Lesson 01 Demo 06

JSP Action Tags

Objective: To explore various JSP tags in a web application using the Eclipse IDE

Tools required: Eclipse IDE

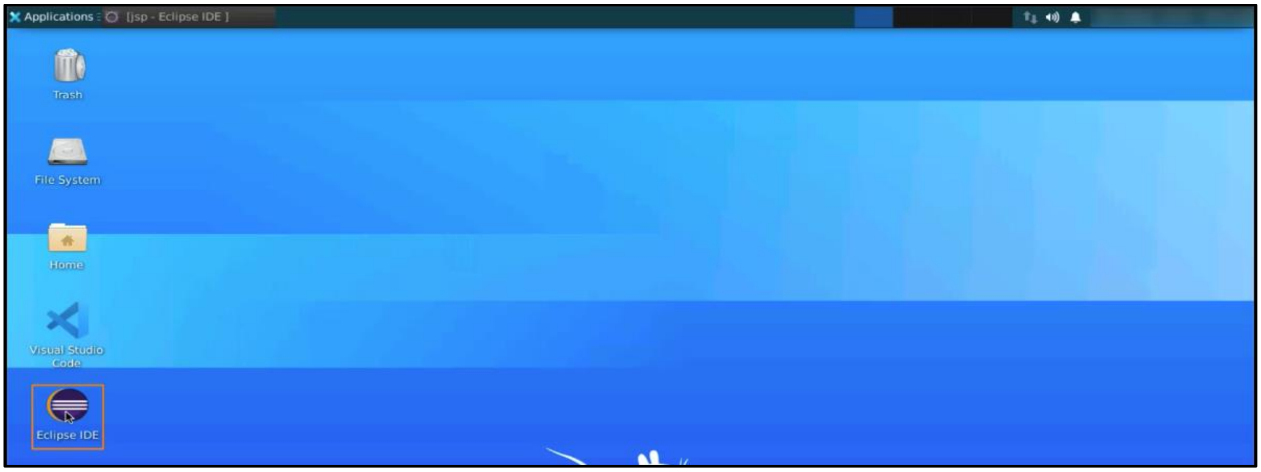
Prerequisites: None

Steps to be followed:

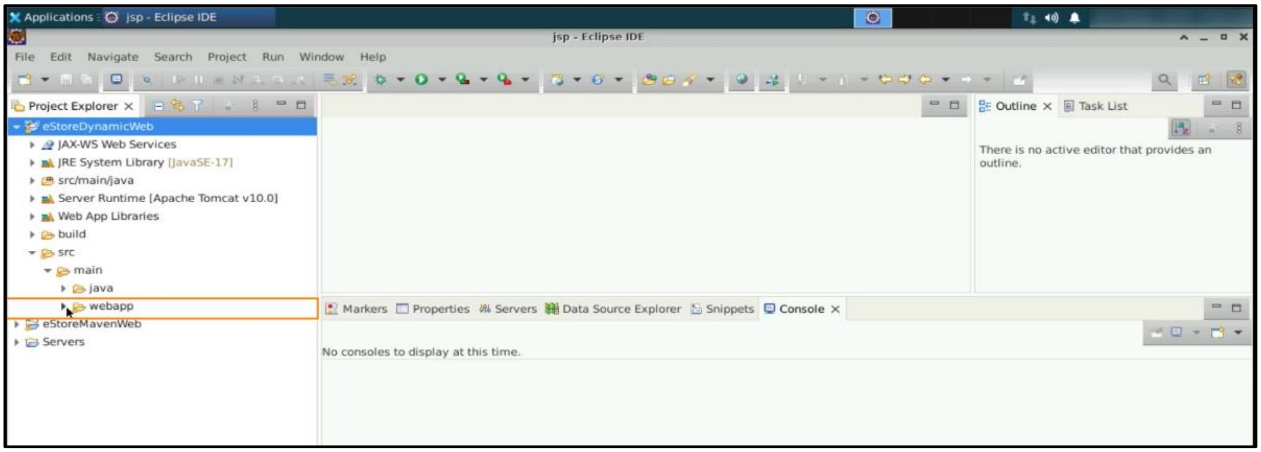
1. Create a new JSP File
2. Display the username on the webpage
3. Add a header to **index.jsp** file
4. Create a new class
5. Create another class

Step 1: Create a new JSP file

1.1 Open the **Eclipse IDE** in your lab



1.2 In the **eStoreDynamicWeb** project, locate and open the **webapp** folder

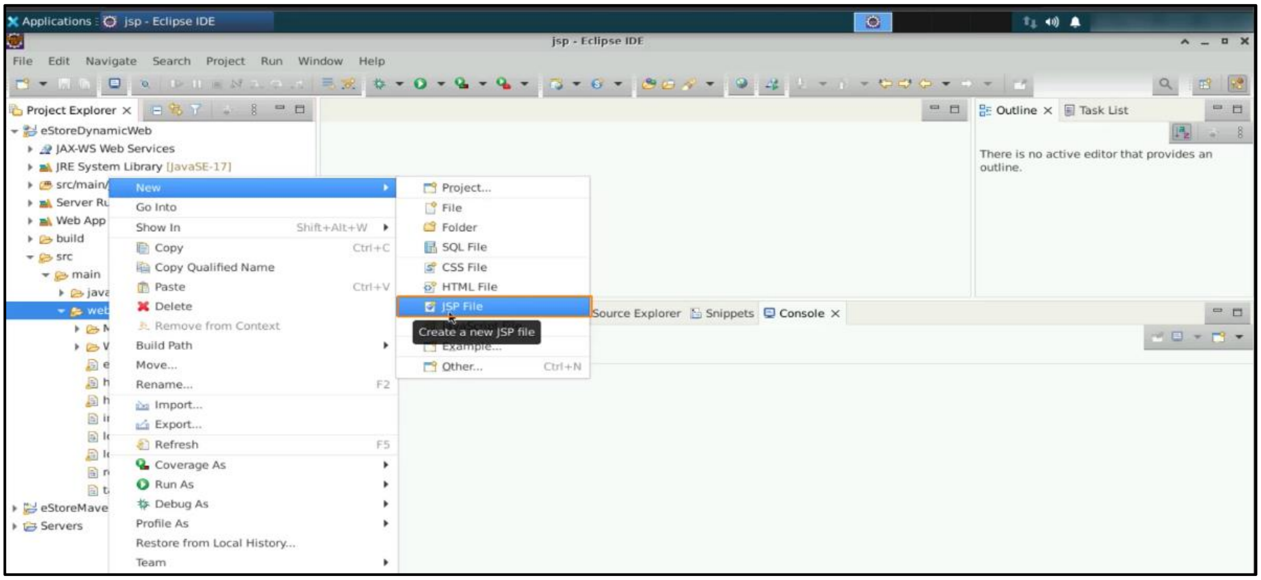


There is no active editor that provides an outline.

No consoles to display at this time.

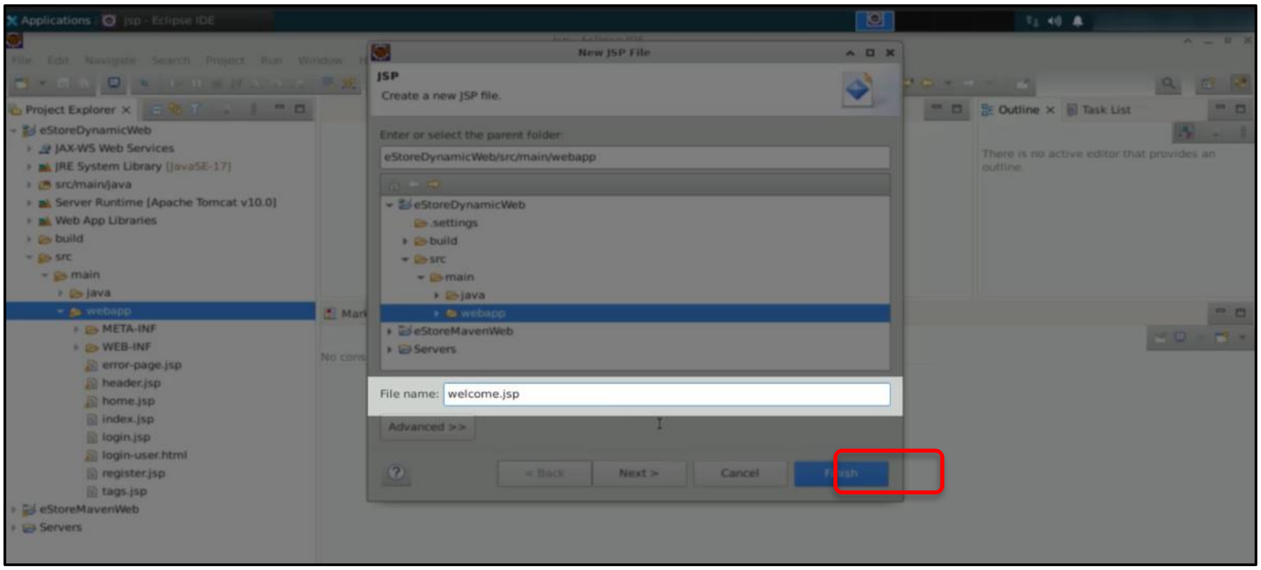
Note: Please refer to the previous demo on how to create the **eStoreDynamicWeb** project

1.3 Right-click on the folder, select **New**, and choose **JSP File**



There is no active editor that provides an outline.

1.4 Name the JSP file as **welcome.jsp** and click on **Finish**



New JSP File

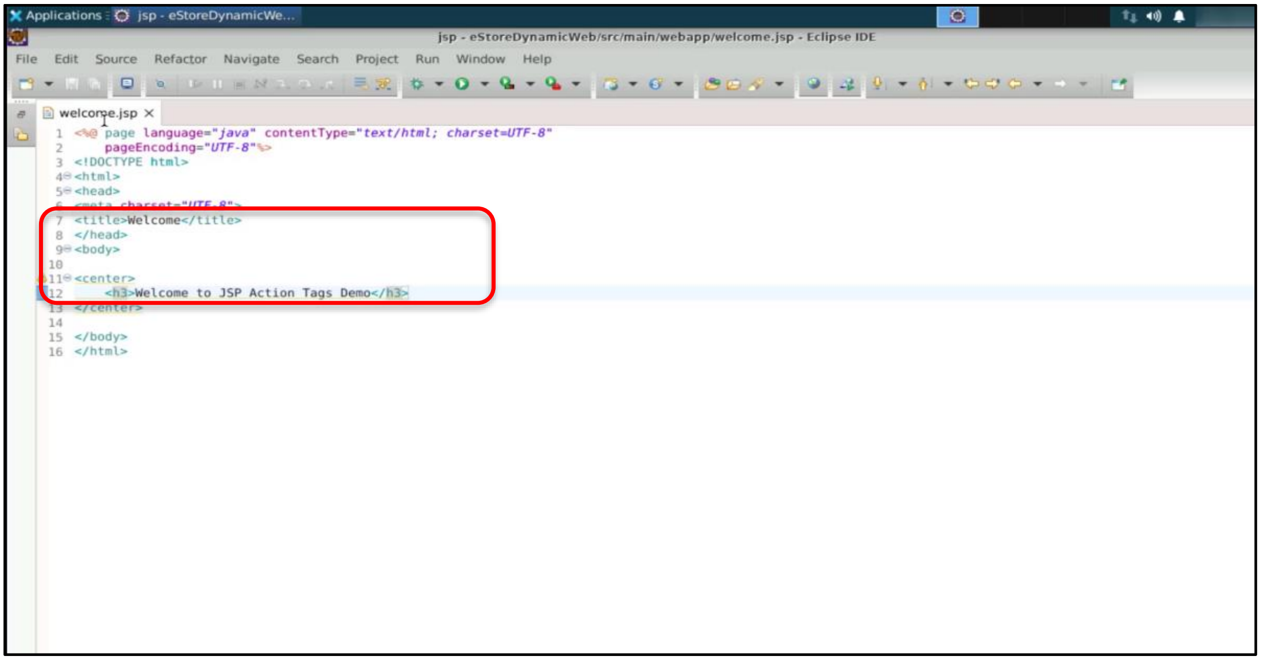
JSP

Create a new JSP file.

