JSF Tools Tutorial

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Introduction

The following chapters describe how to deal with classic/old style of JSF development. We recommend users to use JBoss Seam to simplify development, but until then you can read about classical JSF usage here.

Thus, in this document we are going to show you how to create a simple JSF application using JBoss Tools plugins for Eclipse. The completed application will ask a user to enter a name and click a button. The resulting new page will display the familiar message, "Hello <name>!" This tutorial will show you how to create and run such an application from the beginning along the way demonstrating some of the powerful features of JBoss Tools.

1.1. Key Features of JSF Tools

Here, we provide you with a key functionality which is integrated in JSF tooling.

Table 1.1. Key Functionality for JSF Tools

Feature	Benefit
JSF and Facelets support	Step-by-step wizards for creating new JSF and Facelets projects with a number of predefined templates, importing existing ones and adding JSF capabilities to non-jsf web projects.
Flexible and customizable project template management	Jump-start development with out-of-the-box templates or easily customized templates for re-use.
Support for JSF Configuration File	Working on file using three modes: diagram, tree and source. Synchronization between the modes and full control over the code. Easy moving around the diagram using the Diagram Navigator.
Support for Managed Beans	Adding new managed beans, generating code for attributes, properties and getter/setter methods.
Support for Custom Converters and Validators	Fast creating of custom converters and validators with tree view of faces-config.xml file.
Verification and Validation	All occuring errors will be immediately reported by verification feature, no matter in what view you are working. Constant validation and errors checking allows to catch many of the errors during development process that significantly reduces development time.

1.2. Other relevant resources on the topic

All JBoss Developer Studio/JBoss Tools release documentation you can find at *http://docs.jboss.org/tools* [http://docs.jboss.org/tools/] in the corresponding release directory.

The latest documentation builds are available at *http://download.jboss.org/jbosstools/nightly-docs* [http://download.jboss.org/jbosstools/nightly-docs/].

Creating a Simple JSF Application

Firstly, we assume that you have already launched Eclipse with JBoss Tools plug-ins installed and also that the Web Development perspective is the current one. (If not, make it active by selecting **Window** → **Open Perspective** → **Web Development** from the menu bar or by selecting **Window** → **Open Perspective** → **Other...** from the menu bar and then selecting **Web Development** from the Select Perspective dialog box.)

2.1. Setting Up the Project

Now we are going to create a new project for the application.

- For that go to the menu bar and select **File** → **New** → **Project...**
- Select **JBoss Tools Web** → **JSF** → **JSF Project** in the New Project dialog box.
- Click the **Next** button.
- Enter **jsfHello** as the project name.
- Leave everything else as is, and click the **Finish** button.

2.2. JSF Configuration File

A **jsfHello** node should appear in the upper-left **Package Explorer** view.

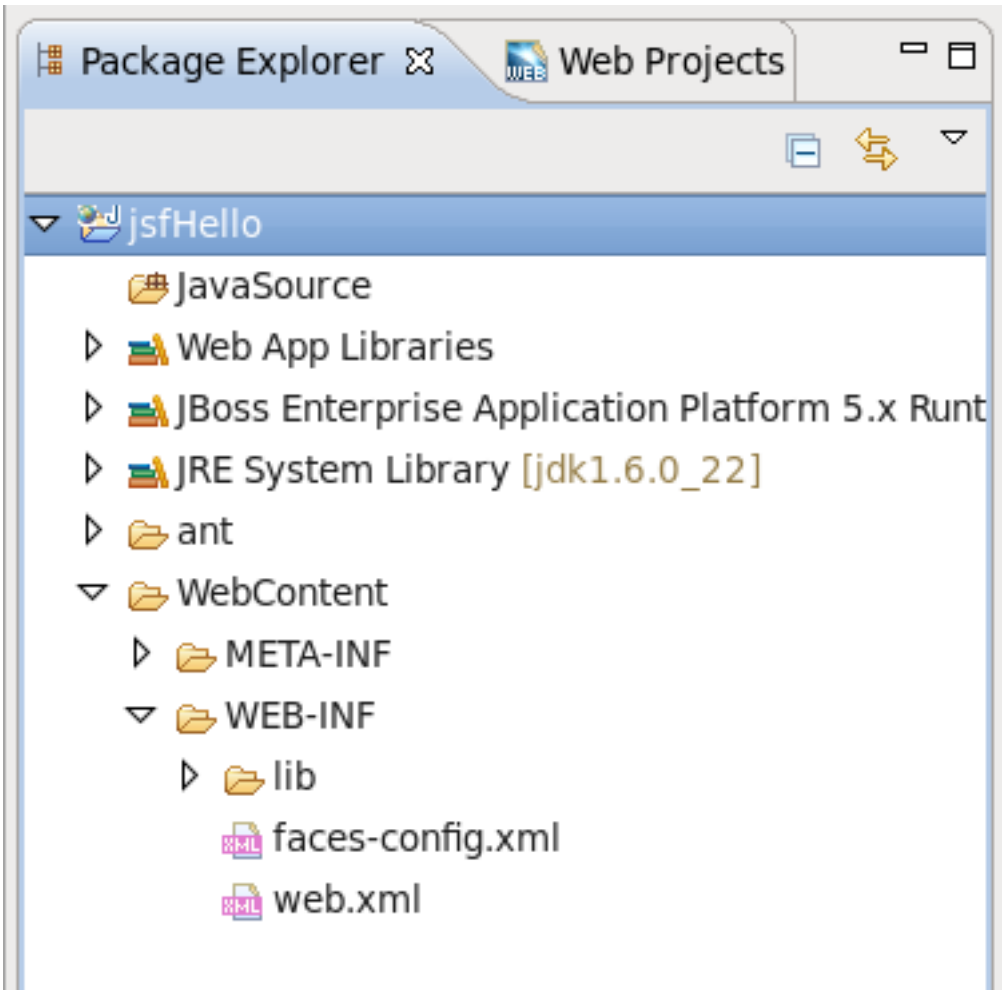

Figure 2.1. Package Explorer View

- Click the plus sign next to **jsfHello** to reveal the child nodes
- Click the plus sign next to **WebContent** under jsfHello
- Click the plus sign next to **WEB-INF** under WebContent
- Then double-click on the `faces-config.xml` node to display the JSF application configuration file editor

