CIS 764 Tutorial: Log-in Application

Javier Ramos Rodriguez

Purpose

This tutorial shows you how to create a small web application that checks the user name and password.

Overview

This tutorial will show how to use the **EJB** 3.0 specification and the Java Server Faces (JSF) in *Jdeveloper*. We will show that **JSF** are very useful to validate the inputs.

Scenario

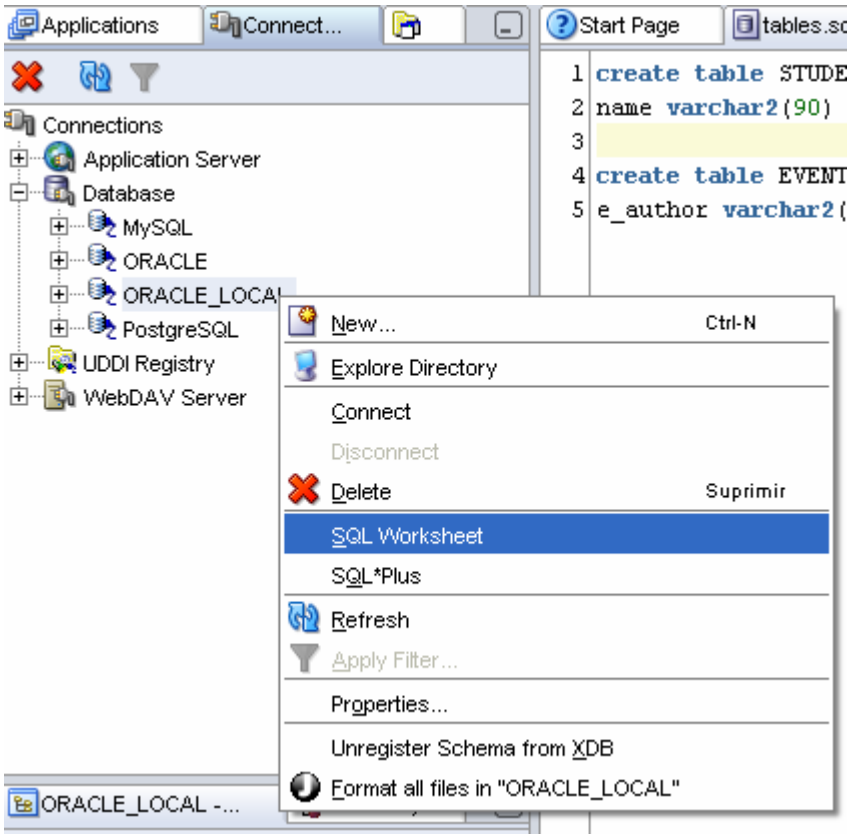
In this tutorial we'll create a persistence object **Student** from a table STUDENT. We will create a session bean to manage the entity object (*entity bean*) and we'll use JSF as View-Controller.

Prerequisites

You'll need to have access to an Oracle Database and the *Jdeveloper* 10g IDE. You also need a connection to the database.

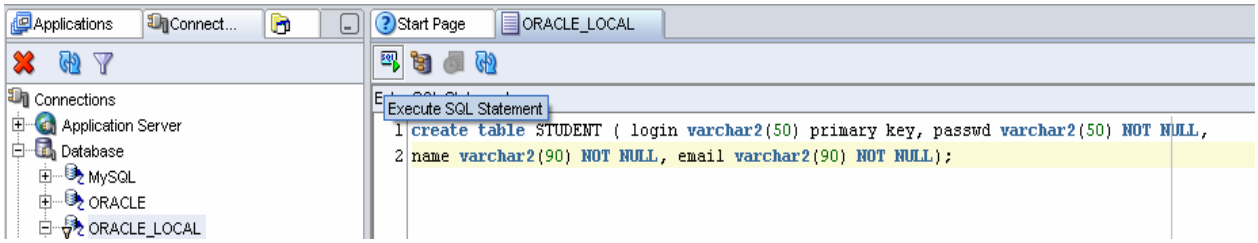
Step 1. Creating the STUDENT table.

1. Open the *Jdeveloper* and on the navigator select connections. Then, go to the Oracle database connection and right-click on *SQLworksheet*.



2. In the SQL worksheet window, copy and paste this SQL code:

```
create table STUDENT ( login varchar2(50) primary key,
passwd varchar2(50) NOT NULL,  name varchar2(90) NOT
NULL, email varchar2(90) NOT NULL);
```

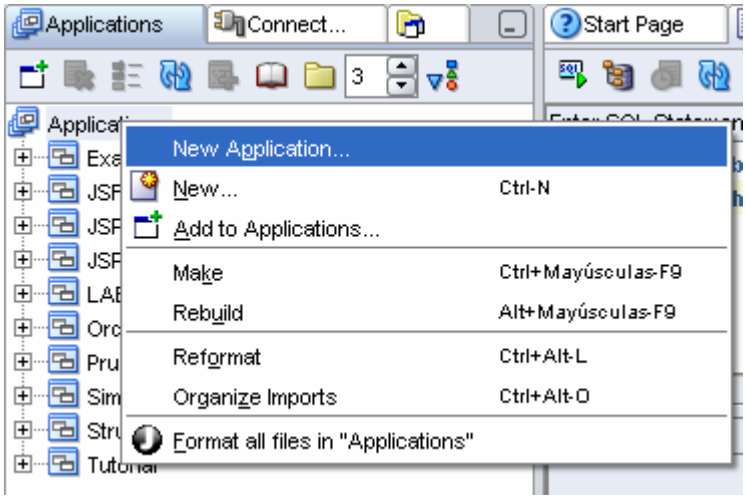


3. Click on the “Execute SQL Statement” button and the query will be executed.

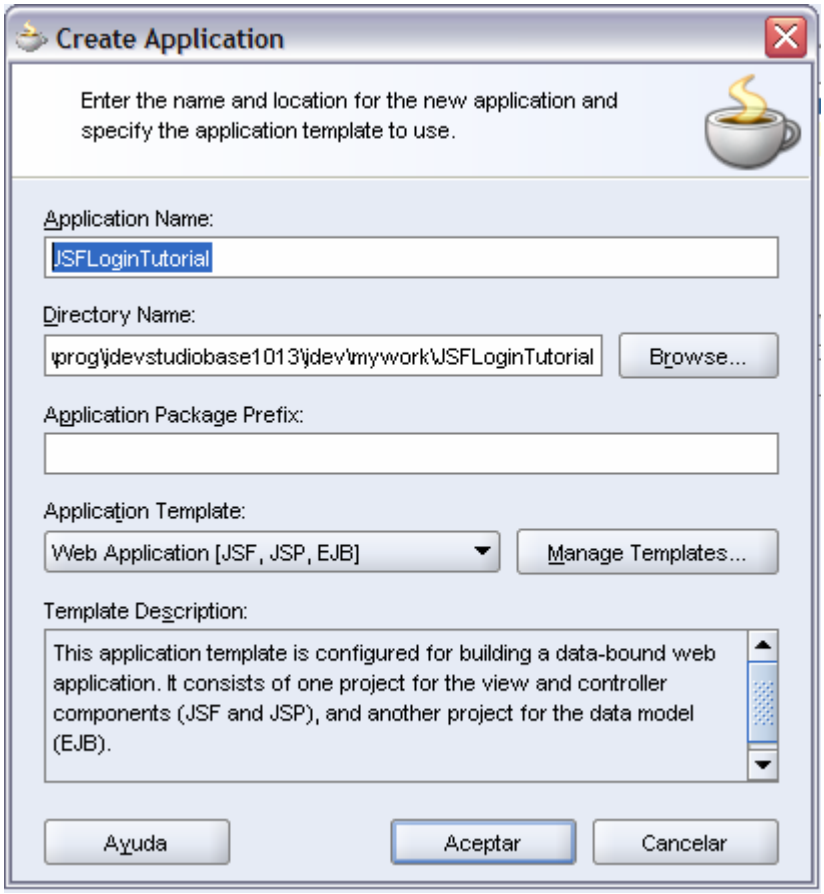
Step 2. Configuring the Application

In this section we will create the persistence object using entity beans.