Enter or select the parent folder: eStoreDynamicWeb/src/main/webapp

File name: welcome.jsp

1.5 Write the following code from lines 7 to 12 to add a title and header to the newly created **welcome.jsp** file:

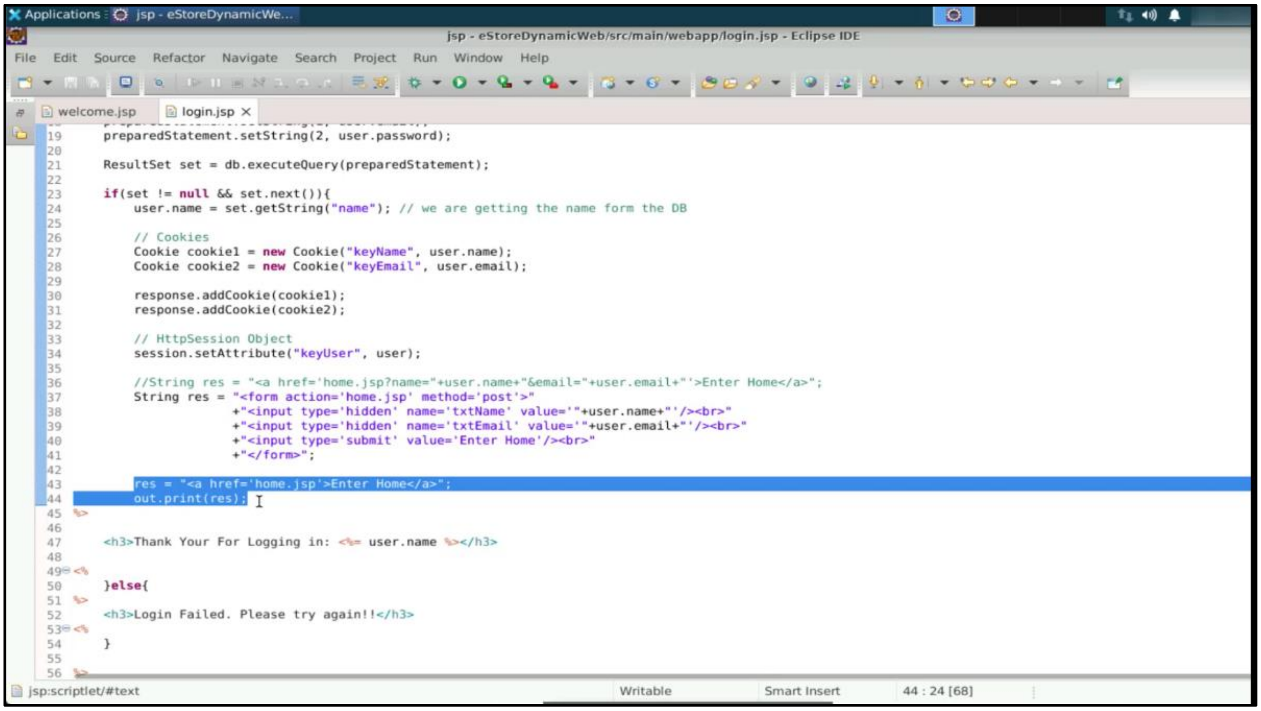


jsp - eStoreDynamicWeb/src/main/webapp/welcome.jsp - Eclipse IDE

welcome.jsp

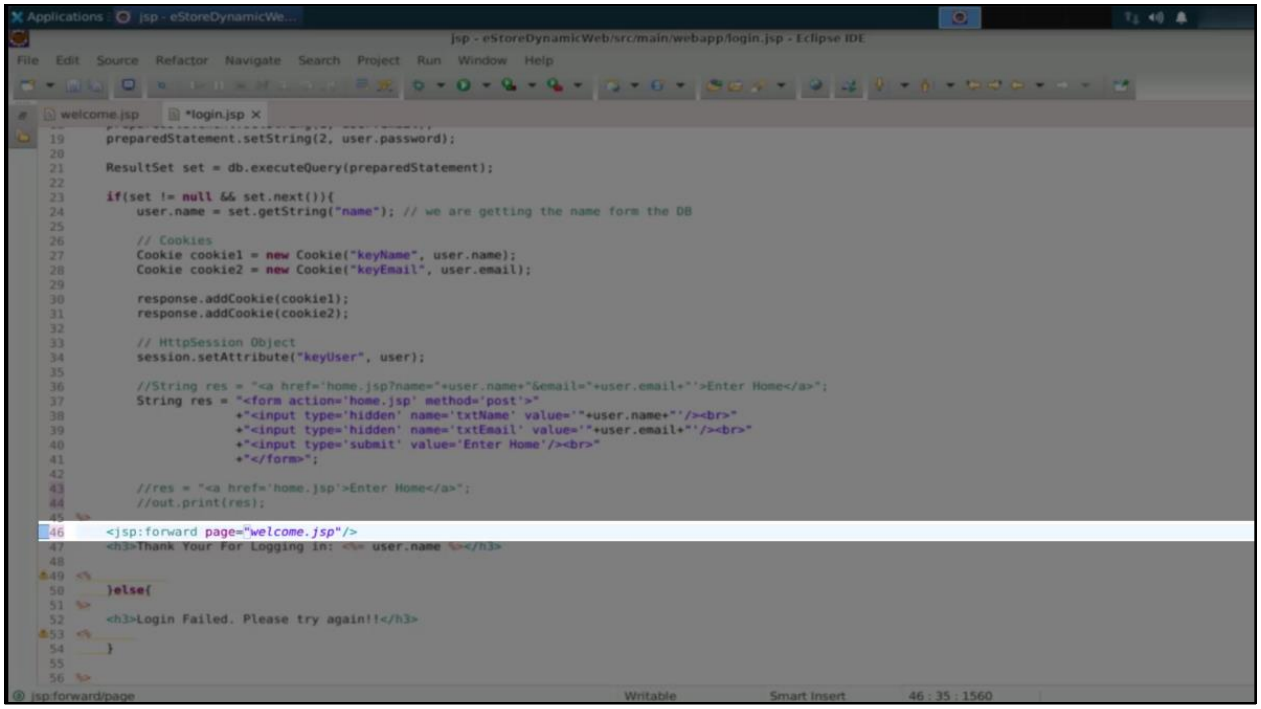
```
1  <%@ page language="java" contentType="text/html; charset=UTF-8"
2      pageEncoding="UTF-8"%>
3  <!DOCTYPE html>
4  <html>
5  <head>
6  <meta charset="UTF-8">
7  <title>Welcome</title>
8  </head>
9  <body>
10
11 <center>
12     <h3>Welcome to JSP Action Tags Demo</h3>
13 </center>
14
15 </body>
16 </html>
```

1.6 Open the **login.jsp** file and comment out the marked code


Applications
jsp - eStoreDynamicWe...
jsp - eStoreDynamicWeb/src/main/webapp/login.jsp - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
welcome.jsp
login.jsp
jsp:scriptlet/#text
Writable
Smart Insert
44 : 24 [68]

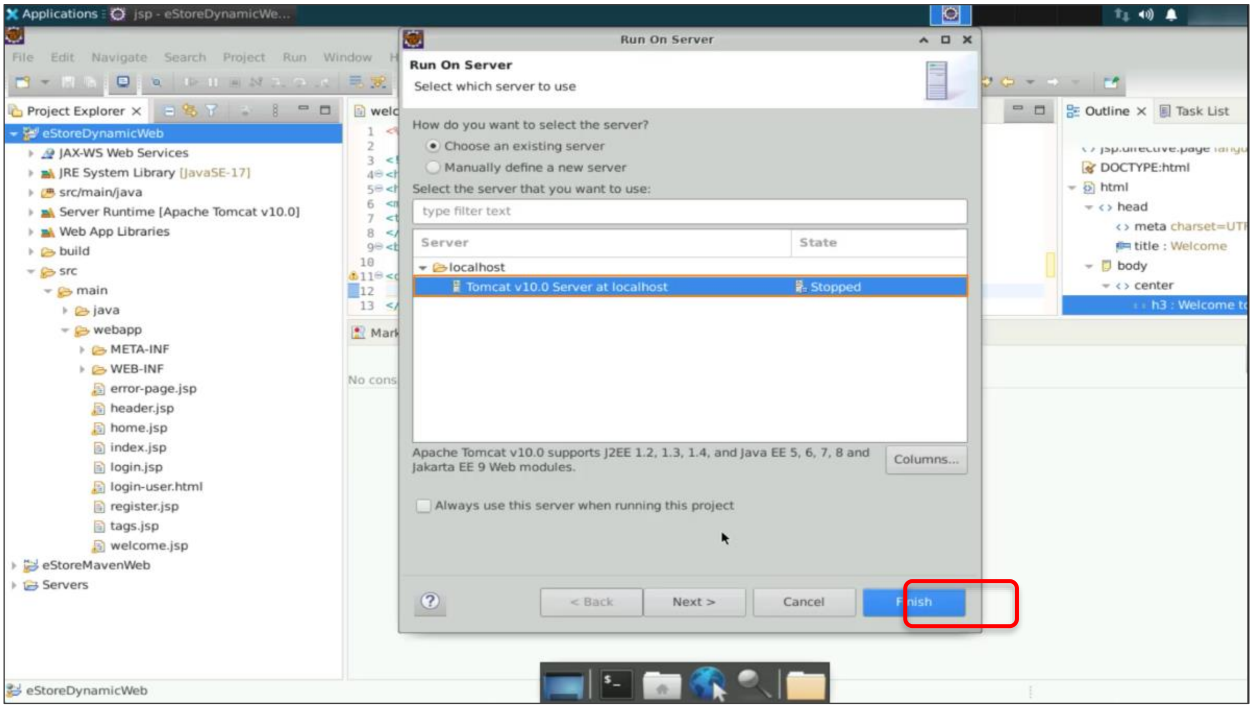
```
19      preparedStatement.setString(2, user.password);
20
21      ResultSet set = db.executeQuery(preparedStatement);
22
23      if(set != null && set.next()){
24          user.name = set.getString("name"); // we are getting the name form the DB
25
26          // Cookies
27          Cookie cookie1 = new Cookie("keyName", user.name);
28          Cookie cookie2 = new Cookie("keyEmail", user.email);
29
30          response.addCookie(cookie1);
31          response.addCookie(cookie2);
32
33          // HttpSession Object
34          session.setAttribute("keyUser", user);
35
36          //String res = "<a href='home.jsp?name="+user.name+"&email="+user.email+"'>Enter Home</a>";
37          String res = "<form action='home.jsp' method='post'>"
38                      +"<input type='hidden' name='txtName' value='"+user.name+"'/><br>"
39                      +"<input type='hidden' name='txtEmail' value='"+user.email+"'/><br>"
40                      +"<input type='submit' value='Enter Home'/><br>"
41                      +"</form>";
42
43          res = "<a href='home.jsp'>Enter Home</a>";
44          out.print(res);
45  %>
46
47      <h3>Thank Your For Logging in: <%= user.name %></h3>
48
49  <%
50      }else{
51  %>
52      <h3>Login Failed. Please try again!!</h3>
53  <%
54      }
55
56  %>
```

1.7 Add the following code (line 46) to forward the request to the **welcome.jsp** file


Applications
jsp - eStoreDynamicWe...
jsp - eStoreDynamicWeb/src/main/webapp/login.jsp - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
welcome.jsp
*login.jsp
jsp:forward/page
Writable
Smart Insert
46 : 35 : 1560

```
19      preparedStatement.setString(2, user.password);
20
21      ResultSet set = db.executeQuery(preparedStatement);
22
23      if(set != null && set.next()){
24          user.name = set.getString("name"); // we are getting the name form the DB
25
26          // Cookies
27          Cookie cookie1 = new Cookie("keyName", user.name);
28          Cookie cookie2 = new Cookie("keyEmail", user.email);
29
30          response.addCookie(cookie1);
31          response.addCookie(cookie2);
32
33          // HttpSession Object
34          session.setAttribute("keyUser", user);
35
36          //String res = "<a href='home.jsp?name="+user.name+"&email="+user.email+"'>Enter Home</a>";
37          String res = "<form action='home.jsp' method='post'>"
38                      +"<input type='hidden' name='txtName' value='"+user.name+"'/><br>"
39                      +"<input type='hidden' name='txtEmail' value='"+user.email+"'/><br>"
40                      +"<input type='submit' value='Enter Home'/><br>"
41                      +"</form>";
42
43          //res = "<a href='home.jsp'>Enter Home</a>";
44          //out.print(res);
45  %>
46      <jsp:forward page="welcome.jsp"/>
47      <h3>Thank Your For Logging in: <%= user.name %></h3>
48
49  <%
50      }else{
51  %>
52      <h3>Login Failed. Please try again!!</h3>
53  <%
54      }
55
56  %>
```

1.8 Select the appropriate server and click **Finish** to run the project



Run On Server

Select which server to use

How do you want to select the server?