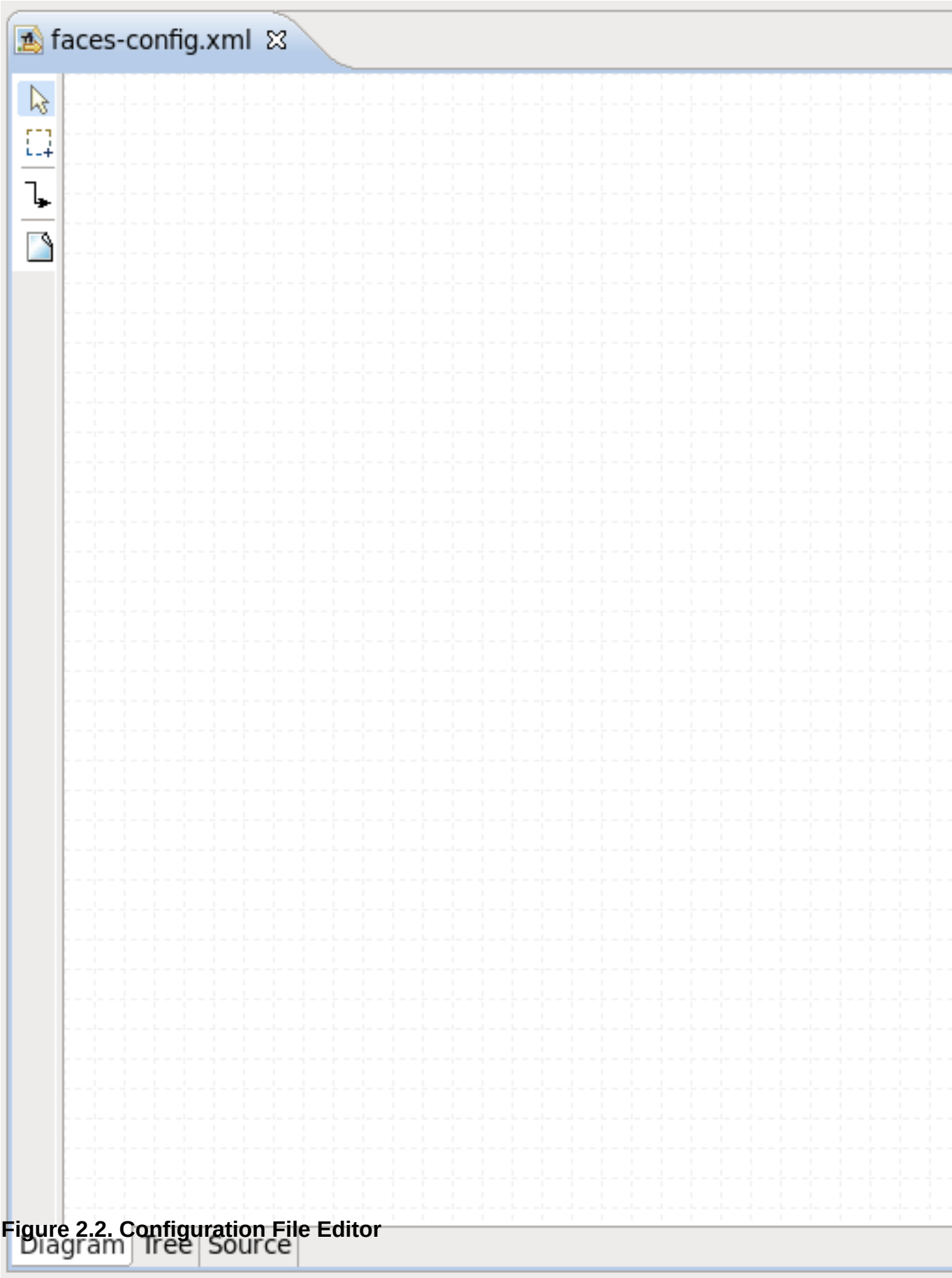

Figure 2.2. Configuration File Editor

Adding Navigation to the Application

In our simple application, the flow is defined as a single navigation rule connecting two views (presentation files). At this point, we will create the placeholders for the two JSP presentation files and then the navigation rule to connect them as views. Later, we will complete the coding for the JSP presentation files. We can do all of this in the Diagram mode of the configuration file editor.

3.1. Adding Two Views (JSP Pages)

- Create a new folder called `pages` under the `WebContent` folder.
- Right-click anywhere on the diagram and select **New View...** from the context menu.
- In the dialog box, type **pages/inputname** as the value for From View ID.
- Leave everything else as is.
- Click the **Finish** button.

  If you look in the Package Explorer view you should see a `pages` folder under the `WebContent` folder. Opening it will reveal the JSP file you just created.
- Back on the diagram, right-click anywhere and select **New View...** from the pop-up menu.
- In the dialog box, type **pages/greeting** as the value for From View ID.
- Leave everything else as is.
- Click the **Finish**.

3.2. Creating the Transition (Navigation Rule)

- In the diagram, select the connection icon third from the top along the upper left side of the diagram ( ) to get an arrow cursor with a two-pronged plug at the arrow's bottom.
- Click on the **pages/inputname** page icon and then click on the **pages/greeting** page icon.

A transition should appear between the two icons.