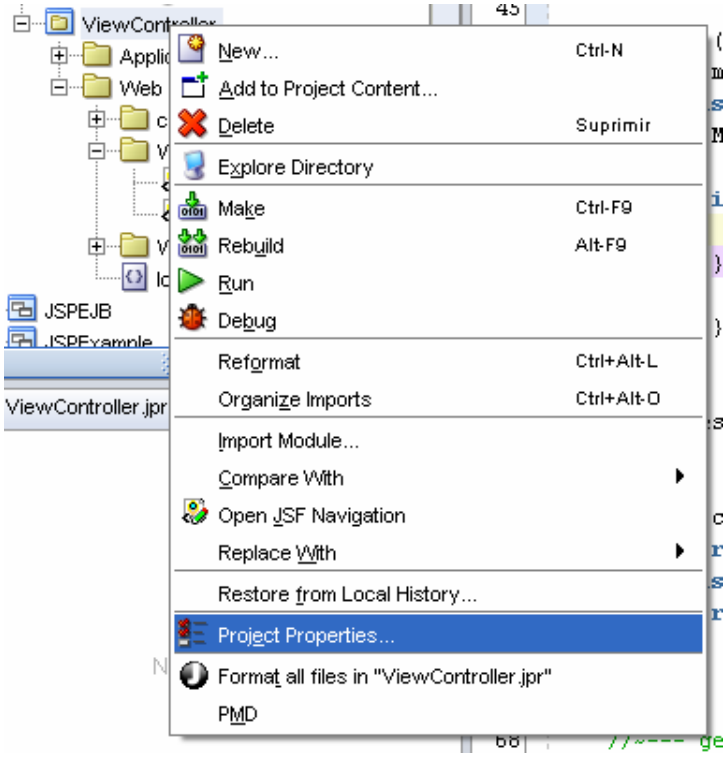
1. In *JDeveloper*, click the Applications tab. In the Applications navigator, right-click Applications and select **New Application** from the shortcut menu.



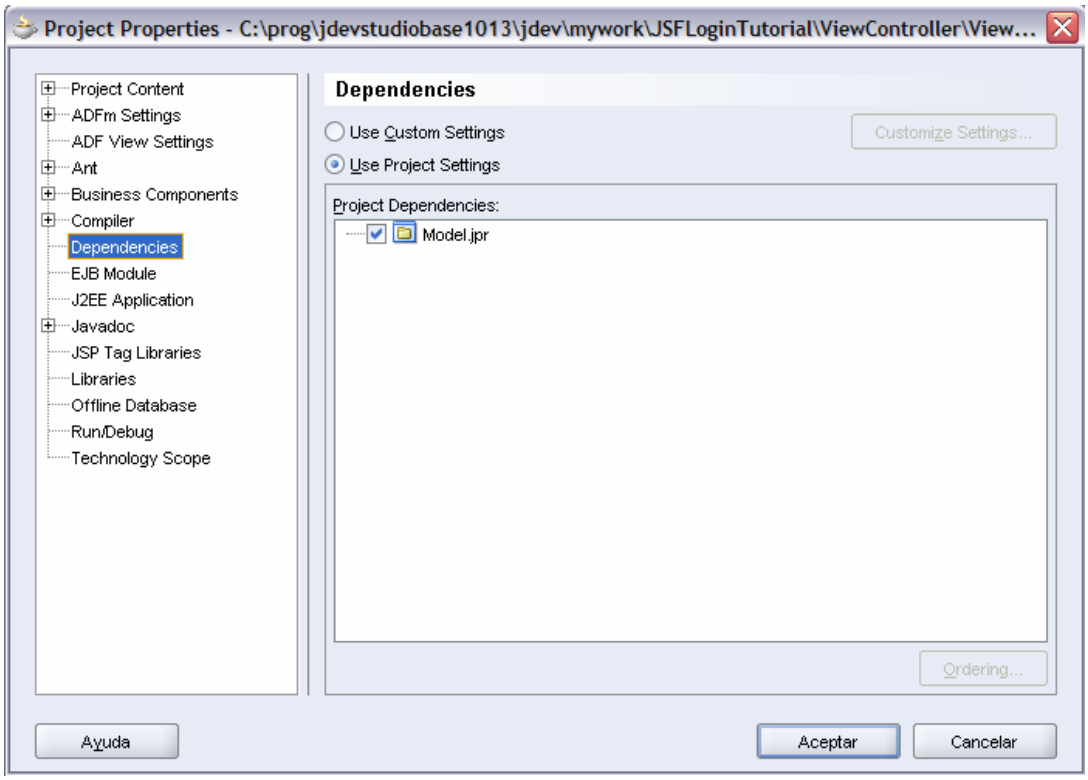
2. In the Create Application dialog box, enter ***JSFLoginTutorial*** as the application name, and select the **JSF, JSP, EJB template** option. Click OK.



3. In the *JSFLoginTutorial* application, right-click in **ViewController** project and then click on properties.

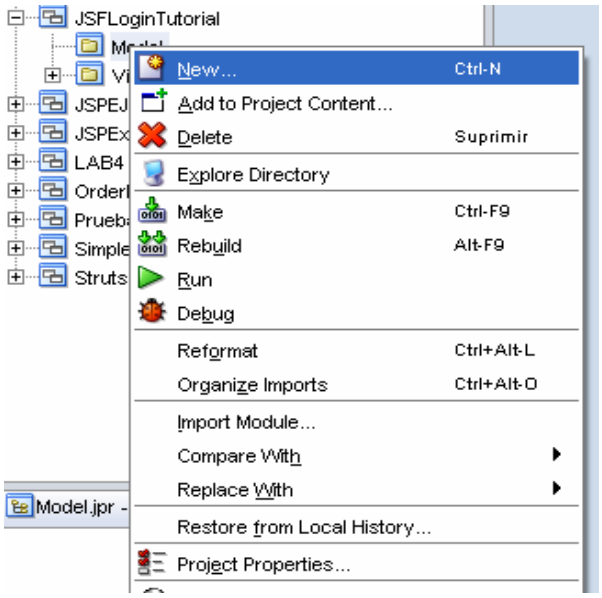


4. Choose Dependences tab and click on the Model.

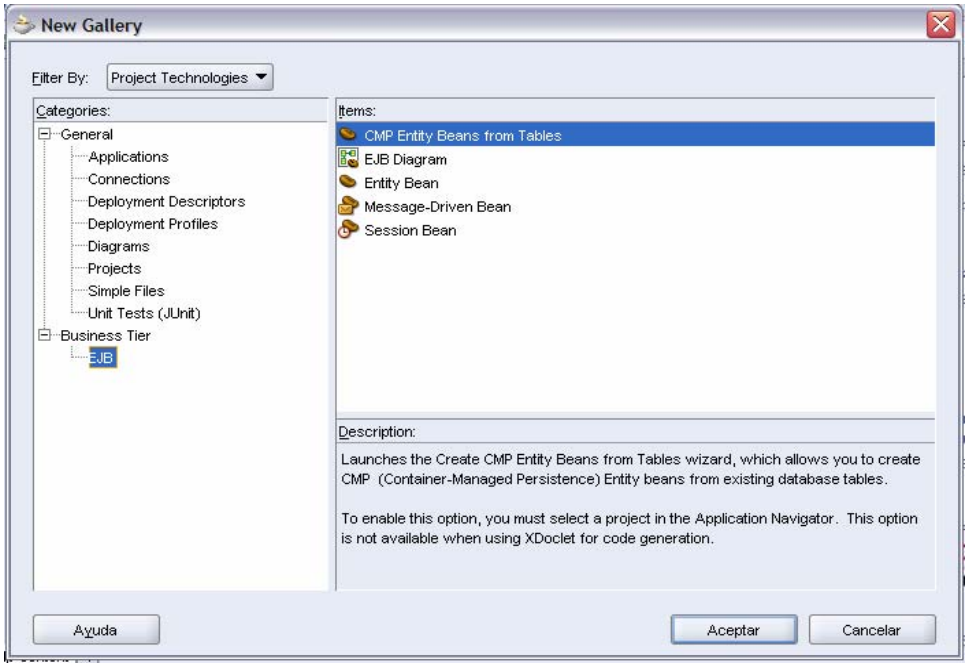

Project Properties - C:\prog\jdevstudiobase1013\jdev\mywork\JSFLoginTutorial\ViewController\View...
Project Content
ADFm Settings
ADF View Settings
Ant
Business Components
Compiler
Dependencies
EJB Module
J2EE Application
Javadoc
JSP Tag Libraries
Libraries
Offline Database
Run/Debug
Technology Scope
Dependencies
Use Custom Settings
Customize Settings...
Use Project Settings
Project Dependencies:
Model.jpr
Ordering...
Ayuda
Aceptar
Cancelar

