBeans (§33.2).
- ☞ To create a JSF managed bean (§33.2).
- ☞ To use JSF expressions in a facelet (§33.2).
- ☞ To use JSF GUI components (§33.3).
- ☞ To obtain and process input from a form (§33.4).
- ☞ To track sessions in application, session, view, and request scope (§33.5).
- ☞ To validate input using the JSF validators (§33.6).
- ☞ To bind database with facelets (§33.7).



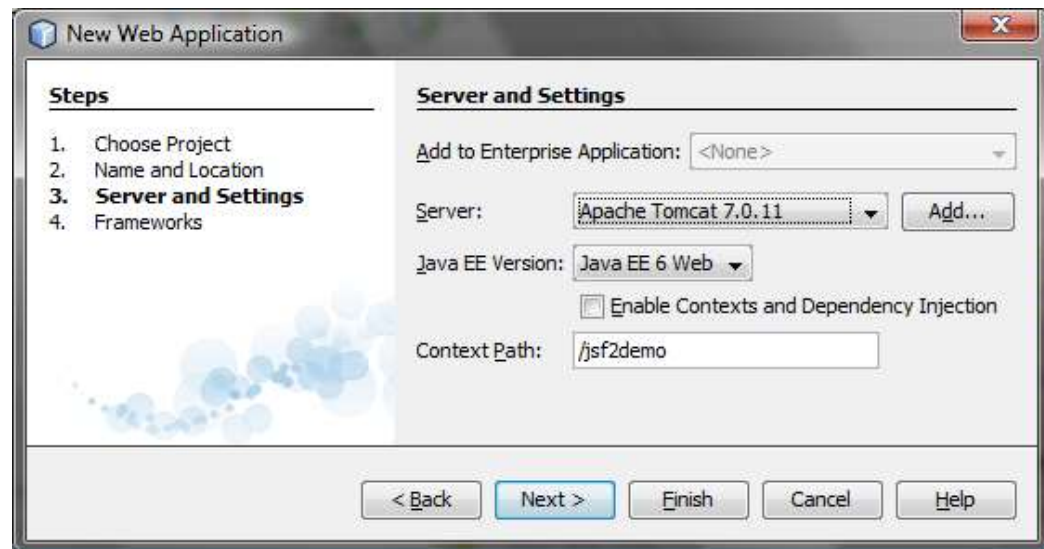
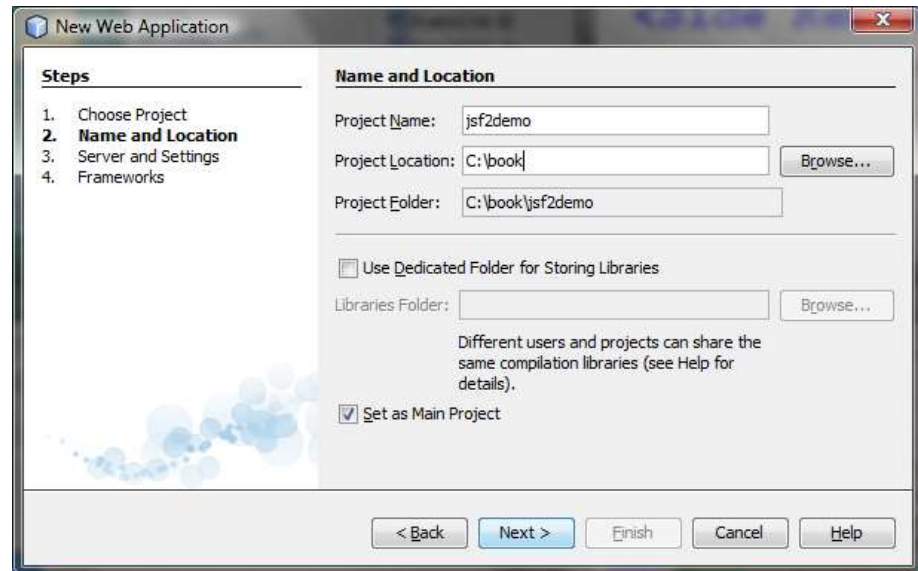
What is JSF?

JSF completely separates Web UI from Java code so the application developed using JSF is easy to debug and maintain.