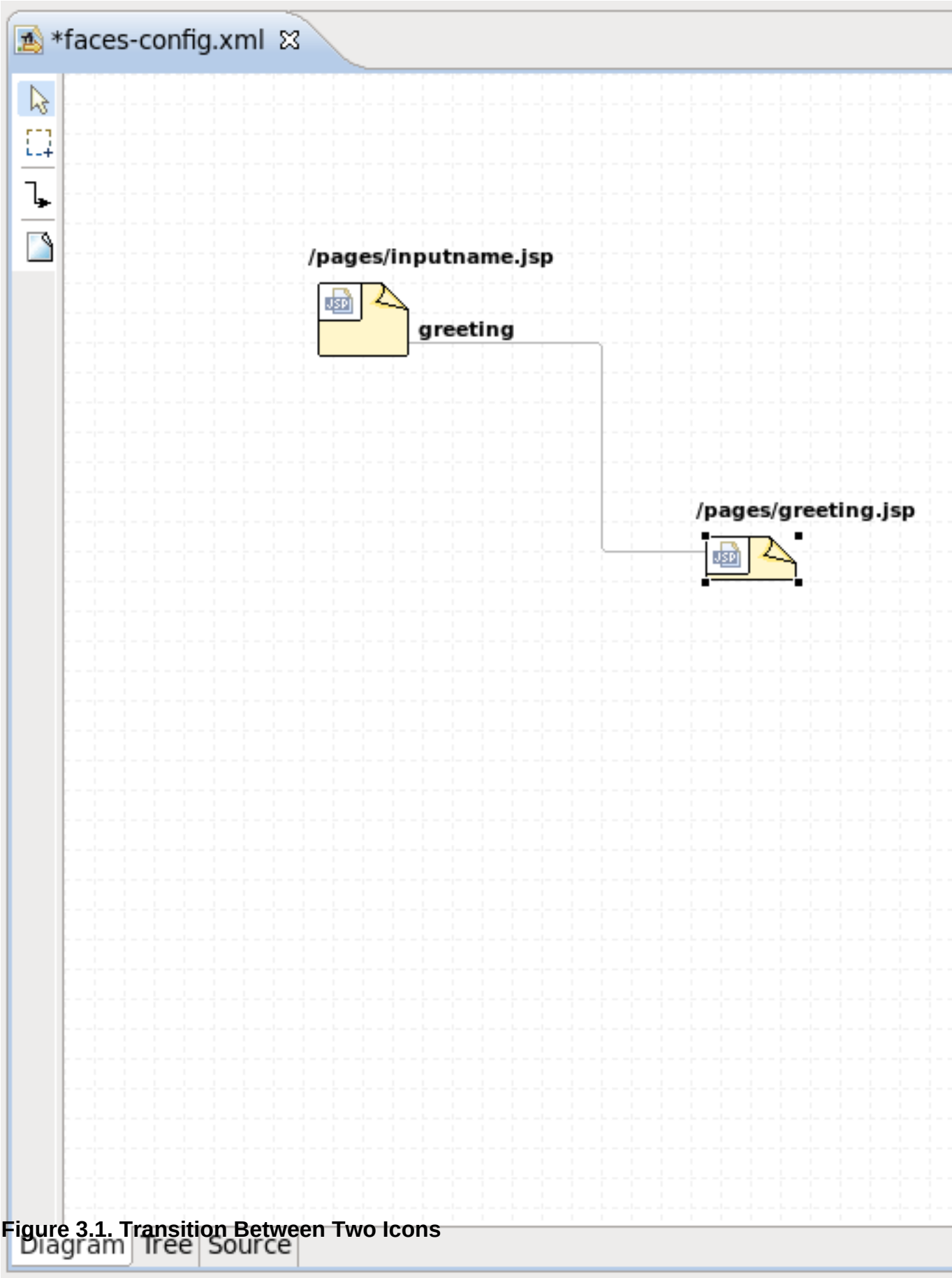

Figure 3.1. Transition Between Two Icons

- Select **File** → **Save** from the menu bar.

Adding a Managed Bean to the Application

To store data in the application, we will use a managed bean.

- Click on the **Tree** tab at the bottom of the editing window.
- Select the **Managed Beans** node and then click the **Add...** button displayed along the right side of the editor window.
- Type in **jsfHello.PersonBean** for Class and **personBean** for Name. Leave the **Scope** selection as is and leave the **Generate Source Code** checkbox checked.
- Click the **Finish** button.
- personBean will now be selected and three sections of information: **Managed Bean**, **Properties**, and **Advanced** will be displayed about it. Under the **Properties** section, click the **Add...** button.
- Type in **name** for **Property-Name**. Leave everything else as is. (When **Property-Class** is not filled in, String is the assumed type.)
- Click the **Finish** button.
- Select the **personBean** node in the tree.

You should see this now:

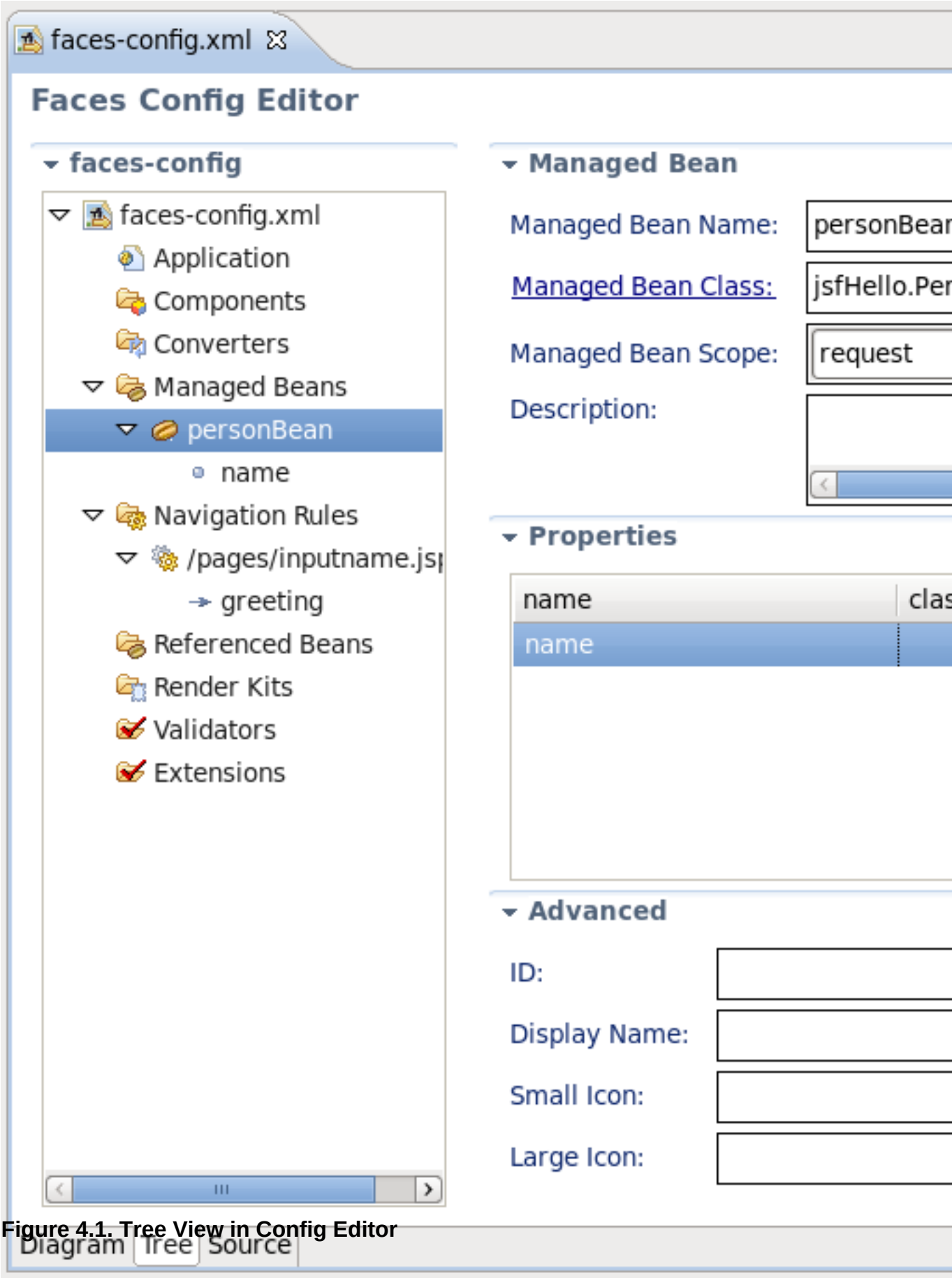

Figure 4.1. Tree View in Config Editor

- Select **File** → **Save** from the menu bar.

You have now registered the *managed bean* and created a *stub-coded class* file for it.

Editing the JSP View Files

Now we will finish editing the JSP files for our two "views" using JSP Visual Page Editor.

5.1. inputname.jsp

- Click on the **Diagram** tab of the configuration file editor.
- Open the editor for this first JSP file by double-clicking on the **/pages/inputname.jsp** icon.

The Visual Page Editor will open in a screen split between source code along the top and a WYSIWIG view along the bottom:

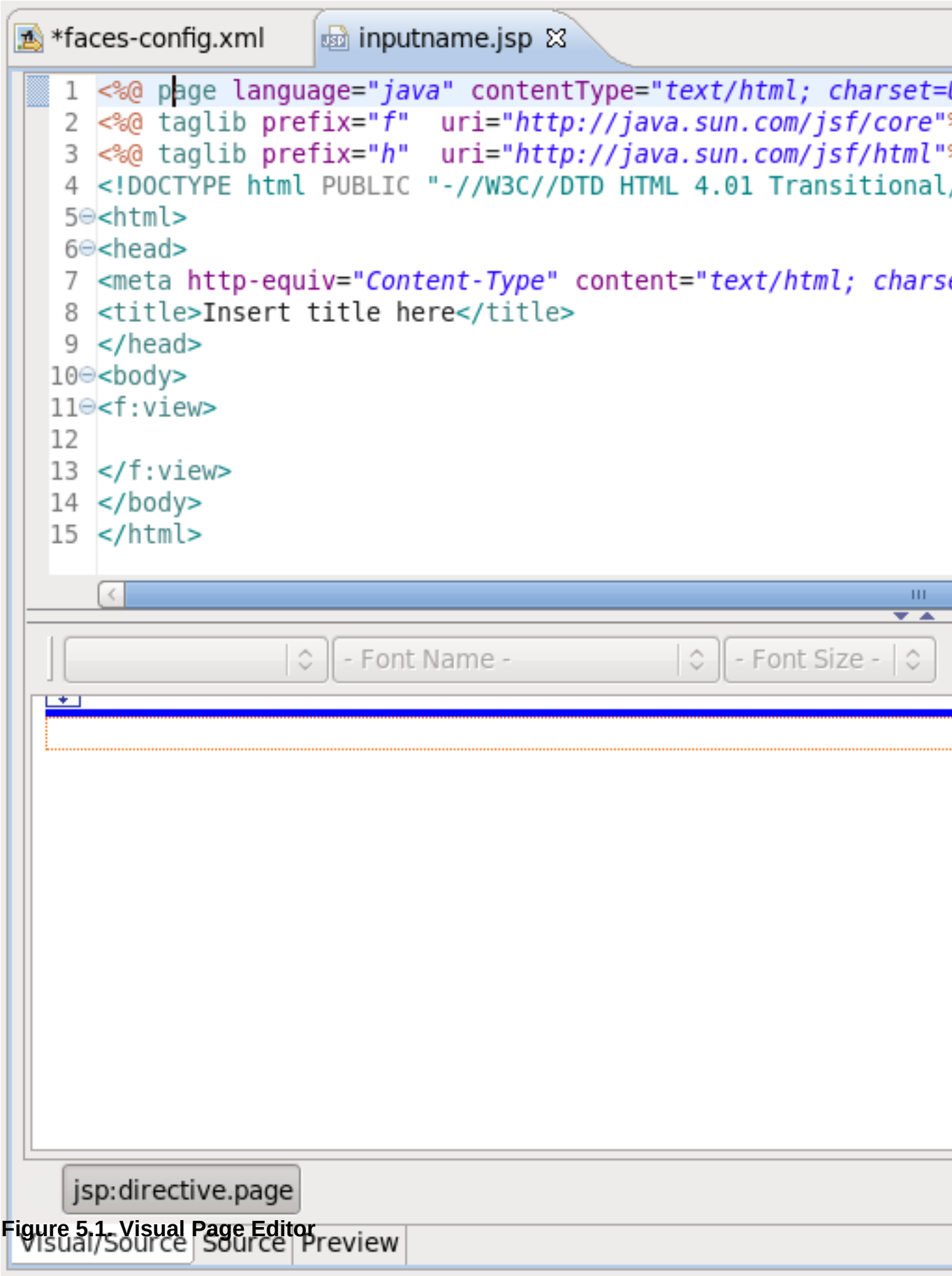

Figure 5.1. Visual Page Editor

Some JSF code is already in the file, because we have chosen a template to create a page.

- Select the **Visual** tab, so we can work with the editor completely in its WYSIWYG mode.
- To the right of the editor, in the JBoss Tools Palette, expand the **JSF HTML** palette folder by selecting it.