Step 3. Creating the Persistence Model

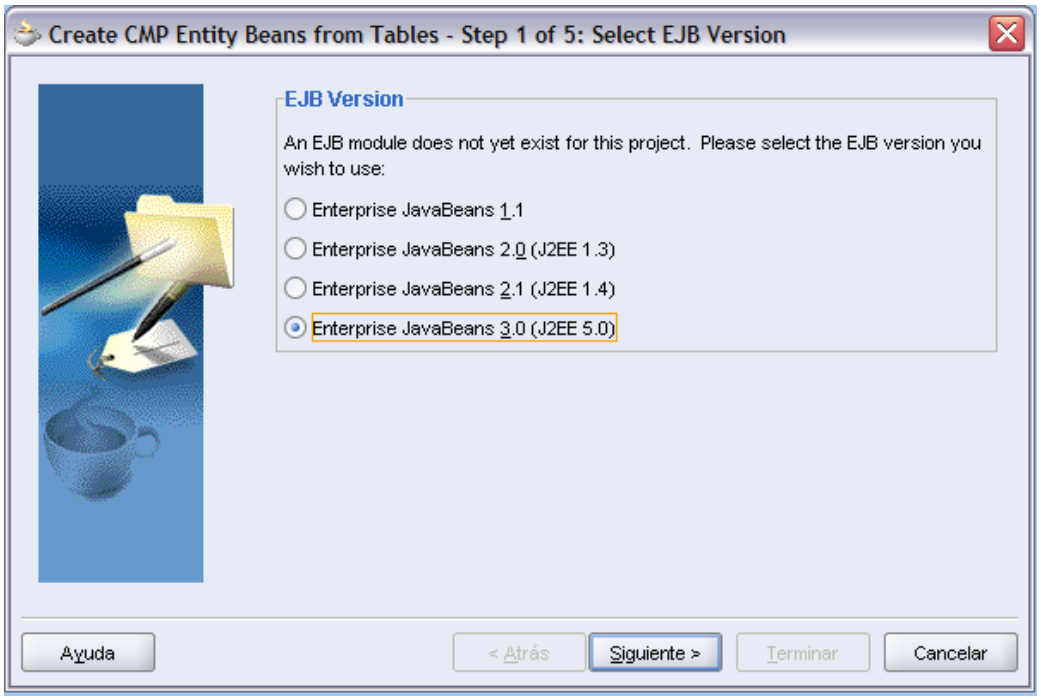
1. In the Applications navigator, right-click the **JSFLoginTutorial** node and choose the New option.



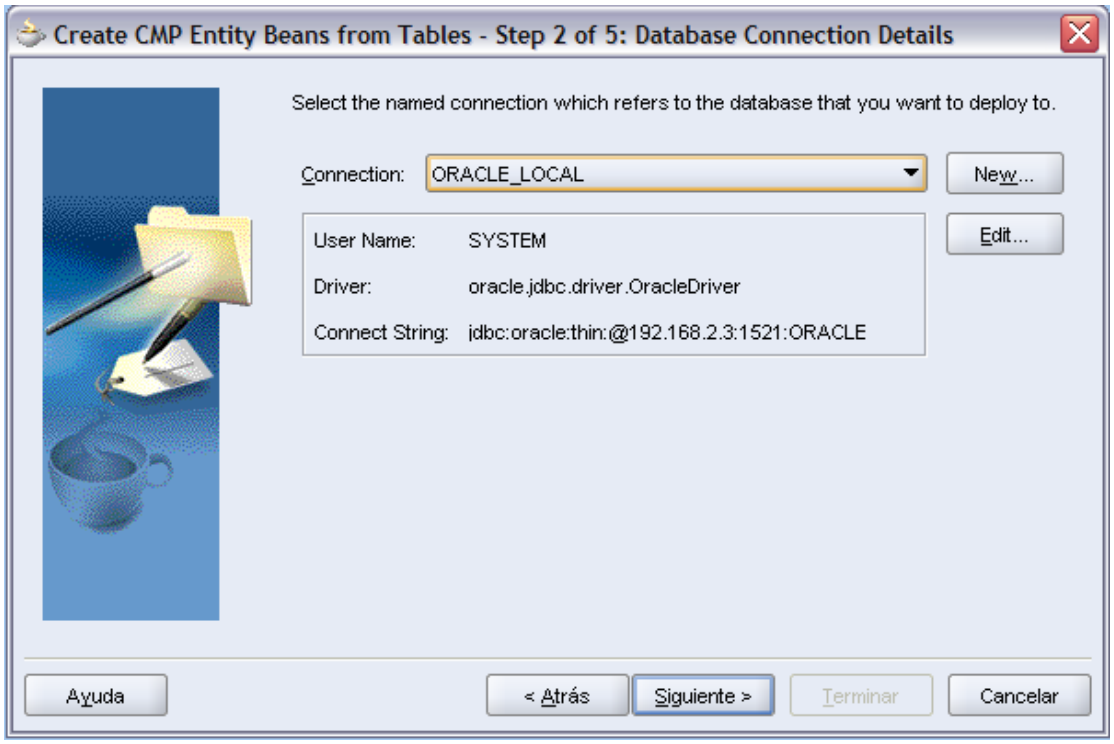
2. In the New Gallery dialog box, expand the Business Tier node in Categories. In the Items list, select **CMP Entity Beans from tables**. Click OK.



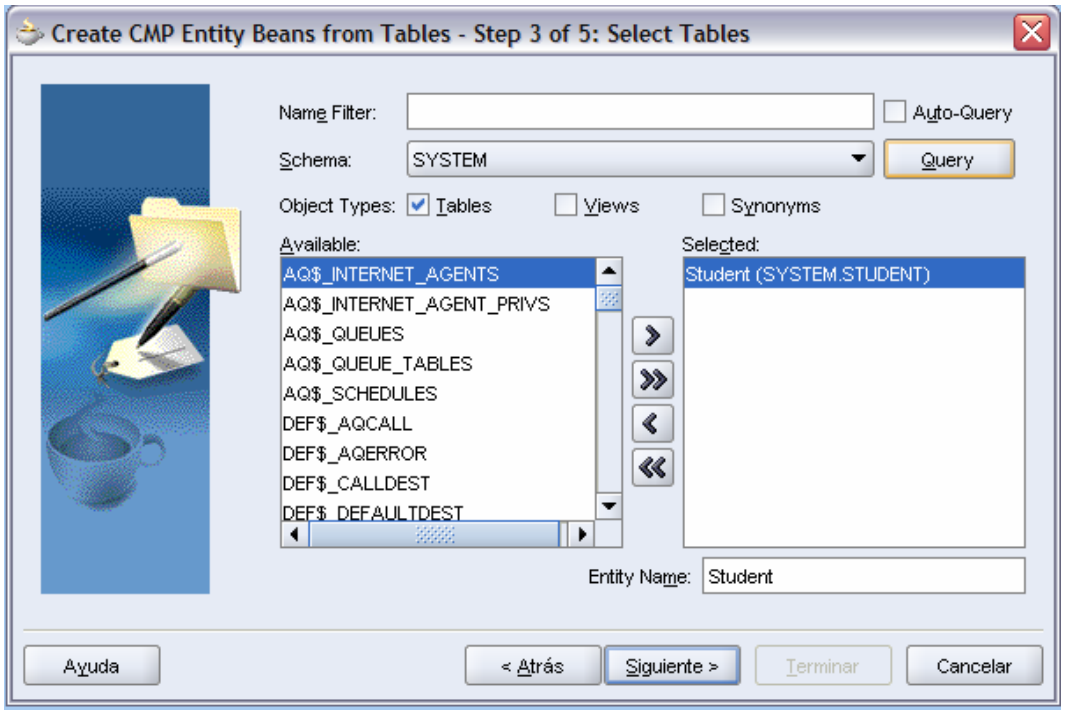
3. Click **Next** on the Welcome page of the "*Create CMP Entity Beans from Tables*" wizard. In Step 1 of 5, select the **Enterprise JavaBeans 3.0 (J2EE 5.0)** option, and then click Next.