● Choose an existing server

○ Manually define a new server

Select the server that you want to use:

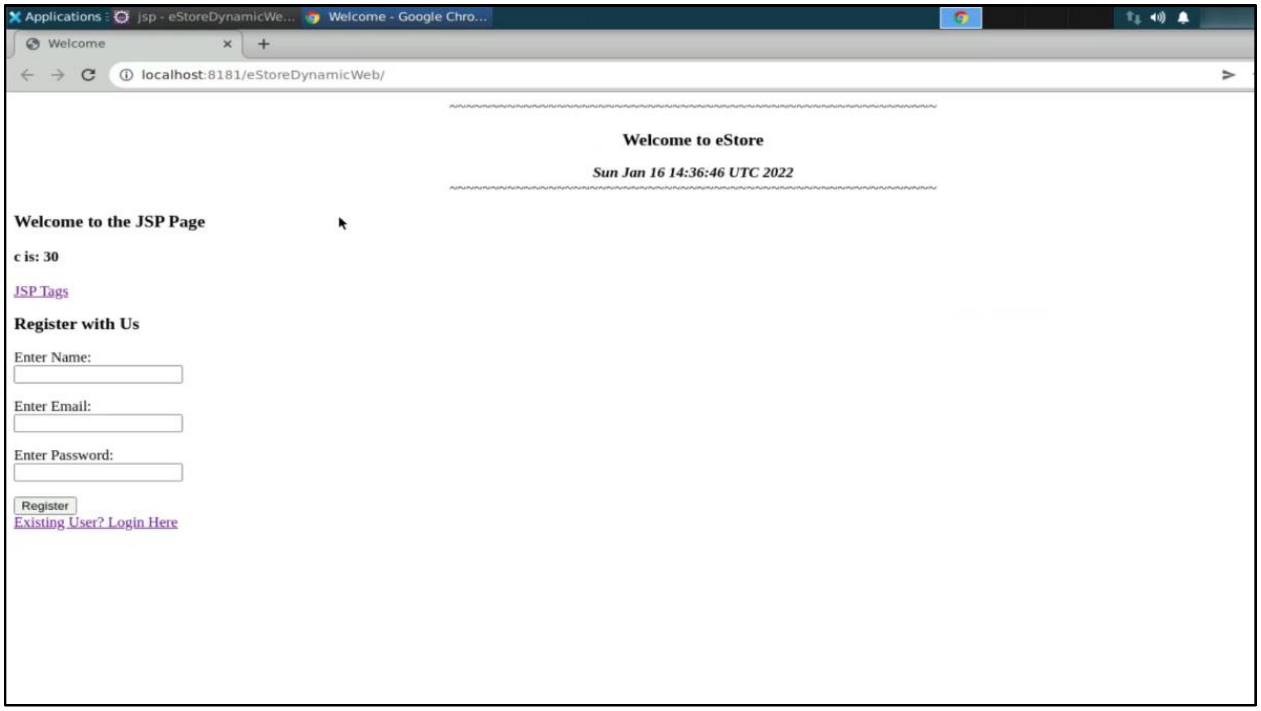
type filter text

Server	State
localhost	
Tomcat v10.0 Server at localhost	Stopped

Apache Tomcat v10.0 supports J2EE 1.2, 1.3, 1.4, and Java EE 5, 6, 7, 8 and Jakarta EE 9 Web modules.

☐ Always use this server when running this project

The following output can be seen:



Welcome to eStore

Sun Jan 16 14:36:46 UTC 2022

Welcome to the JSP Page

c is: 30

JSP Tags

Register with Us

Enter Name:

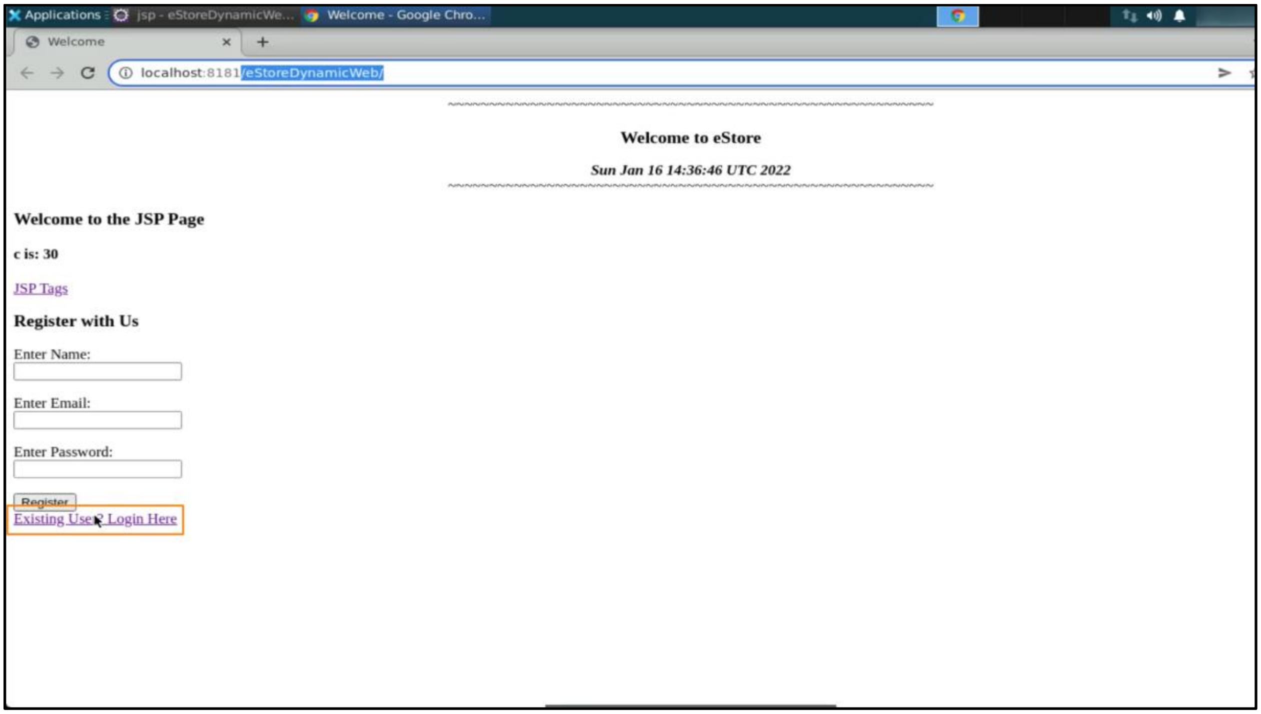
Enter Email:

Enter Password:

Register

Existing User? Login Here

1.9 Click on the **JSP Tags** link in the browser



Welcome to eStore

Sun Jan 16 14:36:46 UTC 2022

Welcome to the JSP Page

c is: 30

JSP Tags

Register with Us

Enter Name:

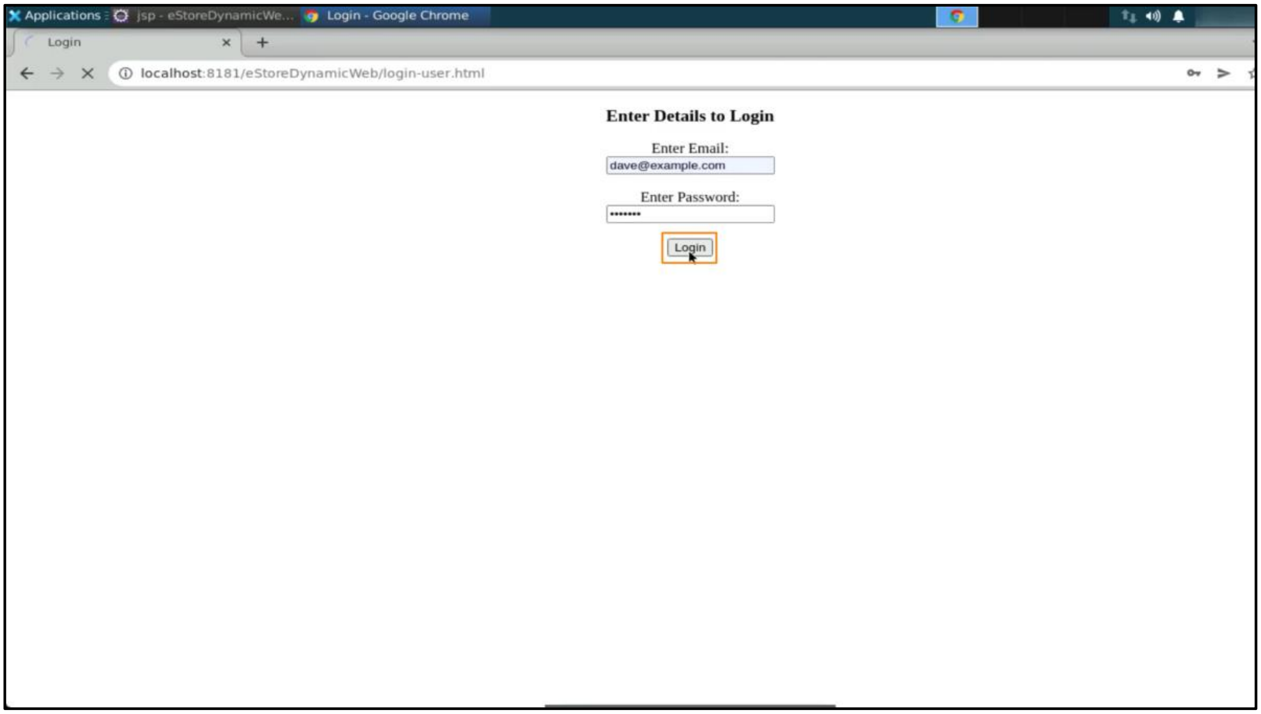
Enter Email:

Enter Password:

Register

Existing User? Login Here

1.10 Enter the login credentials and click **Login**



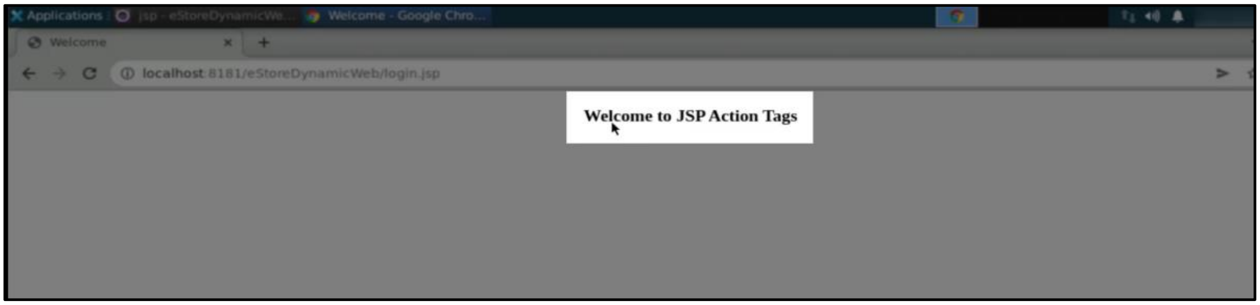
localhost:8181/eStoreDynamicWeb/login-user.html

Enter Details to Login

Enter Email: dave@example.com

Enter Password: •••••••

1.11 Verify that the output is displayed correctly in the browser

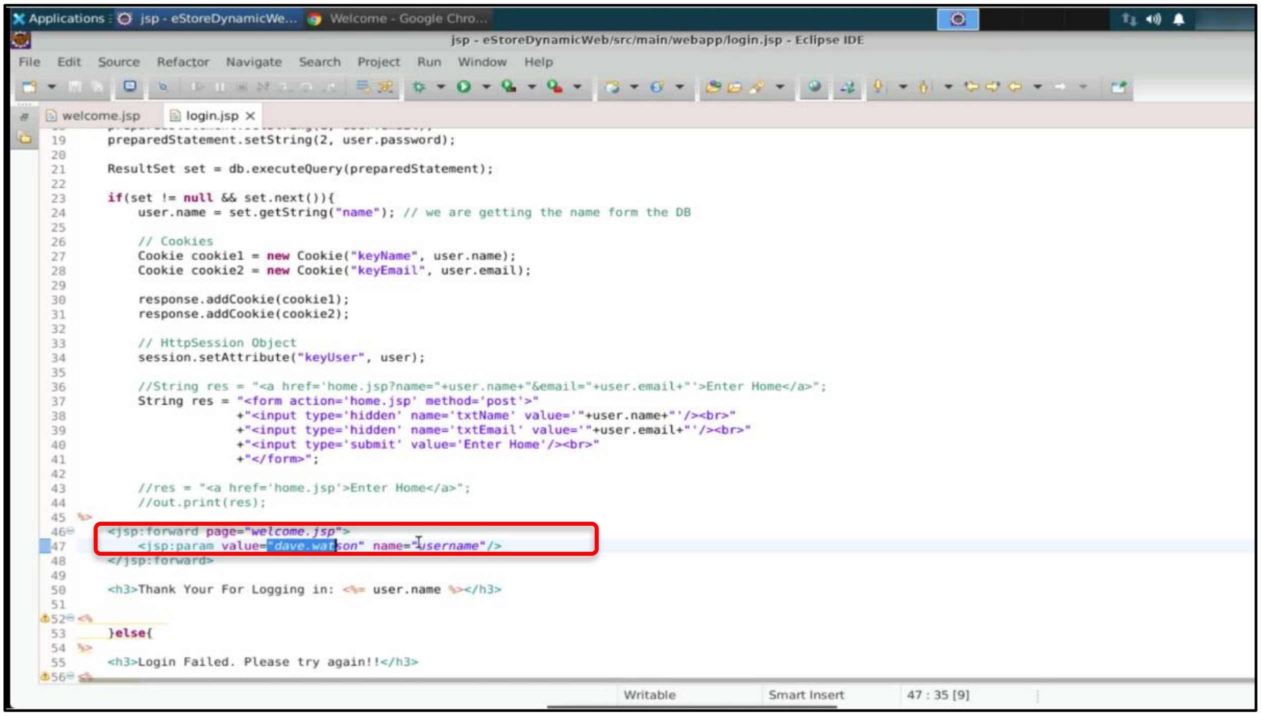


localhost:8181/eStoreDynamicWeb/login.jsp

Welcome to JSP Action Tags

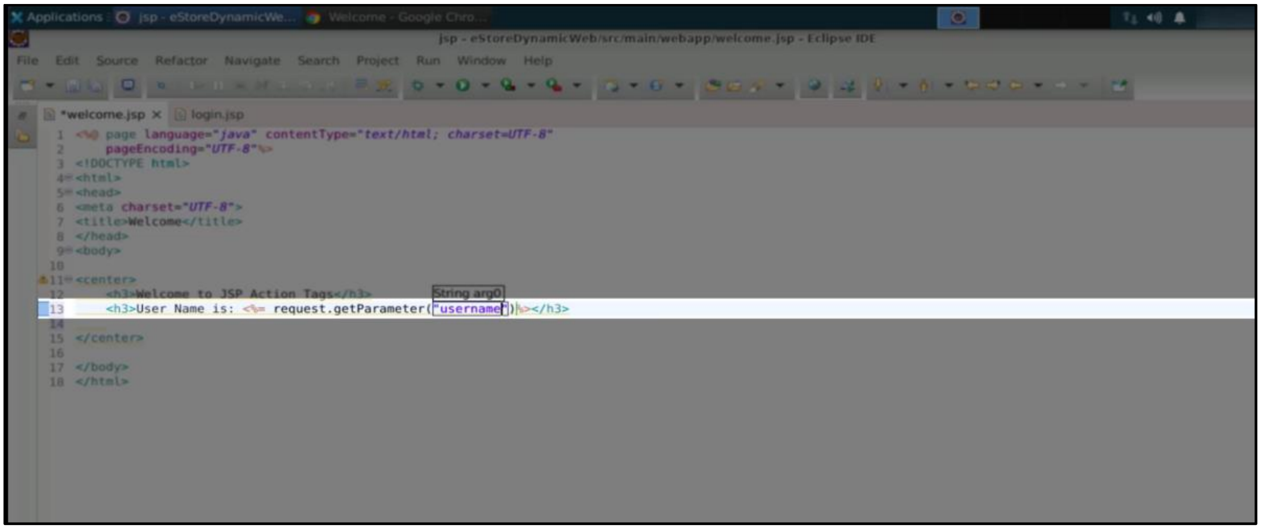
Step 2: Display the username on the webpage

2.1 Write the following lines of code (lines 46 and 47) in the **login.jsp** file to pass the value and username with the forward request:


Applications
jsp - eStoreDynamicWe...
Welcome - Google Chro...
jsp - eStoreDynamicWeb/src/main/webapp/login.jsp - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
welcome.jsp
login.jsp
Writable
Smart Insert
47 : 35 [9]

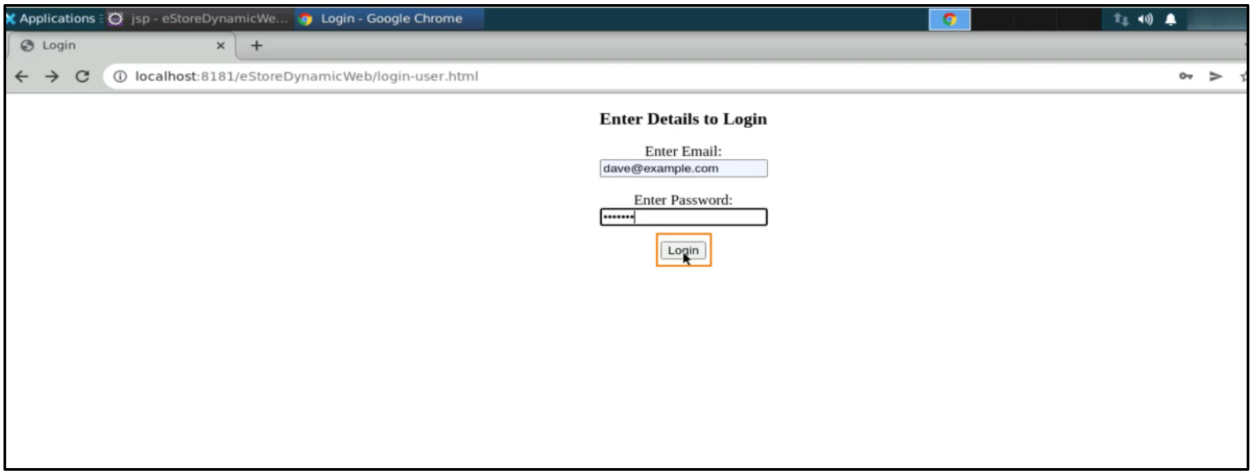
```
    preparedStatement.setString(2, user.password);

    ResultSet set = db.executeQuery(preparedStatement);

    if(set != null && set.next()){
        user.name = set.getString("name"); // we are getting the name form the DB

        // Cookies
        Cookie cookie1 = new Cookie("keyName", user.name);
        Cookie cookie2 = new Cookie("keyEmail", user.email);

        response.addCookie(cookie1);
        response.addCookie(cookie2);

        // HttpSession Object
        session.setAttribute("keyUser", user);

        //String res = "<a href='home.jsp?name="+user.name+"&email="+user.email+"'>Enter Home</a>";
        String res = "<form action='home.jsp' method='post'>"
                    +"<input type='hidden' name='txtName' value='"+user.name+"'/><br>"
                    +"<input type='hidden' name='txtEmail' value='"+user.email+"'/><br>"
                    +"<input type='submit' value='Enter Home'/><br>"
                    +"</form>";

        //res = "<a href='home.jsp'>Enter Home</a>";
        //out.print(res);
%>
    <jsp:forward page="welcome.jsp">
        <jsp:param value="dave.watson" name="username"/>
    </jsp:forward>

    <h3>Thank Your For Logging in: <%= user.name %></h3>

<%
    }else{
%>
    <h3>Login Failed. Please try again!!</h3>
<%
```

2.2 Go to the **welcome.jsp** page and add an h3 tag to display the username at line 13


Applications
jsp - eStoreDynamicWe...
Welcome - Google Chro...
jsp - eStoreDynamicWeb/src/main/webapp/welcome.jsp - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
*welcome.jsp
login.jsp
String arg0

```
1  <%@ page language="java" contentType="text/html; charset=UTF-8"
2      pageEncoding="UTF-8"%>
3  <!DOCTYPE html>
4  <html>
5  <head>
6  <meta charset="UTF-8">
7  <title>Welcome</title>
8  </head>
9  <body>
10
11 <center>
12     <h3>Welcome to JSP Action Tags</h3>
13     <h3>User Name is: <%= request.getParameter("username")%></h3>
14
15 </center>
16
17 </body>
18 </html>
```

2.3 Go to the login page in the browser and refresh it. Enter the credentials and click on **Login**

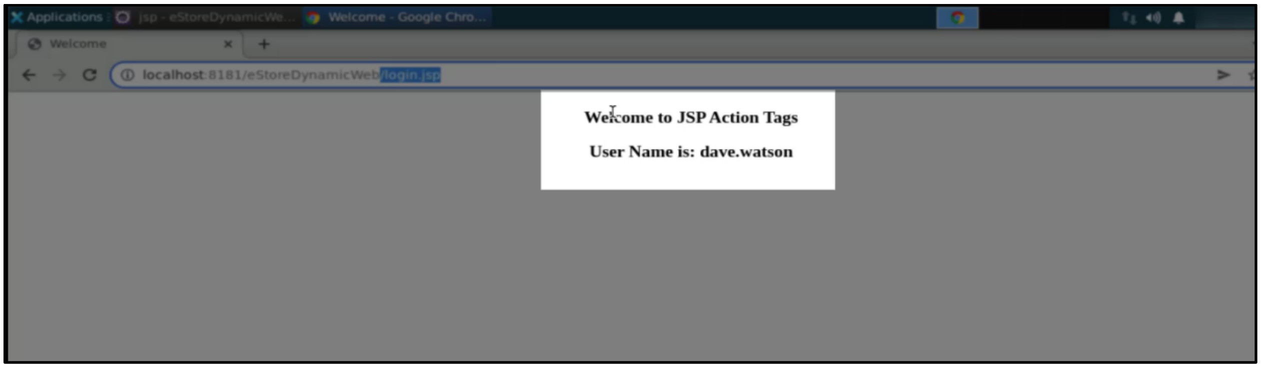


Enter Details to Login

Enter Email:
dave@example.com

Enter Password:
•••••••

2.4 Verify that the output is displayed correctly on the browser, showing the personalized welcome message with the username