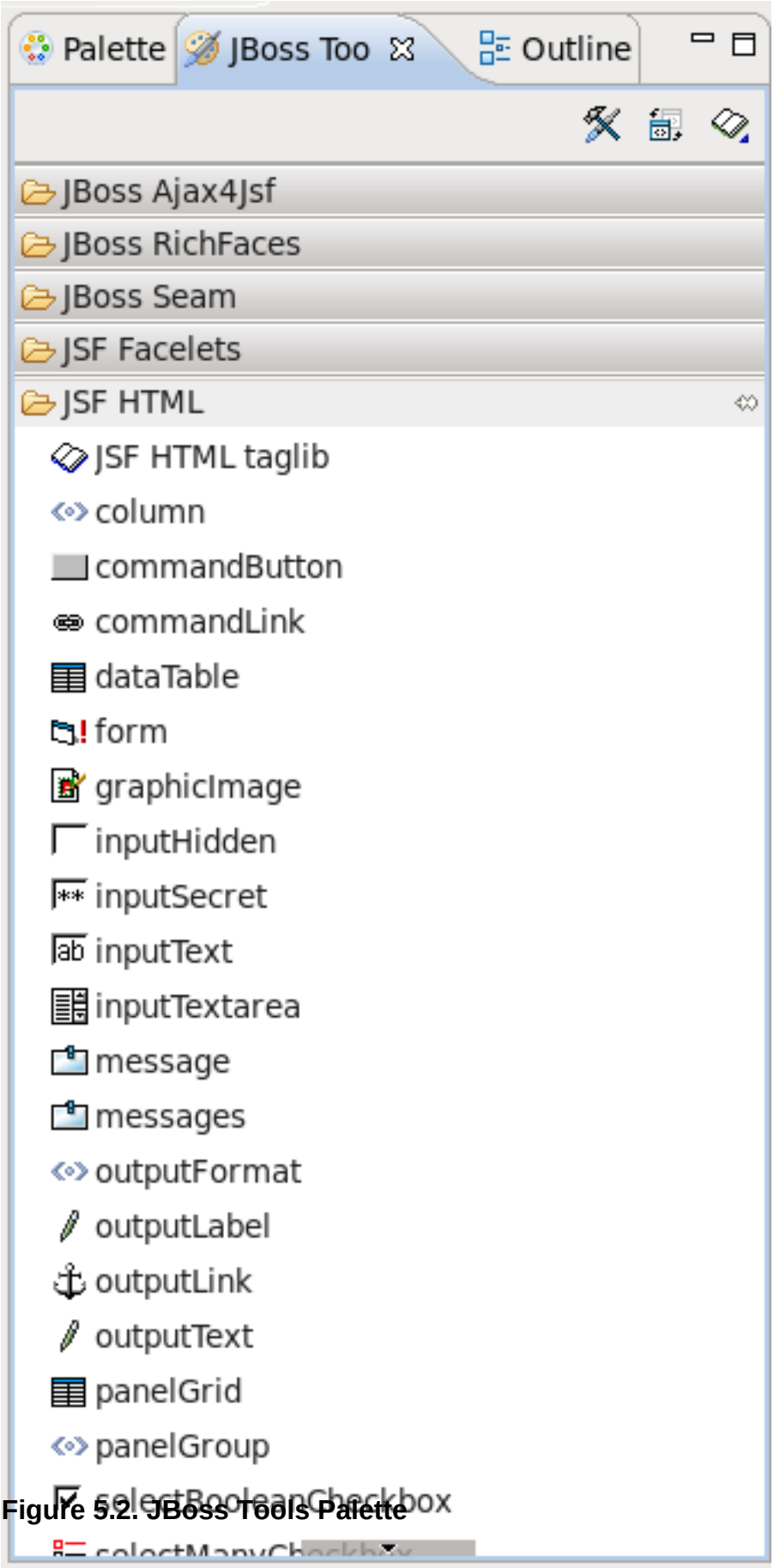

Figure 5.2. JBoss Tools Palette

- Click on **form** within this folder, drag the cursor over to the editor, and drop it inside the `<f:view>` element. This can be done by dragging the form element onto the horizontal line at the top of the `<f:view>` element. You should see a message saying **Place at the beginning of <f:view>**.

> **Important**
>
> It is also possible to drag from the toolbar to the **Source** view. If you encounter any issues when dragging items to the **Visual** view, use the **Source** view; drag an element from the toolbar and drop it where you wish it to be within the code.