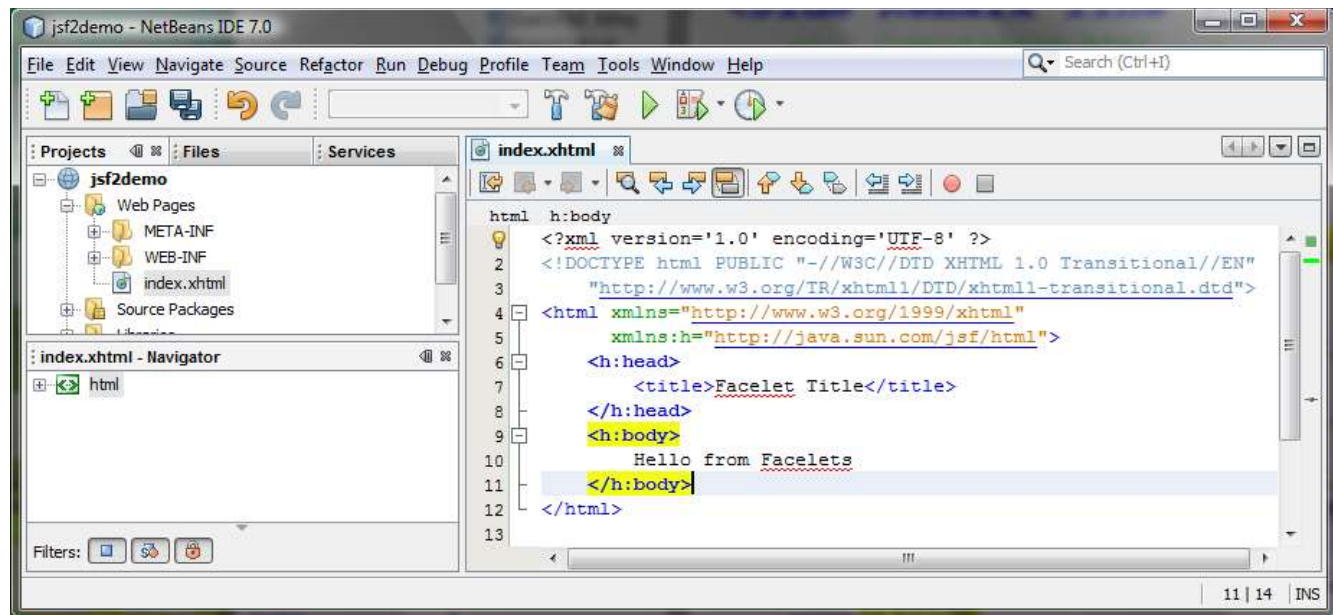
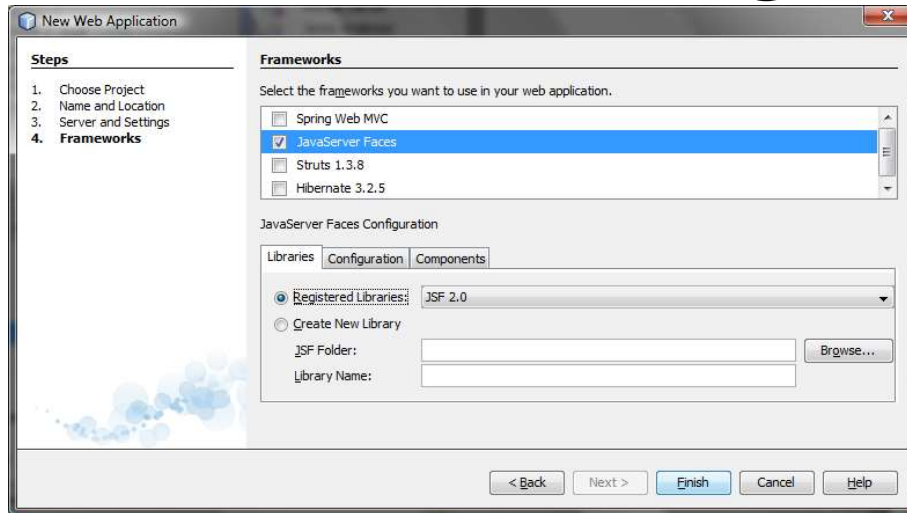


Creating a JSF Project

Create a Web project with
JavaServer Faces.