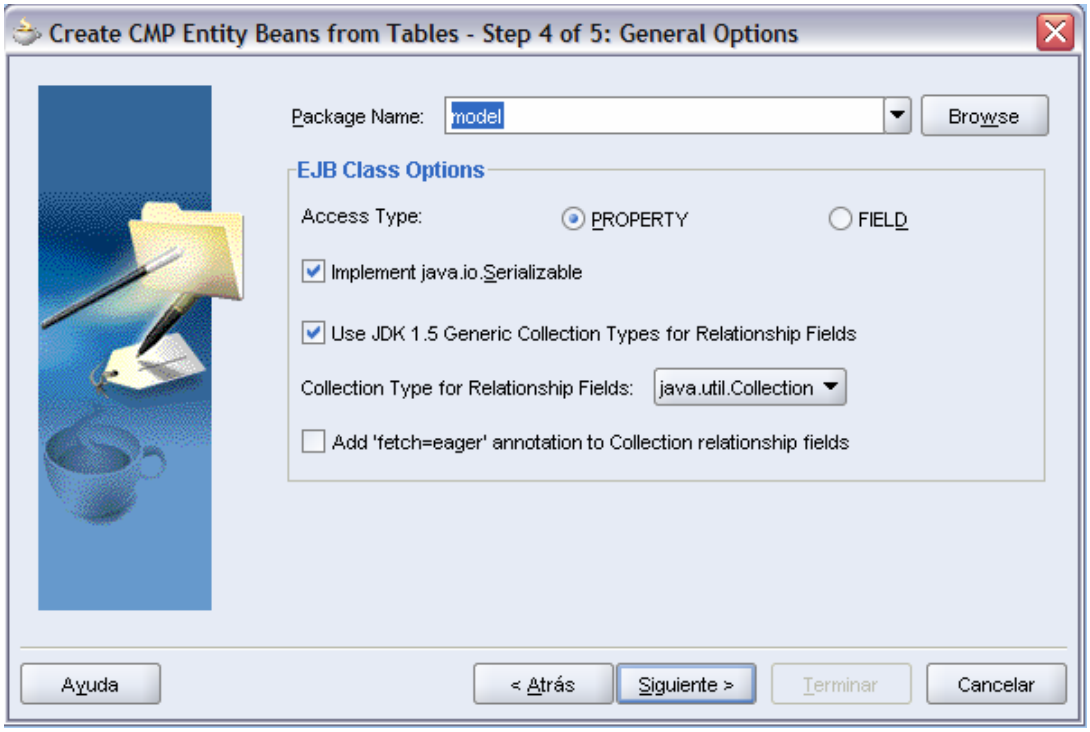
4. In **Step 2** of 5, select the Oracle connection as the connection name.



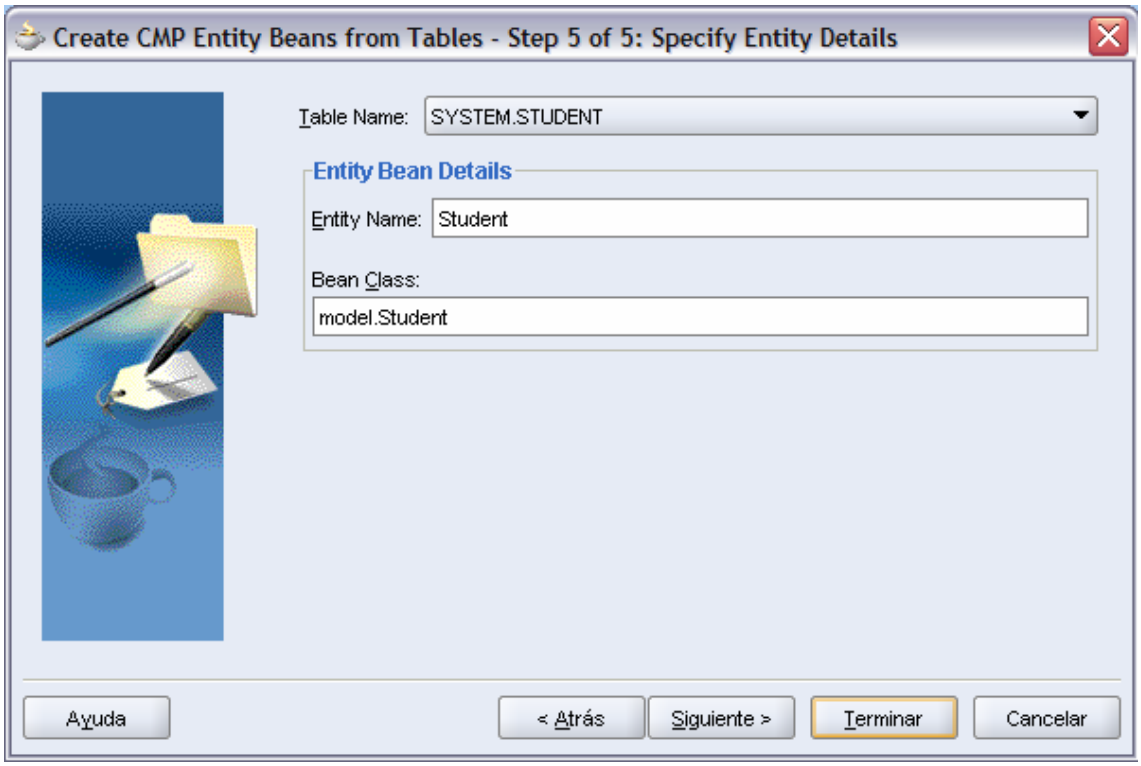
5. In **step 3** of 5, click the **Query button**, and then select the STUDENT table from the Available list and shuttle them to the Selected list. Click Next.