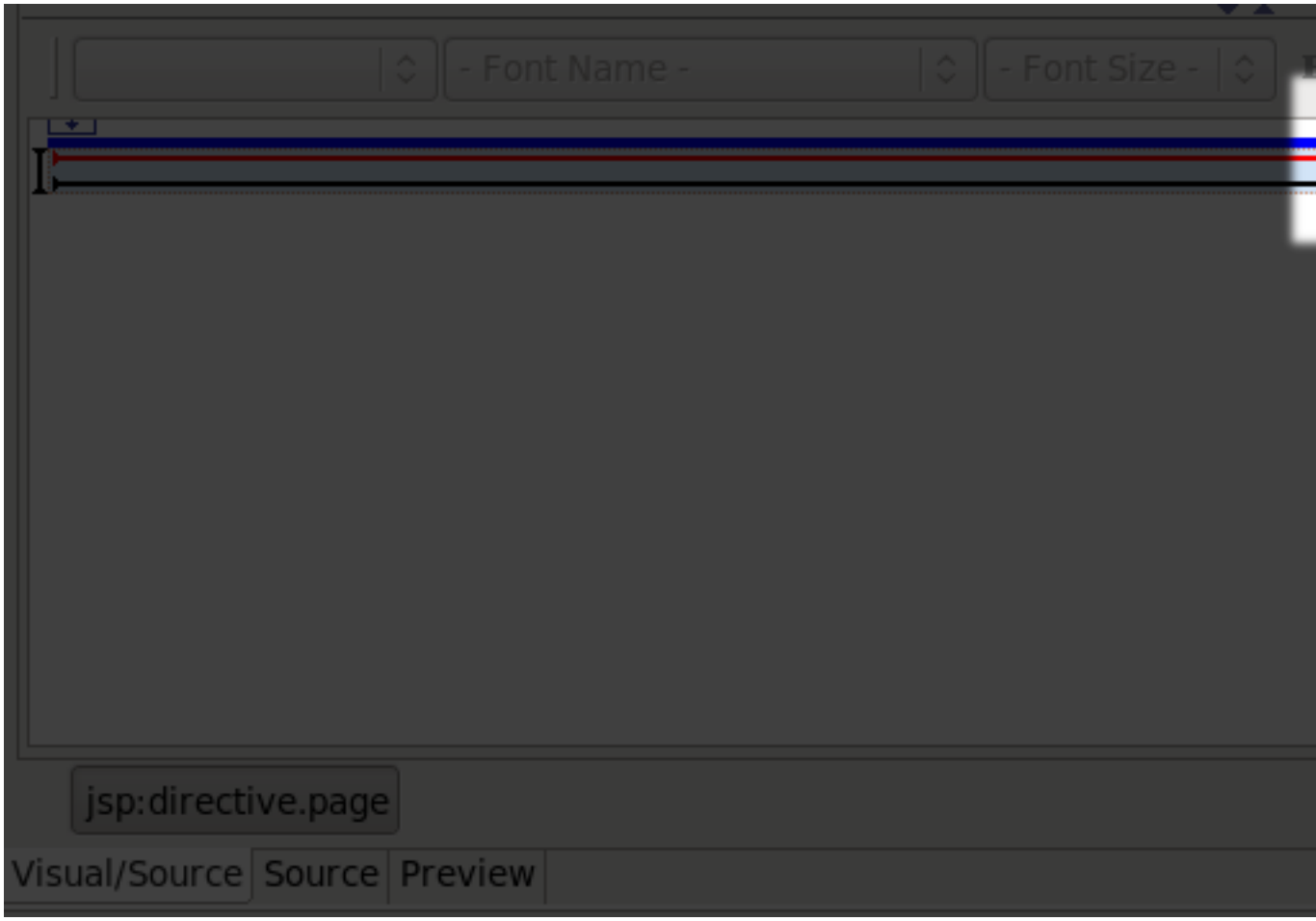

Figure 5.3. Inserting the form element

- The **Insert Tags** dialog box will be displayed.
- In the value field next to **id**, type **greeting** and click on the **Close** button.
- Type "Please enter name:" inside the `<h:form>` element.
- Select **inputText** within the JSF HTML palette folder place it at the end of the `<h:form>` element.

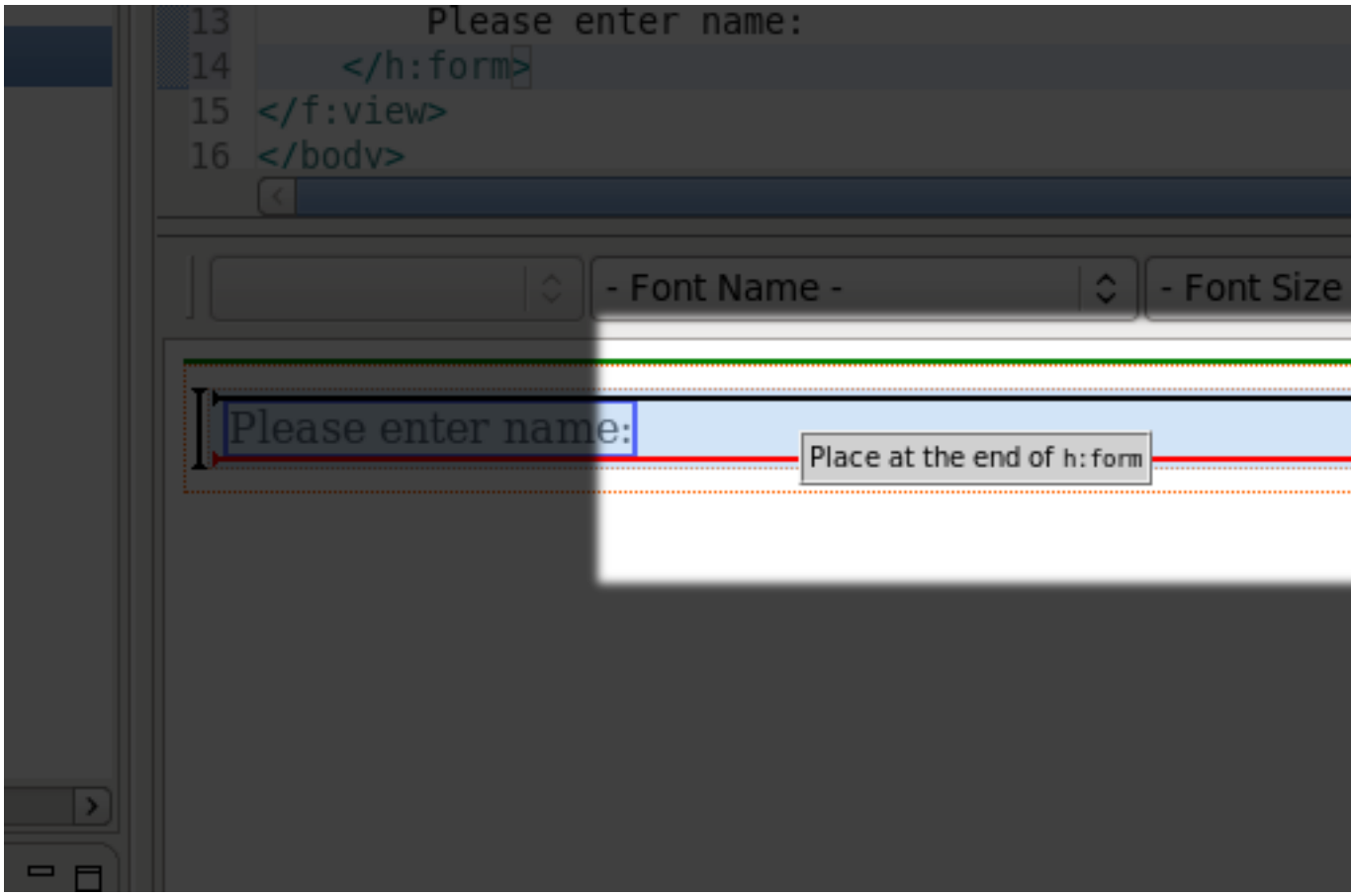

Figure 5.4. Inserting the input text element

- In the attributes dialog, click in the **value** field next to the value attribute and click on the **...**button.
- Then, select the **Managed Beans** → **personBean** → **name** node and click on the **OK** button.
- Back in the attributes dialog, select the **Advanced** tab, and type in **name** as the value for the **id** attribute, and then click on the **Finish** button.
- Select **commandButton** within the **JSF HTML palette** folder and drag it into the end of the `<h:form>` element.
- In the attributes dialog, click in the value field next to the **action** attribute and click on the **...** button.
- Then, select the **View Actions** → **greeting** node and click on the **OK** button.
- In the **Advanced** tab, type in **Say Hello** as the value for the value attribute ("Say Hello") and then click on the **Finish** button.