Creating a JSF Project

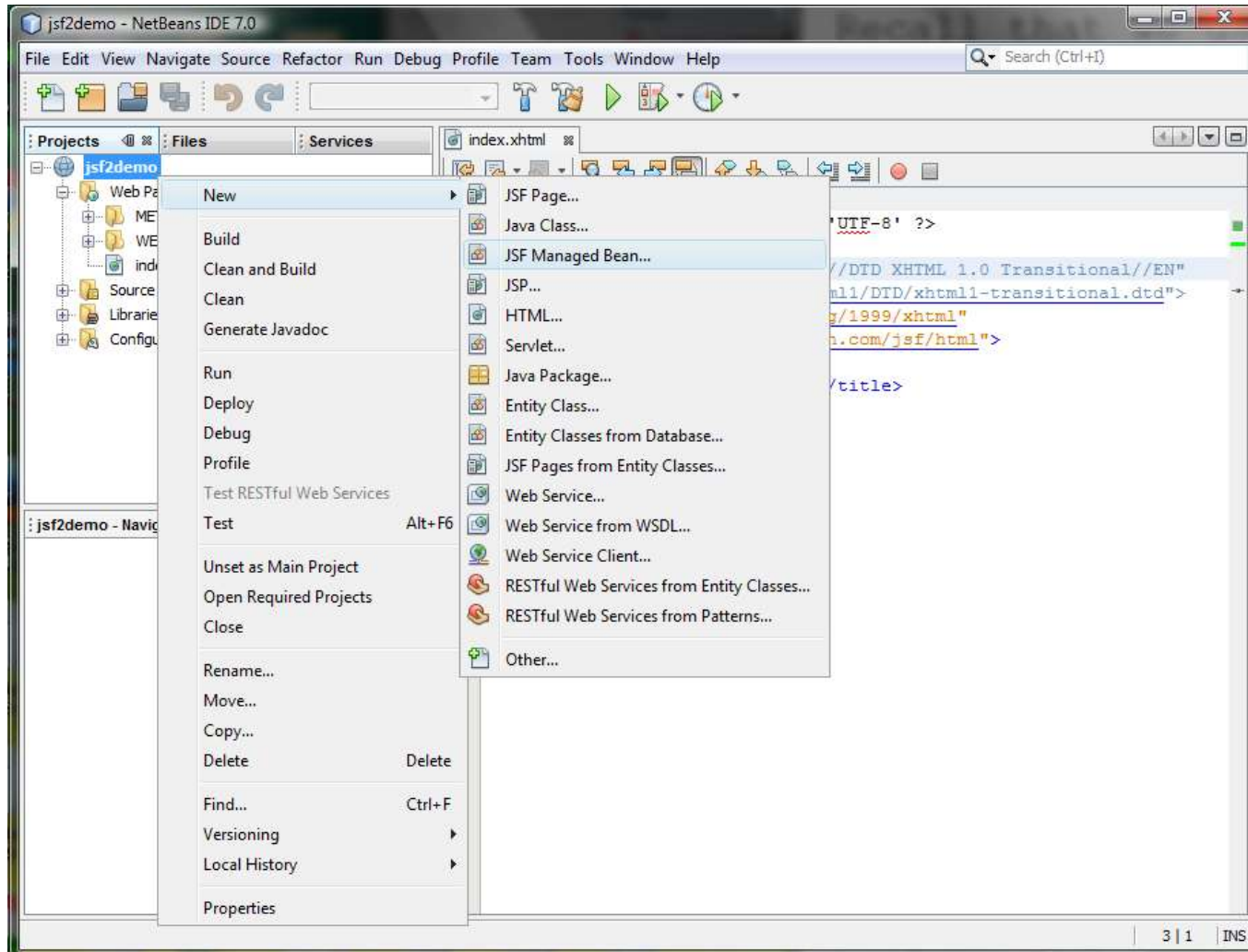


A Basic JSF Page

```
<?xml version='1.0' encoding='UTF-8' ?>
<!-- index.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://java.sun.com/jsf/html">
    <h:head>
        <title>Facelet Title</title>
    </h:head>
    <h:body>
        Hello from Facelets
    </h:body>
</html>
```



Managed JavaBeans for JSF



Managed JavaBeans for JSF

```
package jsf2demo;  
import javax.faces.bean.ManagedBean;  
import javax.faces.bean.RequestScoped;  
@ManagedBean  
@RequestScoped  
public class TimeBean {  
    public String getTime() {  
        return new java.util.Date().toString();  
    }  
}
```

`# {expression}`

`# {timeBean.time}`

`# {timeBean.getTime()}`



Listing 33.3 CurrentTime.xhtml

```
<?xml version='1.0' encoding='UTF-8' ?>
<!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://java.sun.com/jsf/html">
<h:head>
<title>Display Current Time</title>
<meta http-equiv="refresh" content="60" />
</h:head>
<h:body>
The current time is #{timeBean.time}
</h:body>
</html>
```