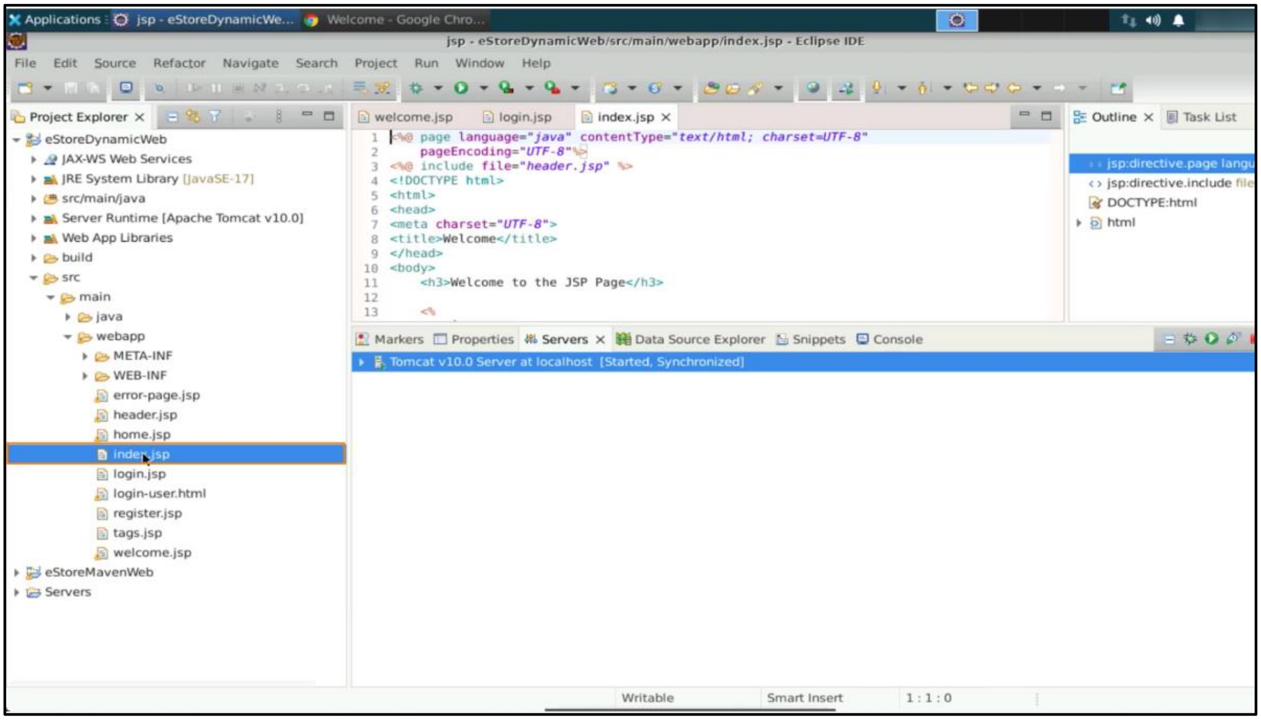


Welcome to JSP Action Tags

User Name is: dave.watson

Step 3: Add a header to index.jsp file

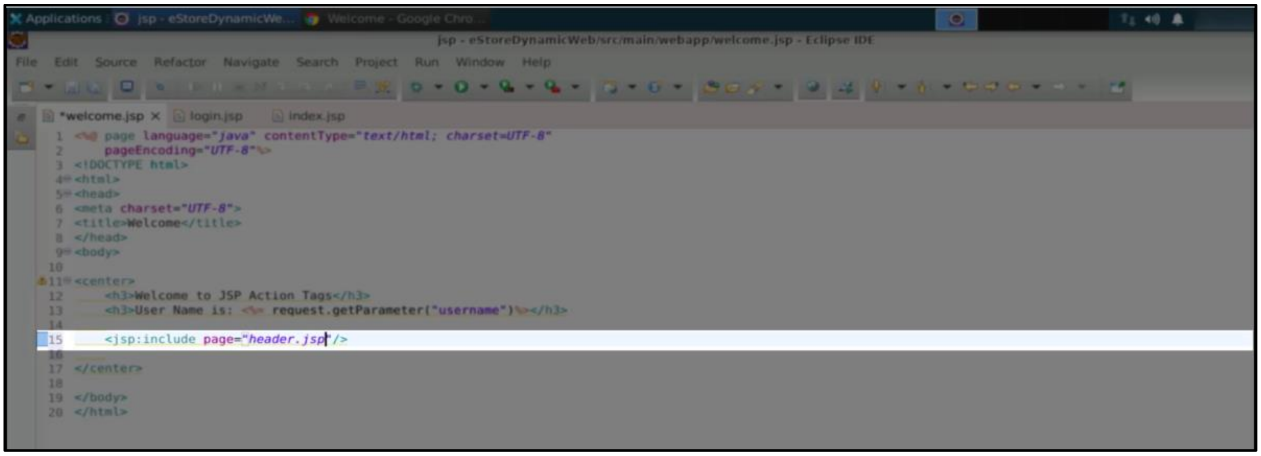
3.1 Open the **index.jsp** page under the **webapp** folder



```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<%@ include file="header.jsp" %>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Welcome</title>
</head>
<body>
    <h3>Welcome to the JSP Page</h3>

    <%
```

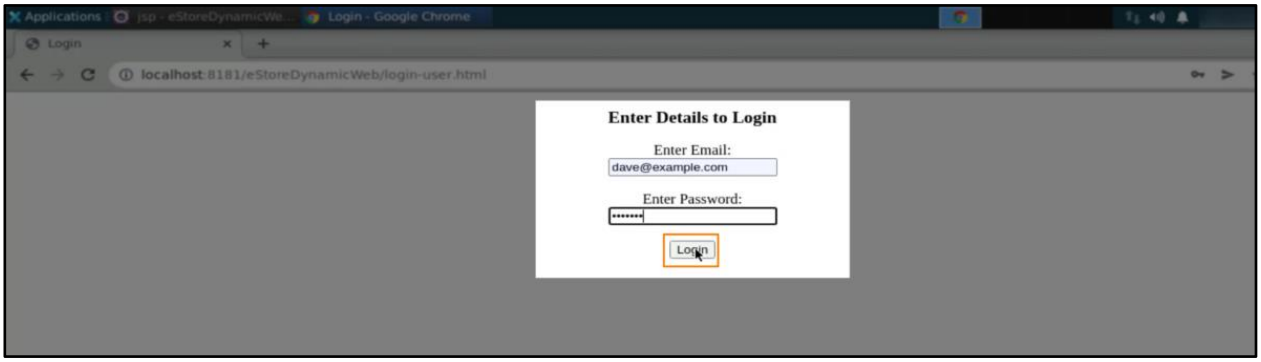
Tomcat v10.0 Server at localhost [Started, Synchronized]

3.2 Go to the **welcome.jsp** file and add the code at line 15 to include the **header.jsp** file data on the webpage


jsp - eStoreDynamicWeb/src/main/webapp/welcome.jsp - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
*welcome.jsp
login.jsp
index.jsp

```
1  <%@ page language="java" contentType="text/html; charset=UTF-8"
2      pageEncoding="UTF-8"%>
3  <!DOCTYPE html>
4  <html>
5  <head>
6  <meta charset="UTF-8">
7  <title>Welcome</title>
8  </head>
9  <body>
10
11 <center>
12     <h3>Welcome to JSP Action Tags</h3>
13     <h3>User Name is: <%= request.getParameter("username")%></h3>
14
15     <jsp:include page="header.jsp"/>
16
17 </center>
18
19 </body>
20 </html>
```