The source coding should be something like this now:

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
 pageEncoding="UTF-8"%>
<%@ taglib prefix="f" uri="http://java.sun.com/jsf/core"%>
<%@ taglib prefix="h" uri="http://java.sun.com/jsf/html"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://
www.w3.org/TR/html4/loose.dtd">
<html>
<head>
 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
 <title>Insert title here</title>
</head>
 <body>
  <f:view>
   <h:form id="greeting">
    Please enter name:
   <h:inputText id="name" value="#{personBean.name}"/>
   <h:commandButton action="greeting" value="Say Hello"/>
   </h:form>
  </f:view>
 </body>
</html>
```

The editor should look like this:

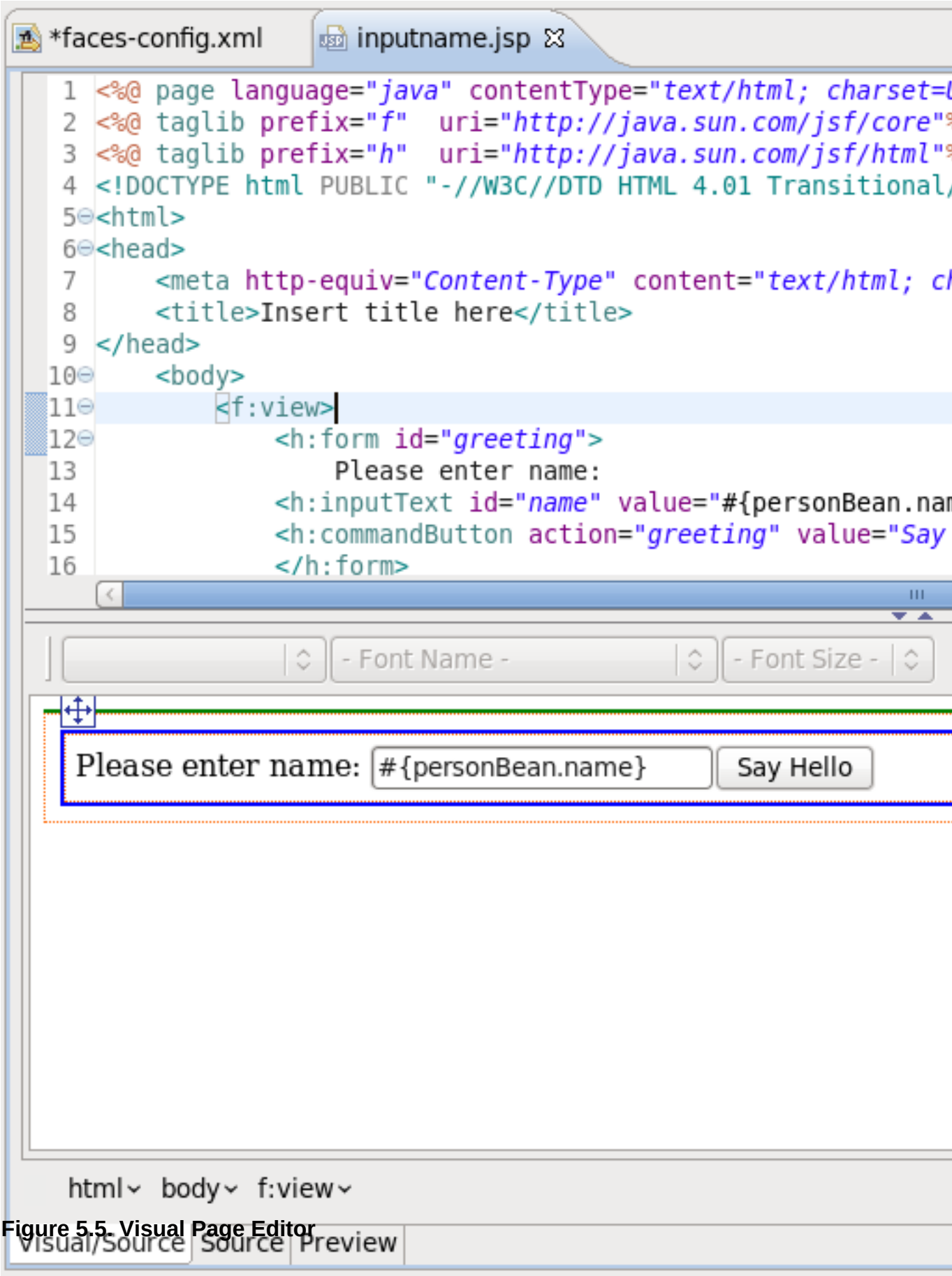

Figure 5.5. Visual Page Editor

- Save the file by selecting **File** → **Save** from the menu bar

5.2. greeting.jsp

- Click on the `faces-config.xml` tab to bring the diagram back
- Open the editor for the second file by double-clicking on the `/pages/greeting.jsp` icon
- Select the **Visual** tab, so we can work with the editor completely in its WYSIWYG mode
- Type "Hello " (note the space after Hello) into the box
- Select **outputText** within the JSF HTML palette folder and drag it into the innermost box in the editor after "Hello "
- In the attributes dialog, click in **value** field next to the value attribute and click on the **...** (Browse) button
- Then, select the **Managed Beans** → **personBean** → **name** node, click on the **OK** button, and then click on the **Finish** button.
- Right after the output field, type an *exclamation point* (*!*)

The source coding should be something like this now:

```
<%@ taglib uri="http://java.sun.com/jsf/html" prefix="h" %>
<%@ taglib uri="http://java.sun.com/jsf/core" prefix="f" %>
<html>
<head>
<title></title>
</head>
<body>
<f:view>
Hello <h:outputText value="#{personBean.name}"/>!
</f:view>
</body>
</html>
```

- Save the file

Creating the Start Page

You also need to create a start page as an entry point into the application.

- In the Package Explorer view to the left, right-click **jsfHello** → **WebContent** and select **New** → **JSP File**
- For Name type in **index**, for Template select **New JSP File (html)** and click the **Finish** button.

A JSP editor will open up on the newly created file.

- In the Source part of the split screen, replace the contents of the file with the code below.