6. In step 4 of 5, enter model as the package name. Click Next.

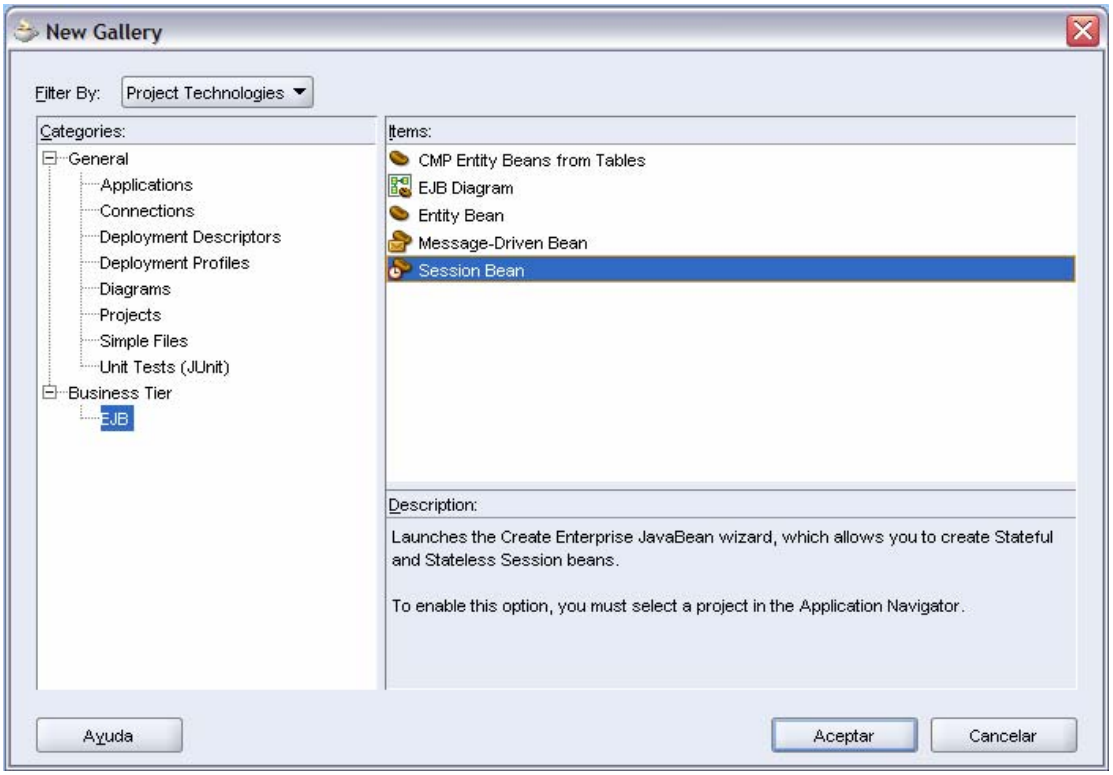


7. Click Next in **step 5** of 5 and then **Finish** to create the entity beans.

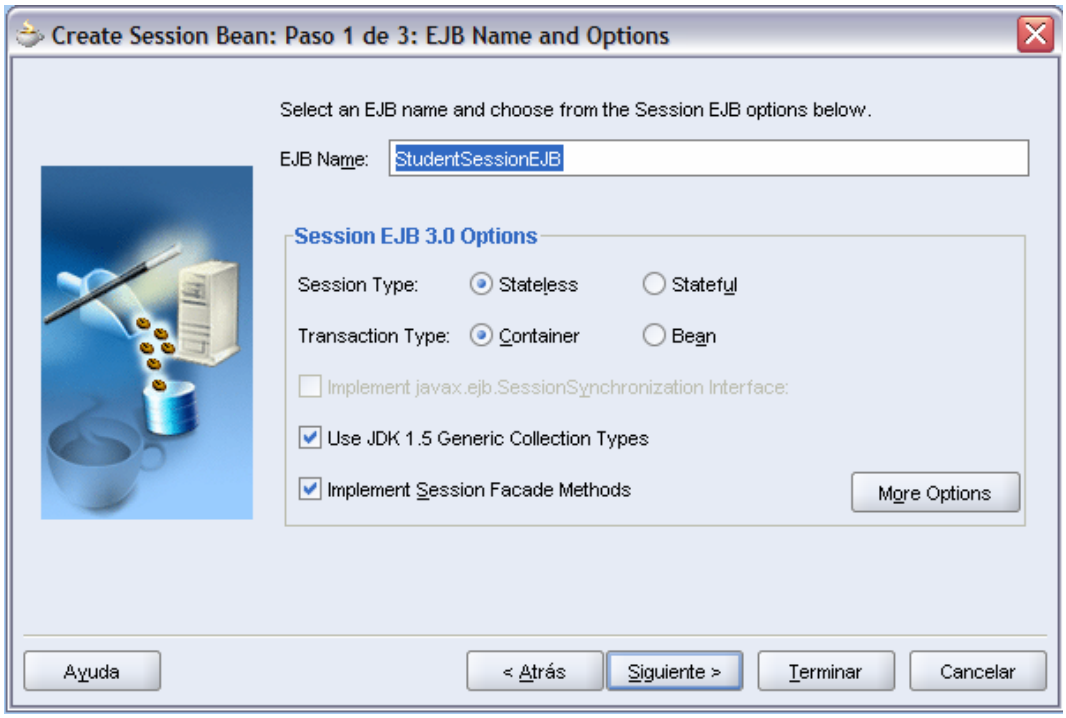


Step 4. Creating the Business Model

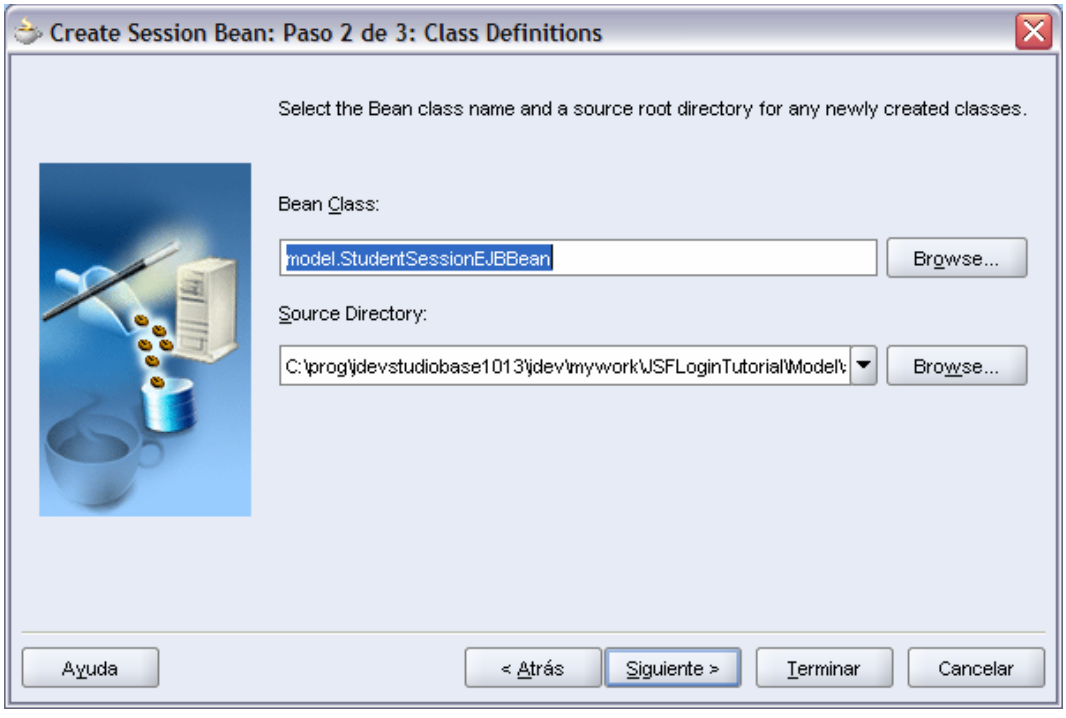
1. Right-click the **JSFLoginTutorial** project node in the Applications navigator and select the **New option** from the context menu. Open the Business Tier category and choose the Session Bean item. Click OK.



2. Click Next on the Welcome page of the Create Enterprise JavaBean wizard. In **step 1** of 3, enter *StudentSessionEJB* as the EJB name. Leave the options unchanged, and then click Next.