JSF GUI Components

JSF Tag	Description
<code>h:form</code>	inserts an XHTML form into a page.
<code>h:panelGroup</code>	similar to a Java flow layout container.
<code>h:panelGrid</code>	similar to a Java grid layout container.
<code>h:inputText</code>	displays a textbox for entering input.
<code>h:outputText</code>	displays a textbox for displaying output.
<code>h:inputTextArea</code>	displays a textarea for entering input.
<code>h:inputSecret</code>	displays a textbox for entering password.
<code>h:outputLabel</code>	displays a label.
<code>h:outputLink</code>	displays a hypertext link.
<code>h:selectOneMenu</code>	displays a combo box for selecting one item.
<code>h:selectOneRadio</code>	displays a set of radio button.
<code>h:selectBooleanCheckbox</code>	displays a checkbox.
<code>h:selectOneListbox</code>	displays a list for selecting one item.
<code>h:selectManyListbox</code>	displays a list for selecting multiple items.
<code>f:selectItem</code>	specifies an item in an <code>h:selectOneMenu</code> , <code>h:selectOneRadio</code> , or <code>h:selectManyListbox</code> .
<code>h:message</code>	displays a message for validating input.
<code>h:dataTable</code>	displays a data table.
<code>h:column</code>	specifies a column in a data table.
<code>h:graphicImage</code>	displays an image.



JSF UI Containers



The screenshot shows a web browser window with the title "Student Registration Form". The address bar displays the URL "http://localhost:8084/jsf2demo/faces/StudentRegistrationForm.xhtml". The form itself is titled "Student Registration Form" with a small American flag icon. It contains several input fields: "Last Name", "First Name", and "MI" (Middle Initial). Below these is a "Gender" section with radio buttons for "Male" and "Female". There is a "Major" dropdown menu currently showing "Computer Science" and a "Minor" dropdown menu showing "Mathematics" and "English". Below these are checkboxes for "Hobby" with options "Tennis", "Golf", and "Ping Pong". A "Remarks:" label is followed by a large text area. At the bottom left of the form is a "Register" button.