```
<!doctype html public "-//w3c//dtd html 4.0 transitional//en">
<html>
<head></head>
<body>
<jsp:forward page="/pages/inputname.jsf" />
</body>
</html>
```

Note the `.jsf` extension for the file name. This is a mapping defined in the `web.xml` file for the project for invoking JavaServer Faces when you run the application.

- Select **File** → **Save** from the menu bar

Running the Application

Everything is now ready for running our application by using the JBoss engine. For controlling JBoss server there is Servers view:

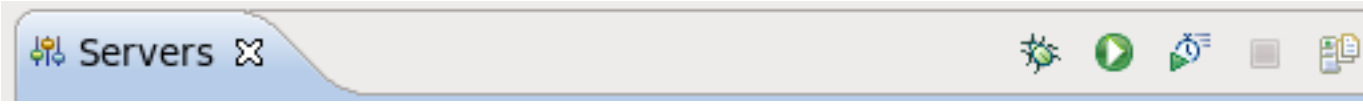

Figure 7.1. Servers view

- Start up JBoss by clicking on the icon in Servers view. (If JBoss is already running, stop it by clicking on the red icon and then start it again. Remember, the JSF run-time requires restarting the servlet engine when any changes have been made.) After the messages in the Console tabbed view stop scrolling, JBoss is available
- Click the Run icon(
  or right click your project folder and select **Run As** → **Run on Server**:

This is the equivalent of launching the browser and typing *http://localhost:8080/jsfHello/index.jsp* [http://localhost:8080/jsfHello/index.jsp] into your browser. Our JSF application should now appear.

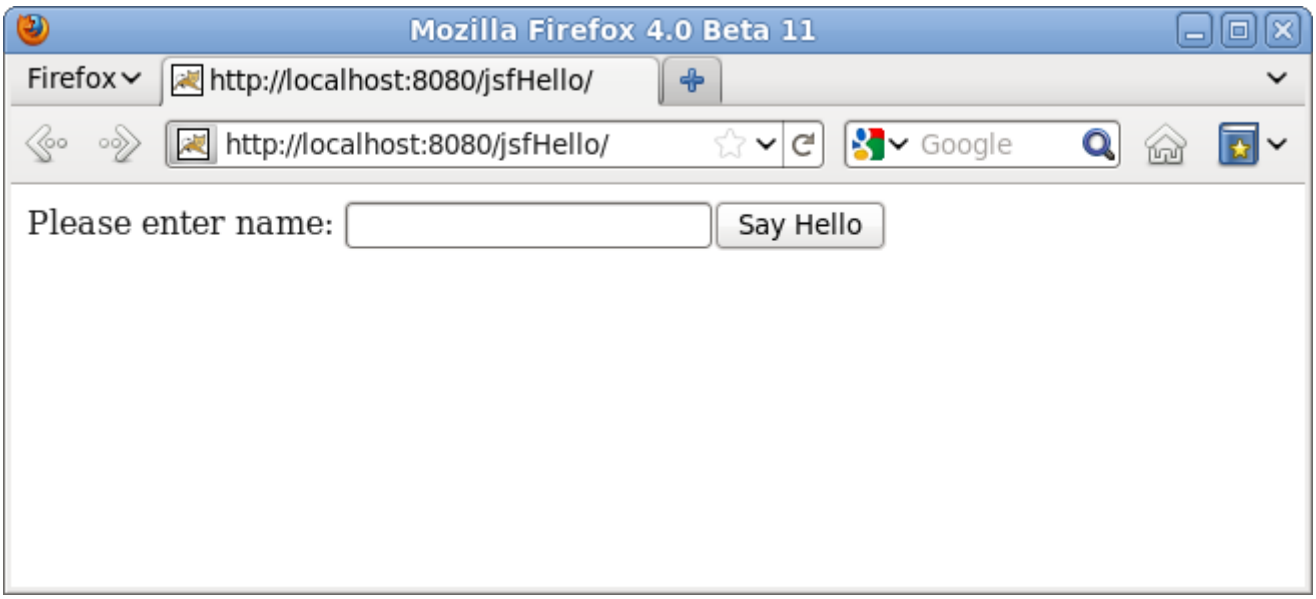

Figure 7.2. JSF Application in Firefox 4.0

Other Relevant Resources on the topic

- JSF on Sun: *JavaServer Faces Technology* [http://java.sun.com/javaee/javaserverfaces/]
- Core JSF: *Core JavaServer Faces* [http://www.horstmann.com/corejsf/]
- API: *JSF API* [http://java.sun.com/javaee/javaserverfaces/reference/api/index.html]
- JSF Tags: *JSF Core Tags* [http://www.horstmann.com/corejsf/jsf-tags.html]
- HTML Tags Reference: *JSF HTML Tags Reference* [http://www.exadel.com/tutorial/jsf/jsftags-guide.html]
- JSF Central: *JSF Central - Your JavaServer Faces Community* [http://www.jsfcentral.com/]
- FAQ: *JSF FAQ* [http://wiki.java.net/bin/view/Projects/JavaServerFacesSpecFaq]
- Download: *JavaServer Faces Technology - Download* [http://java.sun.com/javaee/javaserverfaces/download.html]

In summary, with this tutorial you should now know how to organize JSF sample application using the wizards provided by JBoss Tools, configure its stuff and finally run it on the JBoss Server.

Find out more features on JSF tooling in our JSF Tools Reference Guide. If you have questions and suggestions, please refer to *JBoss Tools Forum* [http://www.jboss.com/index.html?module=bb&op=viewforum&f=201].