3.3 Go to the login page in the browser and refresh it. Enter the credentials and click on **Login**



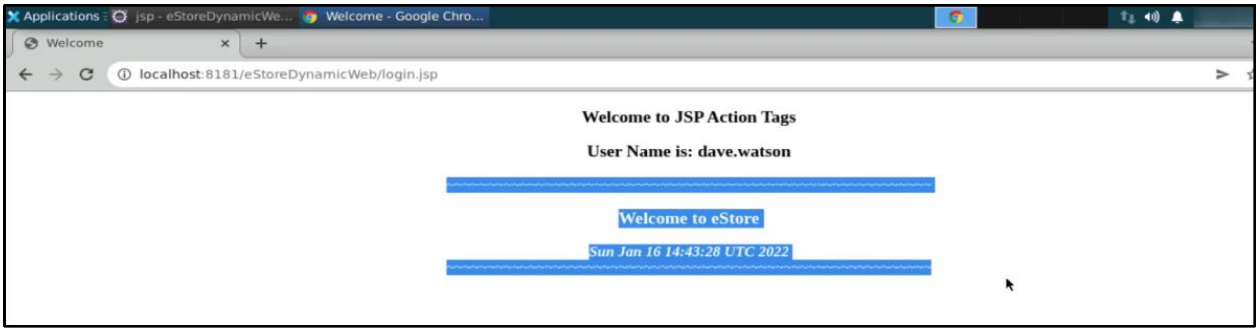
Enter Details to Login

Enter Email:
dave@example.com

Enter Password:
•••••••

Login

3.4 Verify that the output is displayed correctly on the browser, showing the included header information on the webpage



Welcome to JSP Action Tags

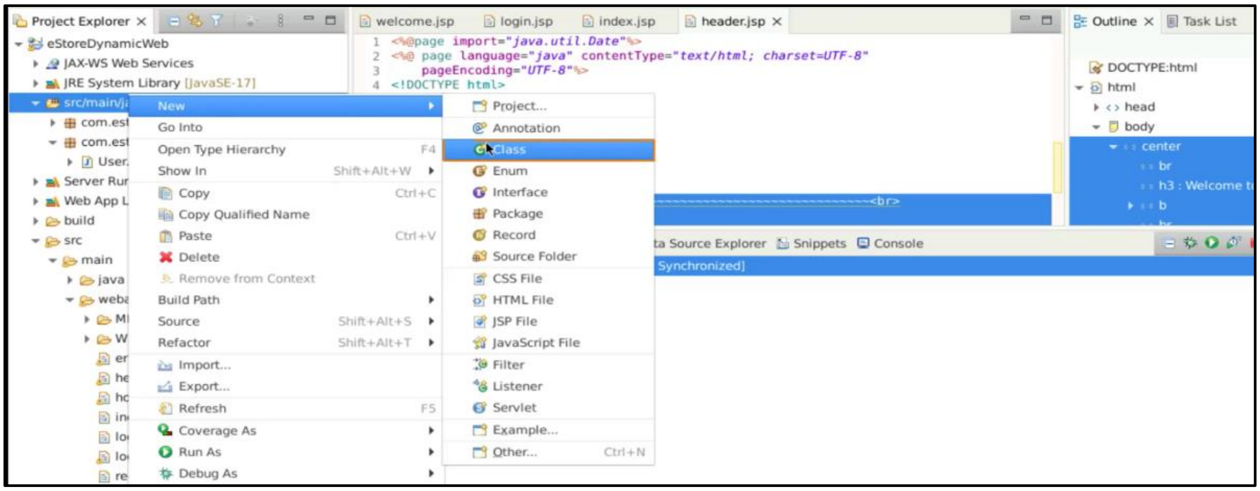
User Name is: dave.watson

Welcome to eStore

Sun Jan 16 14:43:28 UTC 2022

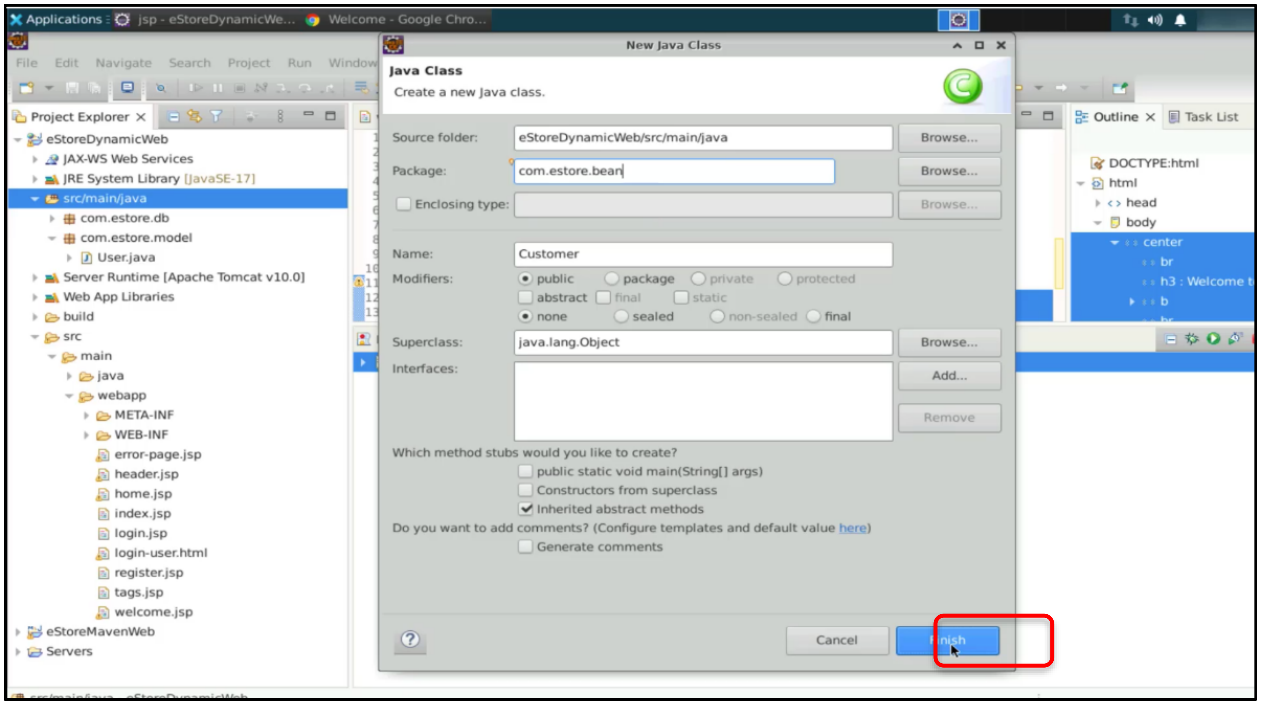
Step 4: Create a new class

4.1 To work with JavaBeans, create a new class named **Customer** in the **bean** package



```
<%@page import="java.util.Date"%>
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
```

4.2 Fill in the form with the appropriate details and click **Finish**



Java Class

Create a new Java class.

Source folder: eStoreDynamicWeb/src/main/java

Package: com.estore.bean

☐ Enclosing type:

Name: Customer

Modifiers: ● public ○ package ○ private ○ protected
☐ abstract ☐ final ☐ static
● none ○ sealed ○ non-sealed ○ final

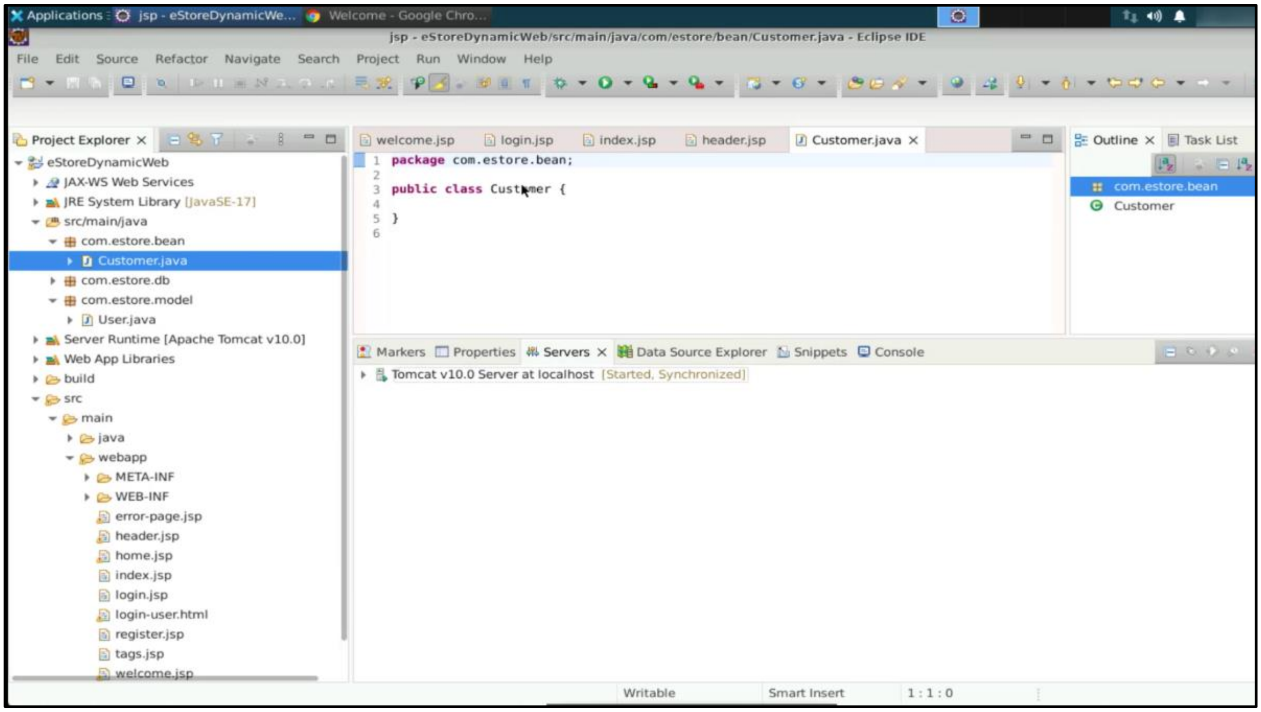
Superclass: java.lang.Object

Interfaces:

Which method stubs would you like to create?
☐ public static void main(String[] args)
☐ Constructors from superclass
☑ Inherited abstract methods

Do you want to add comments? (Configure templates and default value here)
☐ Generate comments

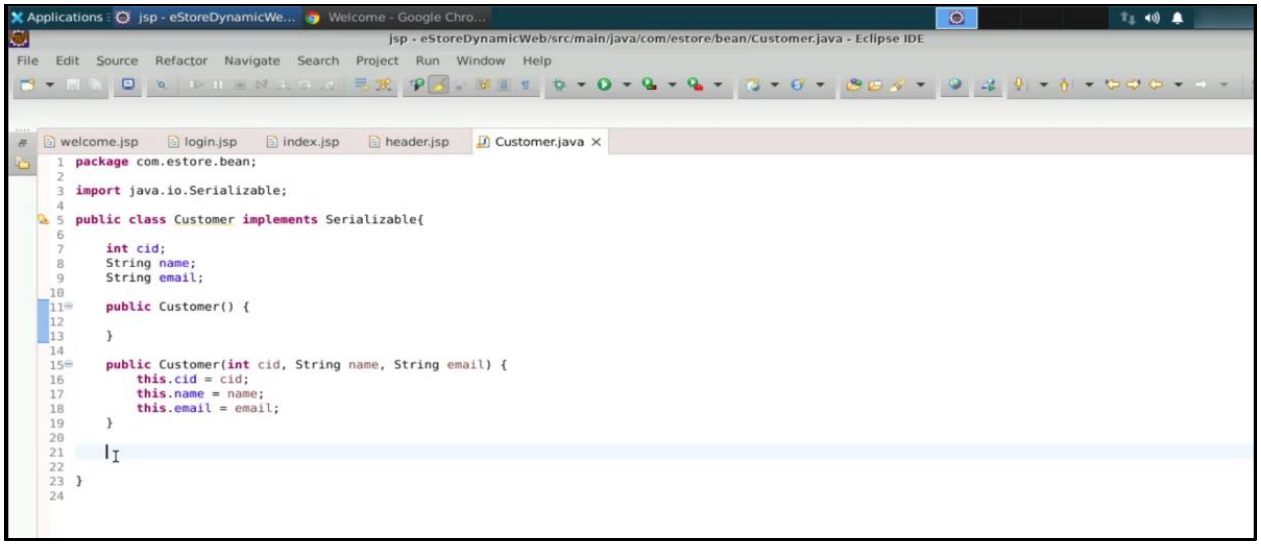
A **Customer.java** file will be created.



```
package com.estore.bean;

public class Customer {

}
```

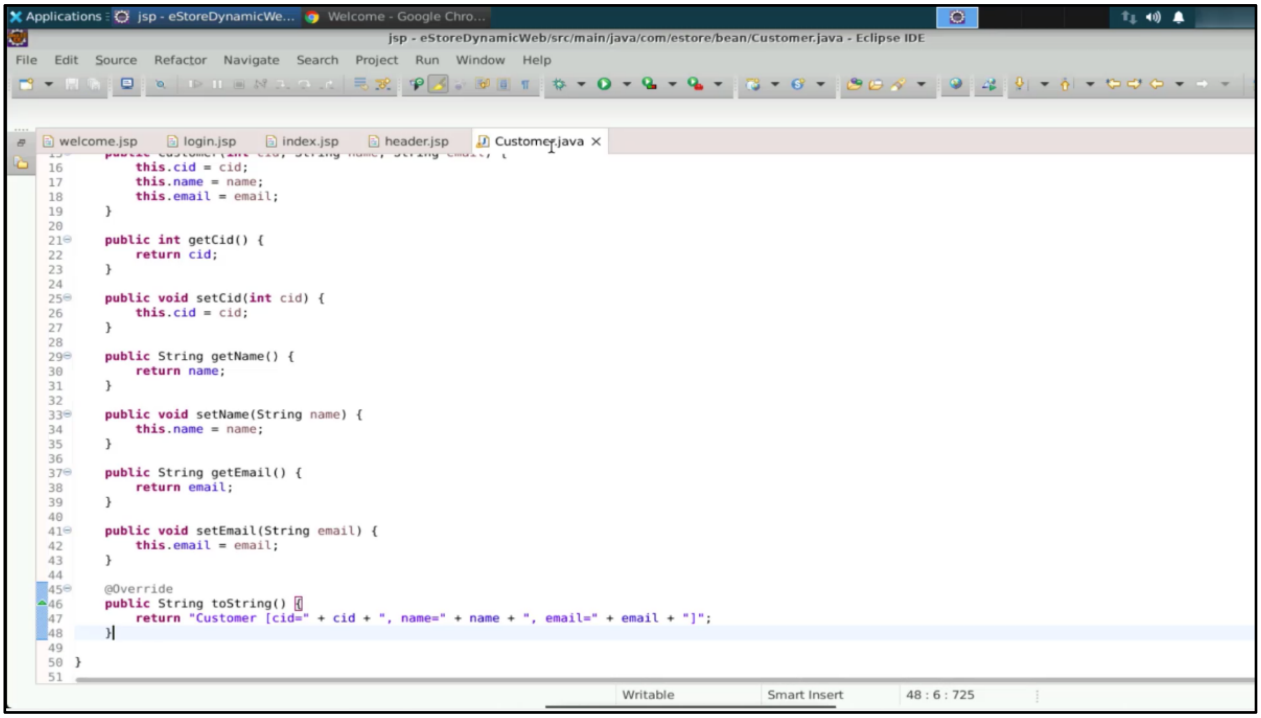
jsp - eStoreDynamicWeb/src/main/java/com/estore/bean/Customer.java - Eclipse IDE
Customer.java