3. Leave everything unchanged in steps 2 and 3 and click Finish.



4. Open the *StudentSessionEJB* file in the navigator and add the next method.

```
public boolean checkLogin(String login, String passwd)
          throws NamingException {
      return getEntityManager()
          .createQuery(
                    "select object(o) from Student o where
   ((o.login LIKE :login) AND (o.passwd LIKE :passwd))")
                .setParameter("login", login)
                     .setParameter("passwd",
   passwd).getResultList().isEmpty();
  }
```

```
public boolean checkLogin(String login, String passwd)
        throws NamingException {
        System.out.println(login+passwd);
    return getEntityManager()
        .createQuery(
            "select object(o) from Student o where ((o.login LIKE :login) AND (o.passwd LIKE :passwd))")
                .setParameter("login", login)
                .setParameter("passwd", passwd).getResultList().isEmpty();
}
```

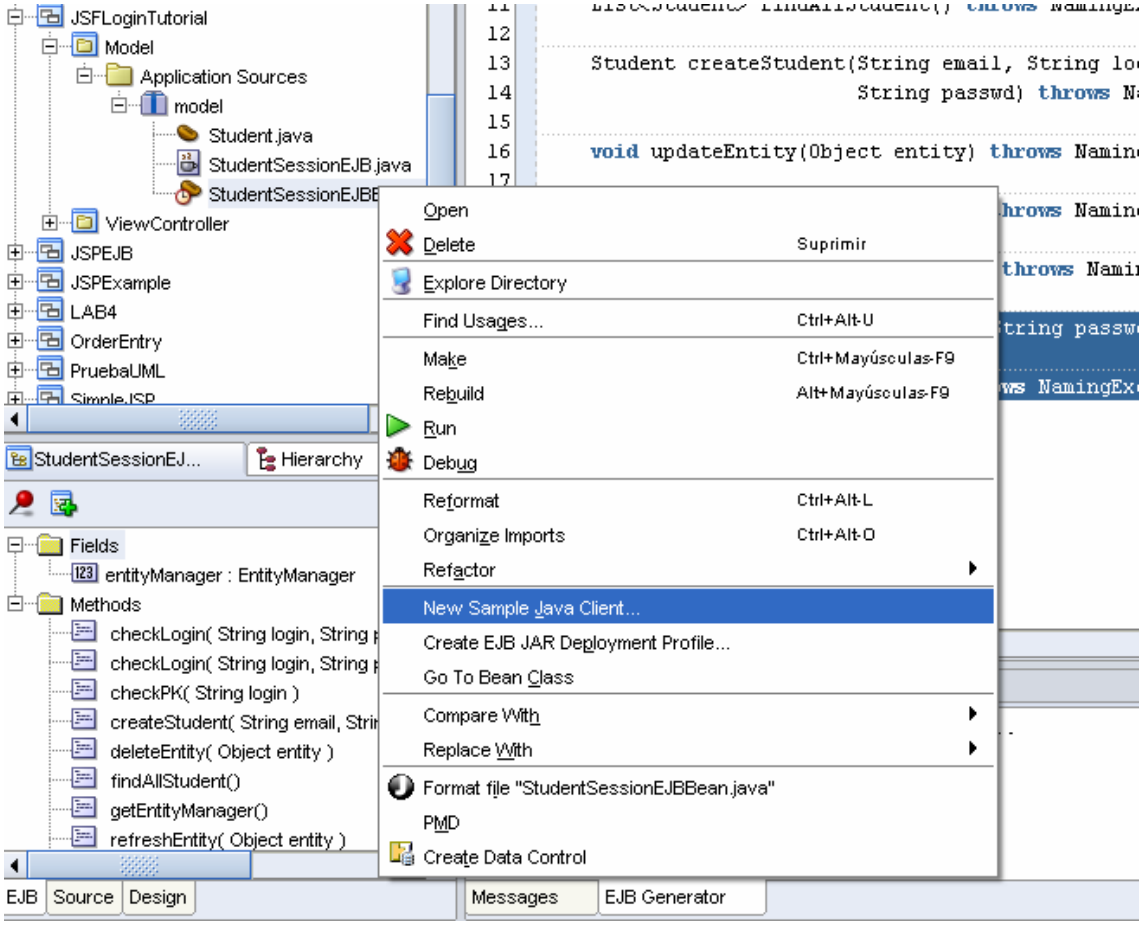
This will query the database to check if the login and password given by the user are in the database.

5. Open the *StudentSessionEJB* interface and add the methods declarations.

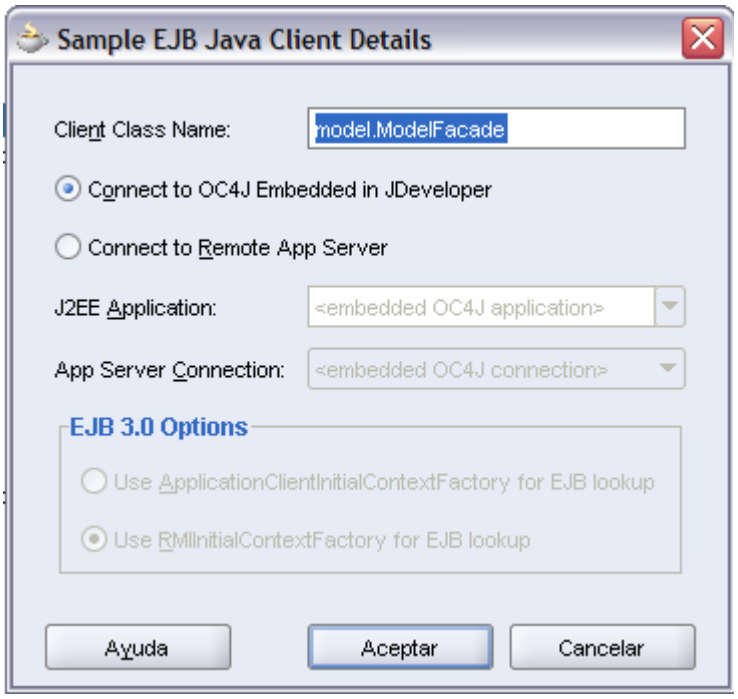
```
 boolean checkLogin(String login, String password) throws
NamingException;
```

```
boolean checkLogin(String login, String password) throws NamingException;
```

6. Right-click in **StudentSessionEJBBean** and click on **New Sample Java Client**.



7. In Client Class name write ***model.ModelFacade*** and click ok.

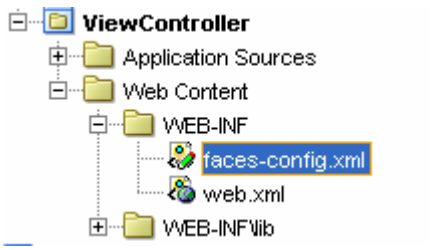


8. Delete the main method and create the next method that is going to check if the login and password are stored in the database.

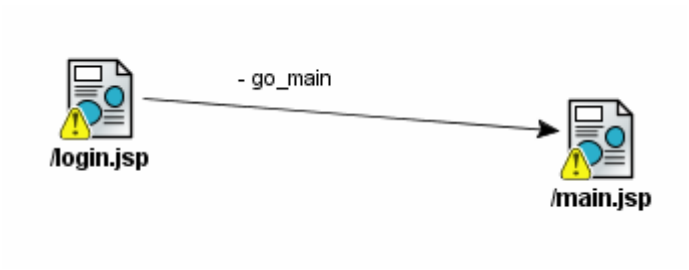
```
public boolean checkLogin(String login, String password) {
      boolean check = true;

      try {
          final Context context = getInitialContext();
          StudentFacade studentFacade =
              (StudentFacade) context.lookup("StudentFacade");

          check = studentFacade.checkLogin(login, password);

          // true empty resutls
      } catch (NamingException e) {
          e.printStackTrace();
      }

      return !check;
  }
```

Step 5. Create the Control-Flow Diagram

1. In the application navigator, select the **ViewController** project and in the *WenContent\WEB_INF* folder open the ***faces-config.xml*** file.



2. In the editor, drag and drop a **JSF page** from the component palette. Change the name to ***login.jsp***. Then, drag and drop another JSF page to the diagram and change the name to **main.jsp**. Finally, drag and drop the **JSF Navigation Case** component from the palette and connect the *login.jsp* page to the *main.jsp* page. Change the name to *go_main*.