Firefox

Student Registration Form

http://localhost:8084/jsf2demo/faces/StudentRegistrationForm.xhtml

Google

Student Registration Form 🇺🇸

Last Name First Name MI

Gender ☐ Male ☐ Female

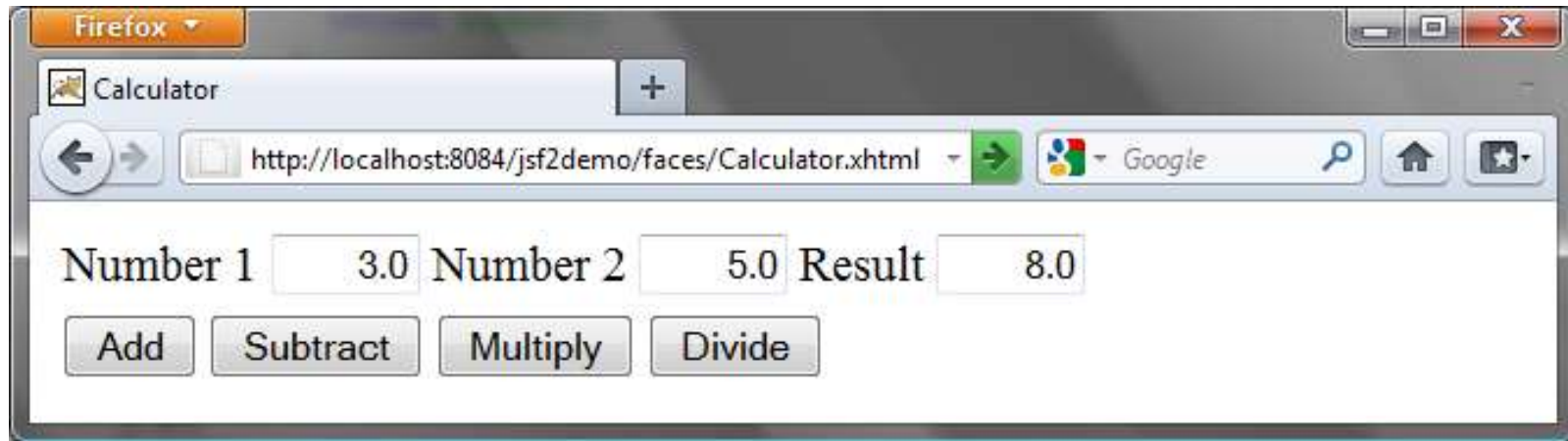
Major Minor

Hobby: ☐ Tennis ☐ Golf ☐ Ping Pong

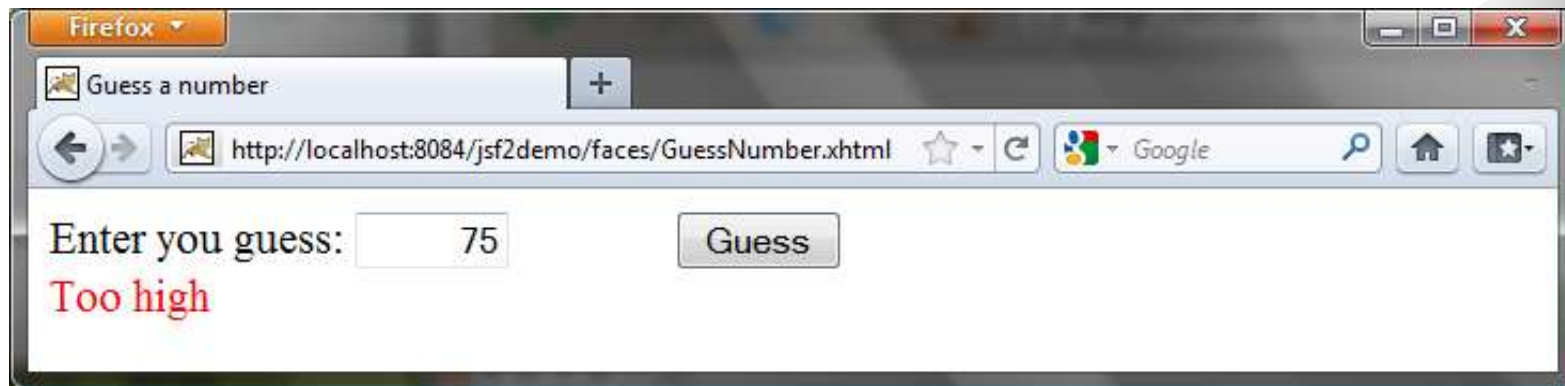
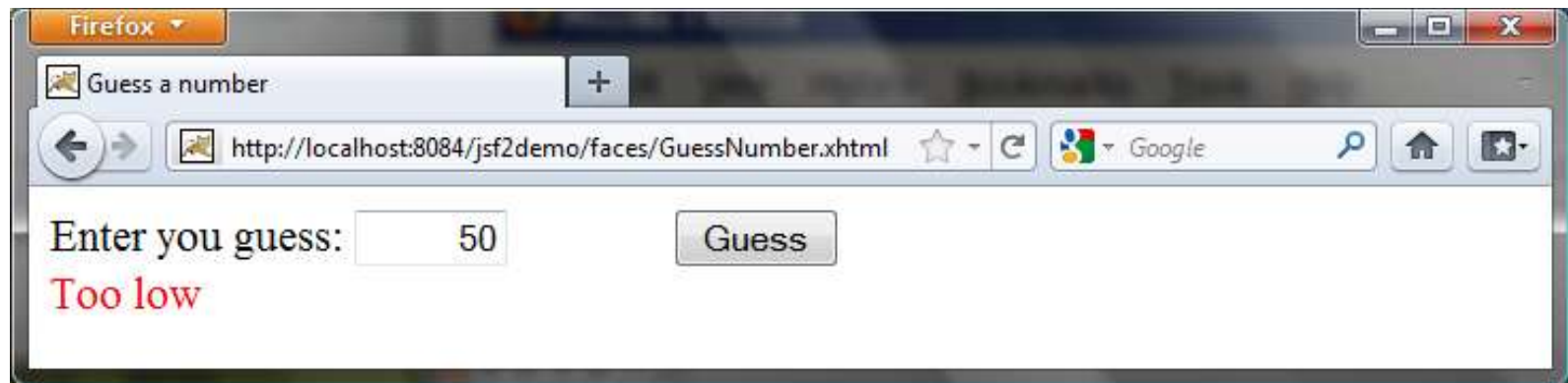
Remarks:

Register

33.5 Case Study: Calculator



33.6 Session Tracking



33.7 Validating Input

JSF Tag	Description
<code>f:validateLength</code>	validates the length of the input.
<code>f:validateDoubleRange</code>	validates whether numeric input falls within acceptable range of double values.
<code>f:validateLongRange</code>	validates whether numeric input falls within acceptable range of long values.
<code>f:validateRequired</code>	validates whether a field is not empty.
<code>f:validateRegex</code>	validates whether the input matches a regular expression.
<code>f:validateBean</code>	invokes a custom method in a bean to perform custom validation.