4.3 Write the code to implement the **Serializable** interface and a constructor that takes the parameters **cid**, **name**, and **email** of the customer


Applications
jsp - eStoreDynamicWe...
Welcome - Google Chro...
jsp - eStoreDynamicWeb/src/main/java/com/estore/bean/Customer.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
welcome.jsp
login.jsp
index.jsp
header.jsp
Customer.java

```
package com.estore.bean;

import java.io.Serializable;

public class Customer implements Serializable{

    int cid;
    String name;
    String email;

    public Customer() {

    }

    public Customer(int cid, String name, String email) {
        this.cid = cid;
        this.name = name;
        this.email = email;
    }


}

```

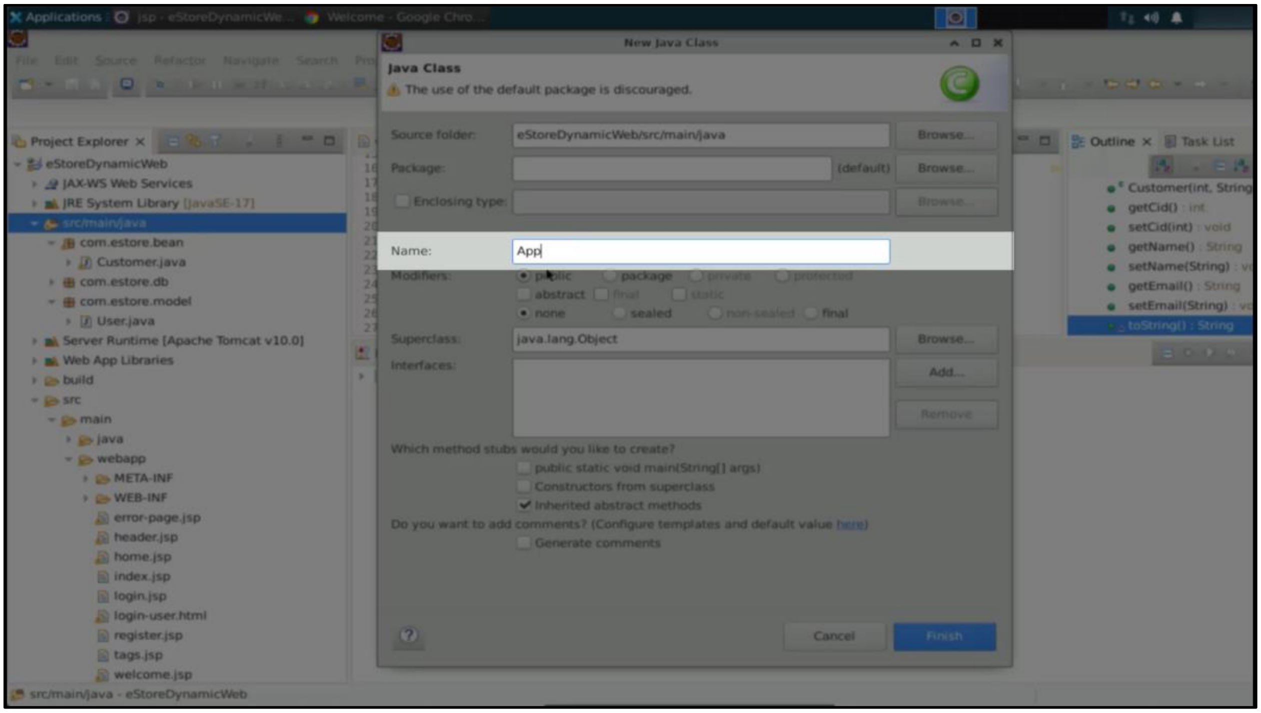
4.4 Create getters and setters for the fields **cid**, **name**, and **email** and a toString method for printing the values


Applications
jsp - eStoreDynamicWe...
Welcome - Google Chro...
jsp - eStoreDynamicWeb/src/main/java/com/estore/bean/Customer.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
welcome.jsp
login.jsp
index.jsp
header.jsp
Customer.java
Writable
Smart Insert
48 : 6 : 725

```
    public Customer(int cid, String name, String email) {
        this.cid = cid;
        this.name = name;
        this.email = email;
    }

    public int getCid() {
        return cid;
    }

    public void setCid(int cid) {
        this.cid = cid;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public String getEmail() {
        return email;
    }

    public void setEmail(String email) {
        this.email = email;
    }

    @Override
    public String toString() {
        return "Customer [cid=" + cid + ", name=" + name + ", email=" + email + "]";
    }

}

```

Step 5: Create another class

5.1 Create a new class named **App**



New Java Class

Java Class

The use of the default package is discouraged.

Source folder: eStoreDynamicWeb/src/main/java

Package: (default)

□ Enclosing type:

Name: App

Modifiers: ● public ○ package ○ private ○ protected

□ abstract □ final □ static

● none ○ sealed ○ non-sealed ○ final

Superclass: java.lang.Object

Interfaces:

Which method stubs would you like to create?

□ public static void main(String[] args)

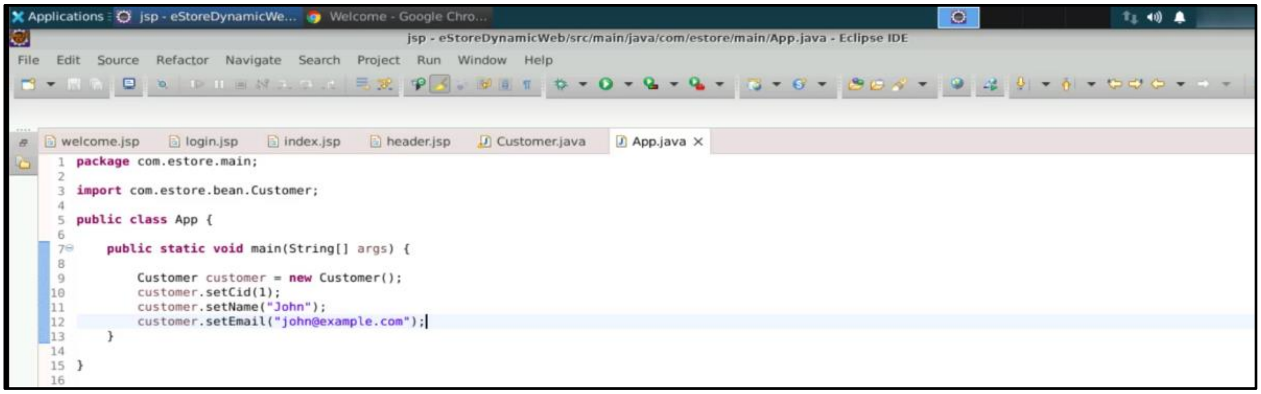
□ Constructors from superclass

☑ Inherited abstract methods

Do you want to add comments? (Configure templates and default value here)

□ Generate comments

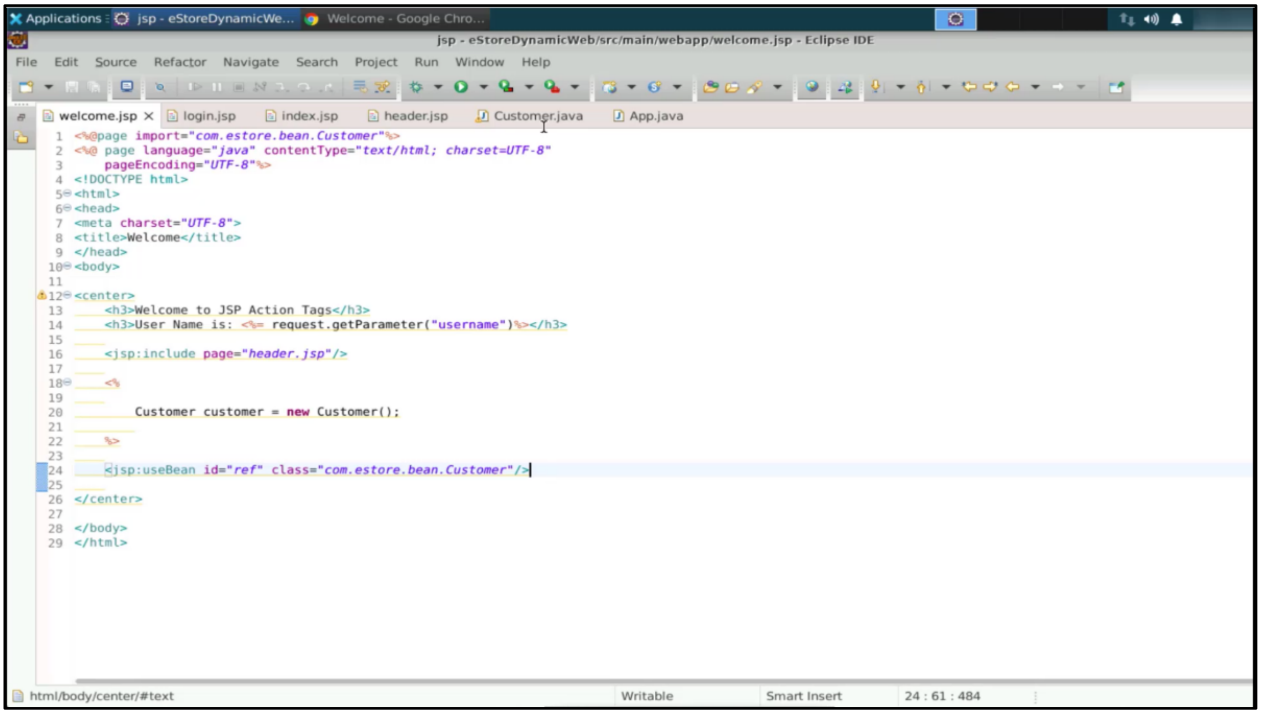
5.2 Create a main function in the **App** class, instantiate the customer object, and assign the values using the setter functions



jsp - eStoreDynamicWeb/src/main/java/com/estore/main/App.java - Eclipse IDE

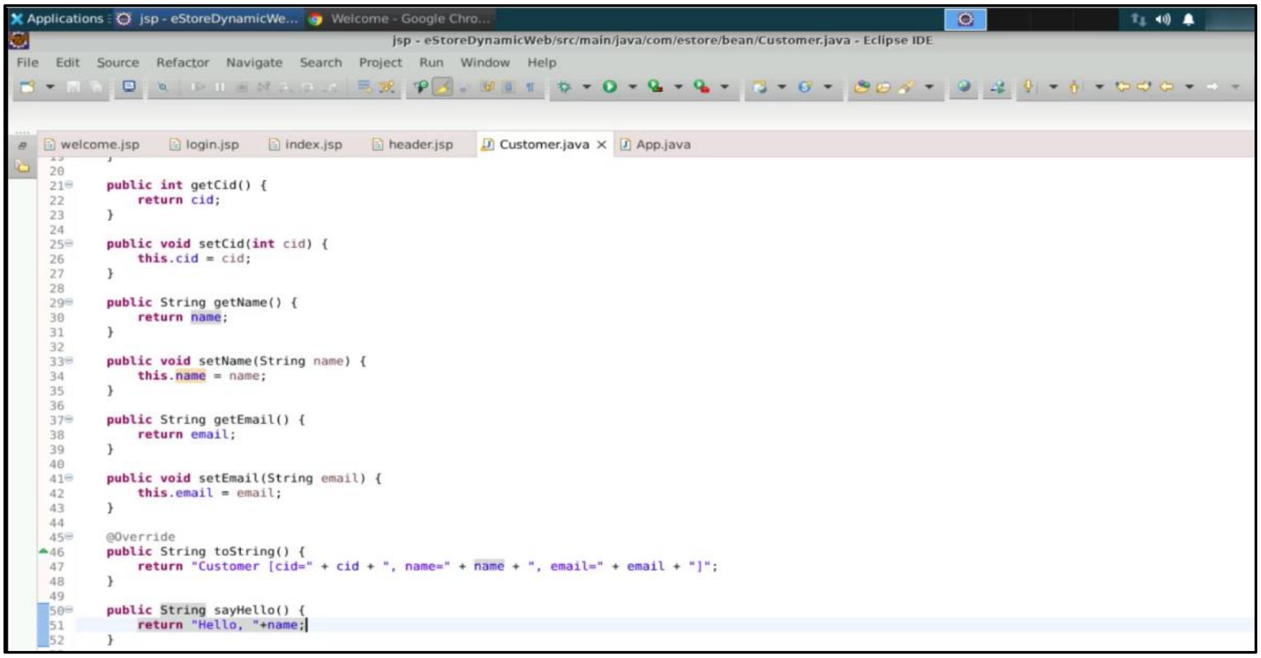
```java
package com.estore.main;

import com.estore.bean.Customer;

public class App {

    public static void main(String[] args) {

        Customer customer = new Customer();
        customer.setCid(1);
        customer.setName("John");
        customer.setEmail("john@example.com");
    }

}
```