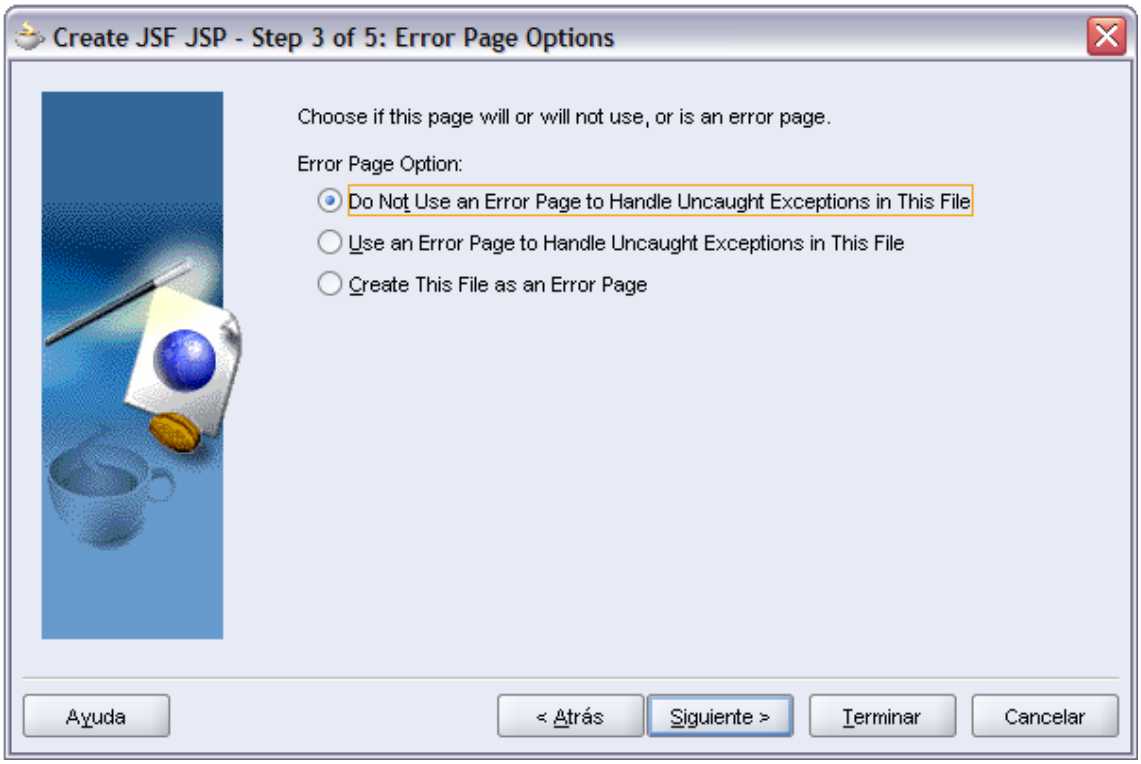


Step 6. Create the JSF pages.

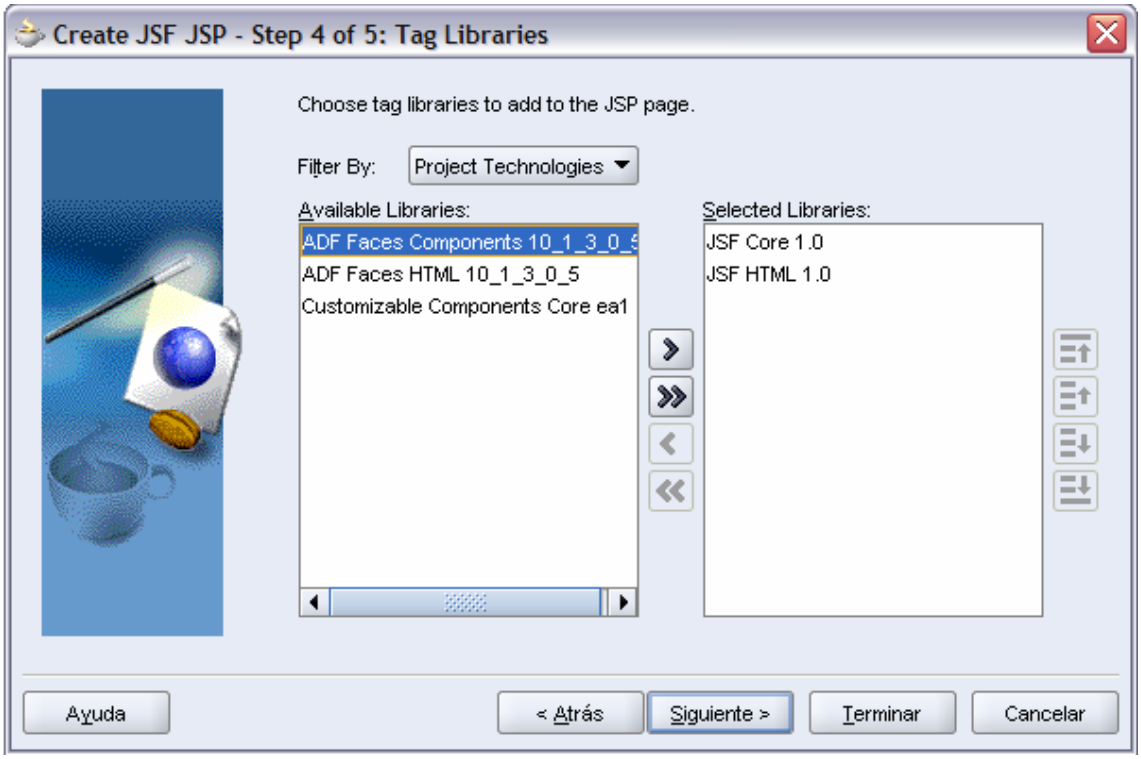
1. Double-click in the *login.jsp* page in the diagram. The **Create JSF JSP Wizard** Welcome screen displays. Click Next to continue. In **step 1**, leave everything unchanged.

2. In **Step 2**, choose A*utomatically Bind Components Using a Newly Created Managed Bea*n.

3. In **Step 3**, Choose not to use error page.



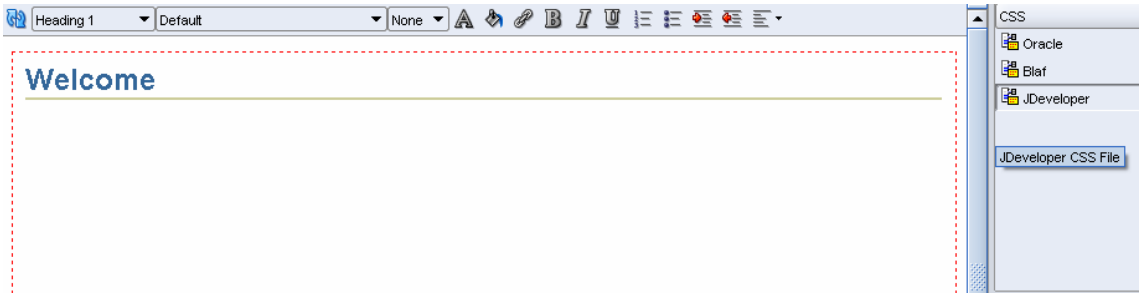
4. In **Step 4**, choose the default libraries, JSF Core and JSF HTML.



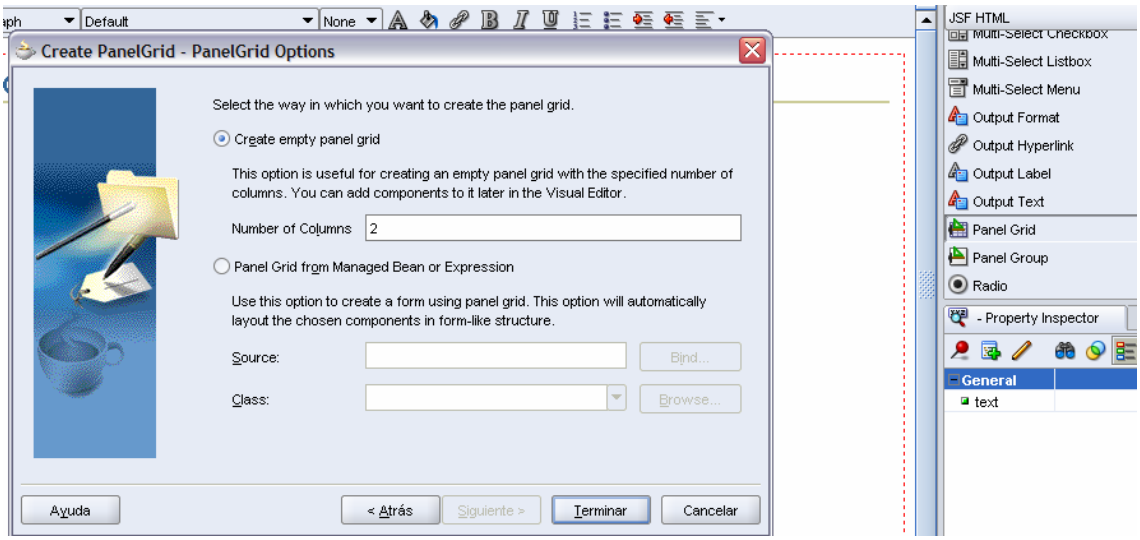
5. In **Step 5**, Choose the page title. Click next and then finish.