5.3 Go to the **welcome.jsp** file and use a scriplet tag to instantiate the **Customer** object



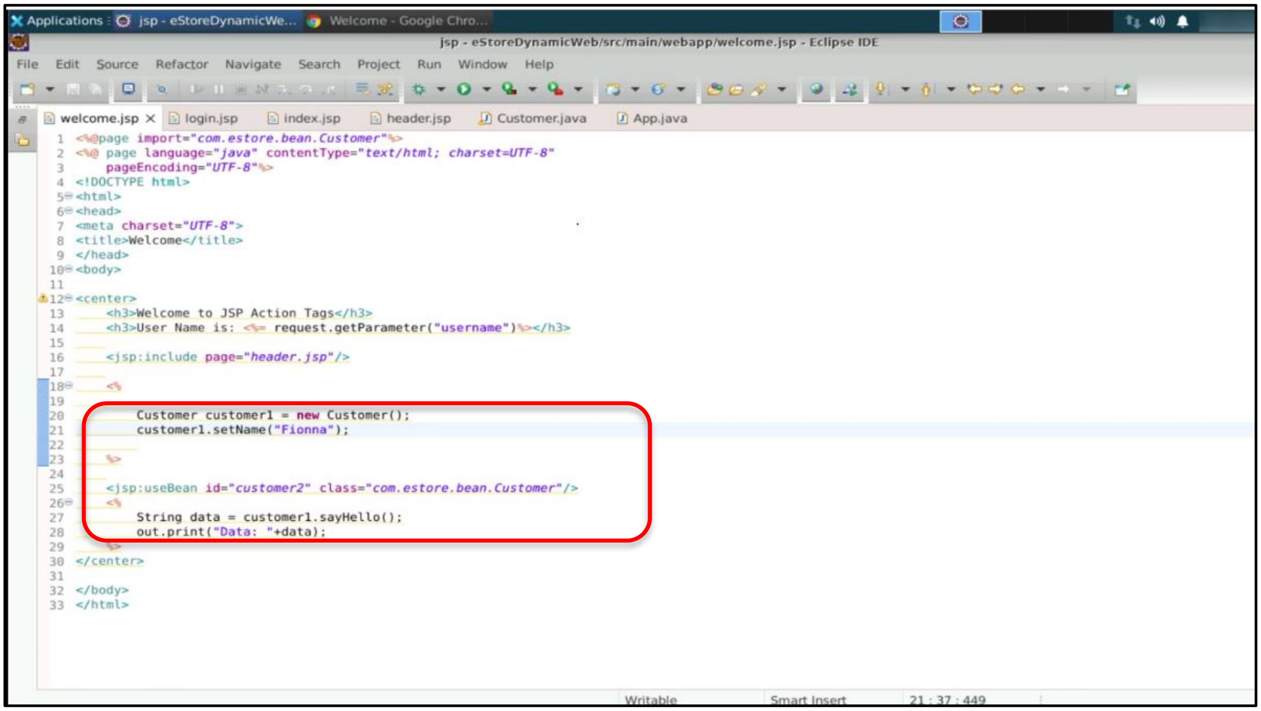
```
<%@page import="com.estore.bean.Customer"%>
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Welcome</title>
</head>
<body>

<center>
    <h3>Welcome to JSP Action Tags</h3>
    <h3>User Name is: <%= request.getParameter("username")%></h3>

    <jsp:include page="header.jsp"/>

    <%

        Customer customer = new Customer();

    %>

    <jsp:useBean id="ref" class="com.estore.bean.Customer"/>

</center>

</body>
</html>
```

5.4 Go to the **Customer.java** file and create a function called **sayHello** that returns Hello greetings with the customer's name


Applications
jsp - eStoreDynamicWe...
Welcome - Google Chro...
jsp - eStoreDynamicWeb/src/main/java/com/estore/bean/Customer.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
welcome.jsp
login.jsp
index.jsp
header.jsp
Customer.java
App.java

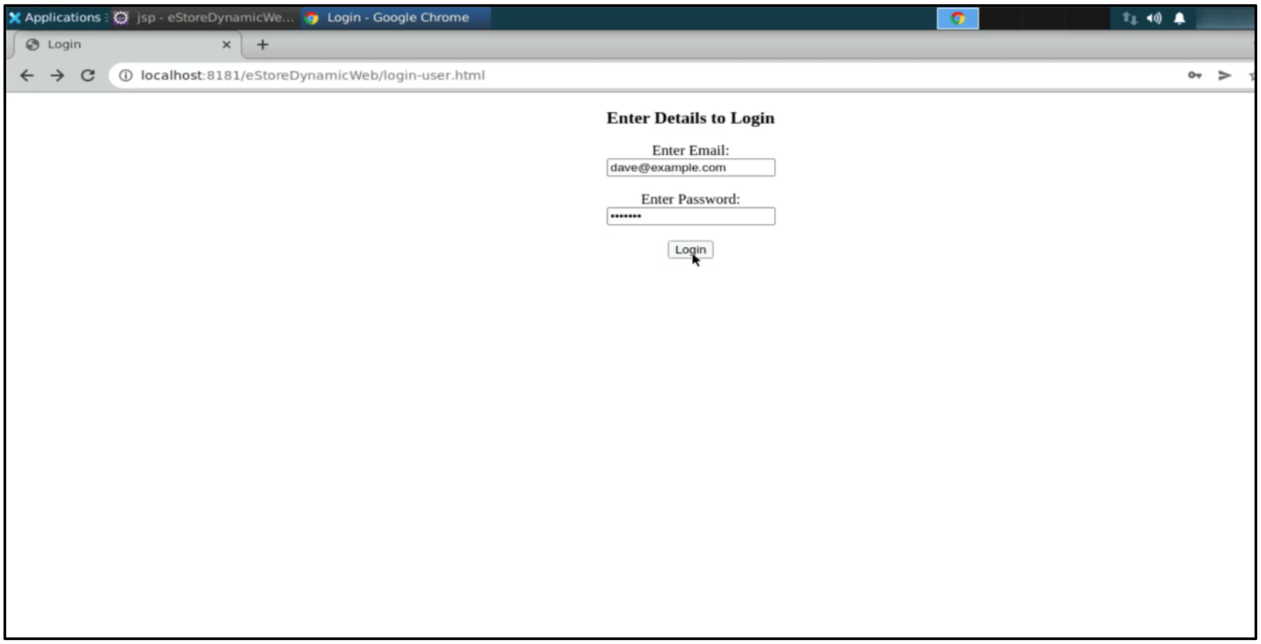
```

    public int getCid() {
        return cid;
    }

    public void setCid(int cid) {
        this.cid = cid;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public String getEmail() {
        return email;
    }

    public void setEmail(String email) {
        this.email = email;
    }

    @Override
    public String toString() {
        return "Customer [cid=" + cid + ", name=" + name + ", email=" + email + "]";
    }

    public String sayHello() {
        return "Hello, "+name;
    }
```

5.5 Navigate back to the **welcome.jsp** file and add the provided code: (lines 20 to 28)



```
1  <%@page import="com.estore.bean.Customer"%>
2  <%@ page language="java" contentType="text/html; charset=UTF-8"
3      pageEncoding="UTF-8"%>
4  <!DOCTYPE html>
5  <html>
6  <head>
7  <meta charset="UTF-8">
8  <title>Welcome</title>
9  </head>
10 <body>
11 
12 <center>
13     <h3>Welcome to JSP Action Tags</h3>
14     <h3>User Name is: <%= request.getParameter("username")%></h3>
15 
16     <jsp:include page="header.jsp"/>
17 
18     <%
19 
20         Customer customer1 = new Customer();
21         customer1.setName("Fionna");
22 
23     %>
24 
25     <jsp:useBean id="customer2" class="com.estore.bean.Customer"/>
26     <%
27         String data = customer1.sayHello();
28         out.print("Data: "+data);
29     %>
30 </center>
31 
32 </body>
33 </html>
```

5.6 Go to the login page in the browser and refresh it. Enter the credentials and click **Login**



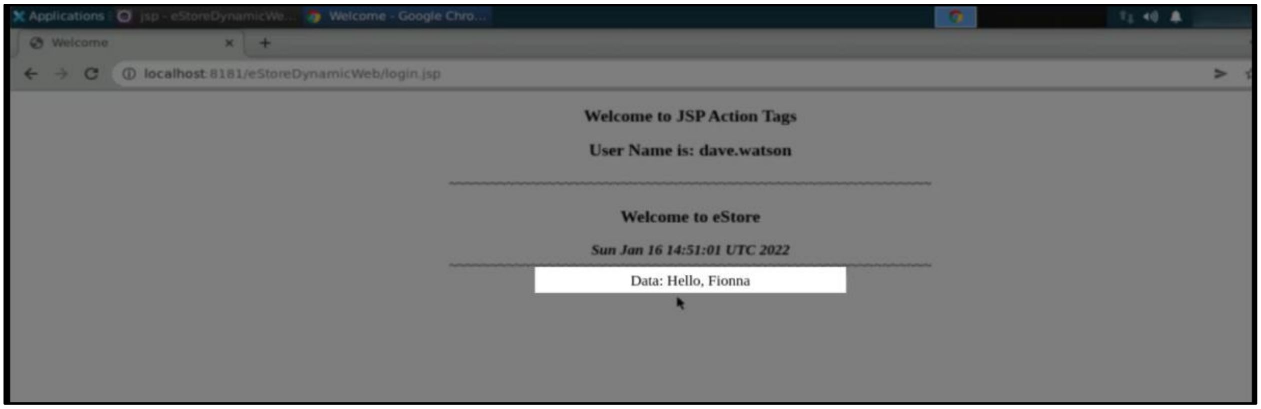
Enter Details to Login

Enter Email: dave@example.com

Enter Password: •••••••

Login

5.7 Verify that the output is displayed correctly on the browser, showing the customized greeting message



Welcome to JSP Action Tags

User Name is: dave.watson

Welcome to eStore

Sun Jan 16 14:51:01 UTC 2022

Data: Hello, Fionna

By following these steps, you have successfully explored various JSP tags in a web application using the Eclipse IDE.