Step 7. Edit the JSP page.

1. The JSP editor will appear. In the top of the page enter some text: Welcome. Format the text to H1 by clicking the left-hand dropdown list at the top of the Visual Editor, and choosing Heading 1. Then, apply a CSS style sheet. Select the CSS page in the Components section in the top right of your screen. Then drag the *JDeveloper* style sheet onto your new JSP. You should see an immediate change in the appearance of you page.

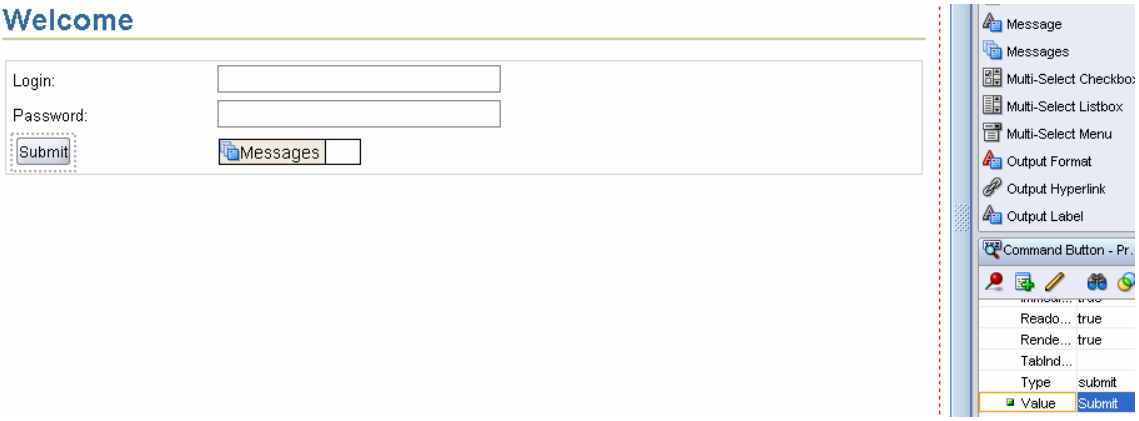


2. In the **Component palette** choose JSF HTML and click on **Panel Grid**. In the new window choose 2 in number of columns and click finish.



3. Now drag and drop the next components one after the other as show in the figure: *OutputLabel, InputText, OutputLabel, InputSecret, CommandButton and Messages.*

4. Change the *outputLabel1* name to **Login** and the *outputLabel2* name to **Password**. Also, change the *commandButton* name to **Submit**, to do this go to the property inspector window and change the value label.



Step 8. Implementing the behavior

1. Double click in the Submit button. The *Login.java* file will open to edit the action. Copy and paste the next code:

```
public String commandButton1_action() {
      boolean check = false;
      String  message = new String();
      String  login   = inputText1.getValue().toString();
      String  passwd  = inputSecret1.getValue().toString();

      if ((login.length() < 4) || (passwd.length() < 4)) {
          message = "Invalid inputs";
      } else {
          ModelFacade check_log = new ModelFacade();

          if (!check_log.checkLogin(login, passwd)) {
              message = "Wrong username or password";
          } else {
              check = true;
          }
      }

      FacesContext.getCurrentInstance().addMessage(null,
              new FacesMessage(message));

      if (check) {
          return "go_main";
      } else {
          return "failure";
      }
  }
```

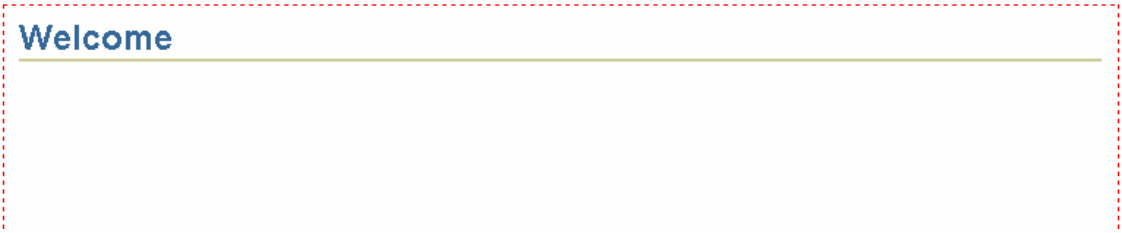
This code will check that the inputs are valid and also will ask the model to check if the username and password are valid.

2. Import the *model.ModelFacade* package.

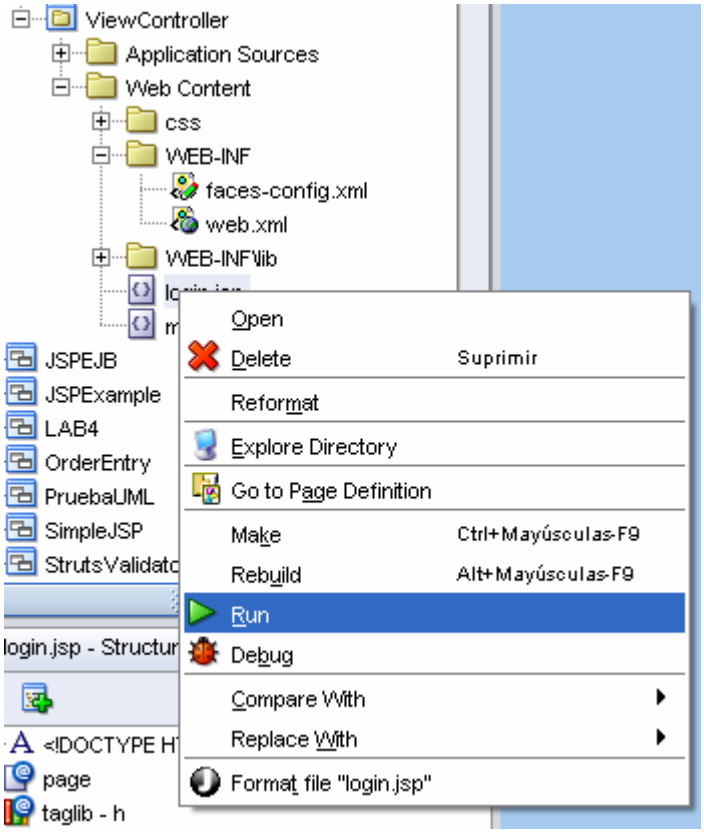
```
public String commandButton1_action() {
    boolean check = false;
    String  message = new String();
    String  login   = inputText1.getValue().toString();
    String  passwd  = inputSecret1.getValue().toString();

    if ((login.length() < 4) || (passwd.length() < 4)) {
        message = "Invalid inputs";
    } else {
        ModelFacade check_log = new ModelFacade();

        if (!check_log.checkLogin(login, passwd)) {
            message = "Wrong username or password";
        } else {
            check = true;
        }
    }

    FacesContext.getCurrentInstance().addMessage(null,
            new FacesMessage(message));

    if (check) {
        return "go_main";
    } else {
        return "failure";
    }
}
```

Step 9. Create the main page and run the application.

1. Double click in *main.jsp* in the JSF navigation flow diagram. Create the JSP page like before and it will open in the editor. Enter some text and apply the style sheet.



2. Right-Click in the *login.jsp* page and then run.



Main Page: