

## Lesson 01 Demo 04

### Session Tracking in JSP

**Objective:** To understand and implement session tracking in JSP (Java Server Pages)

**Tools required:** Eclipse IDE

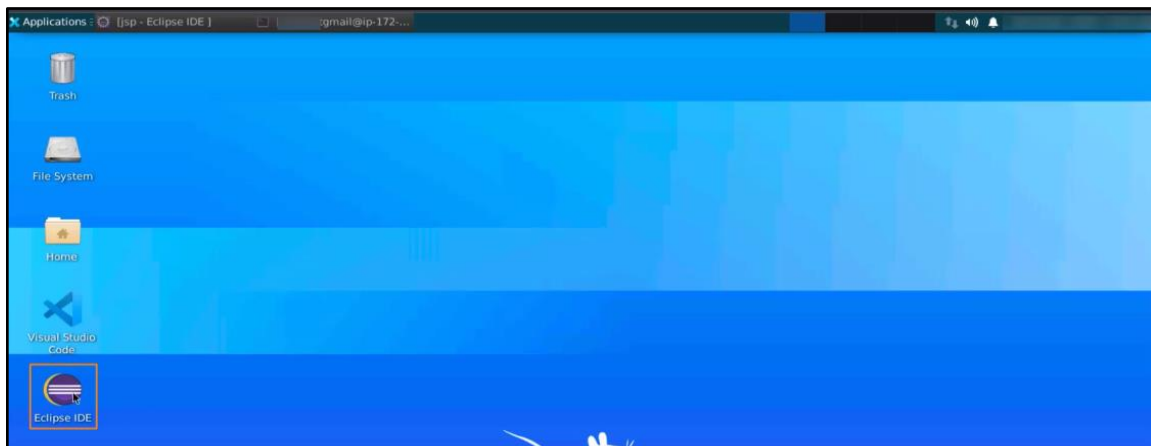
**Prerequisites:** None

#### Steps to be followed:

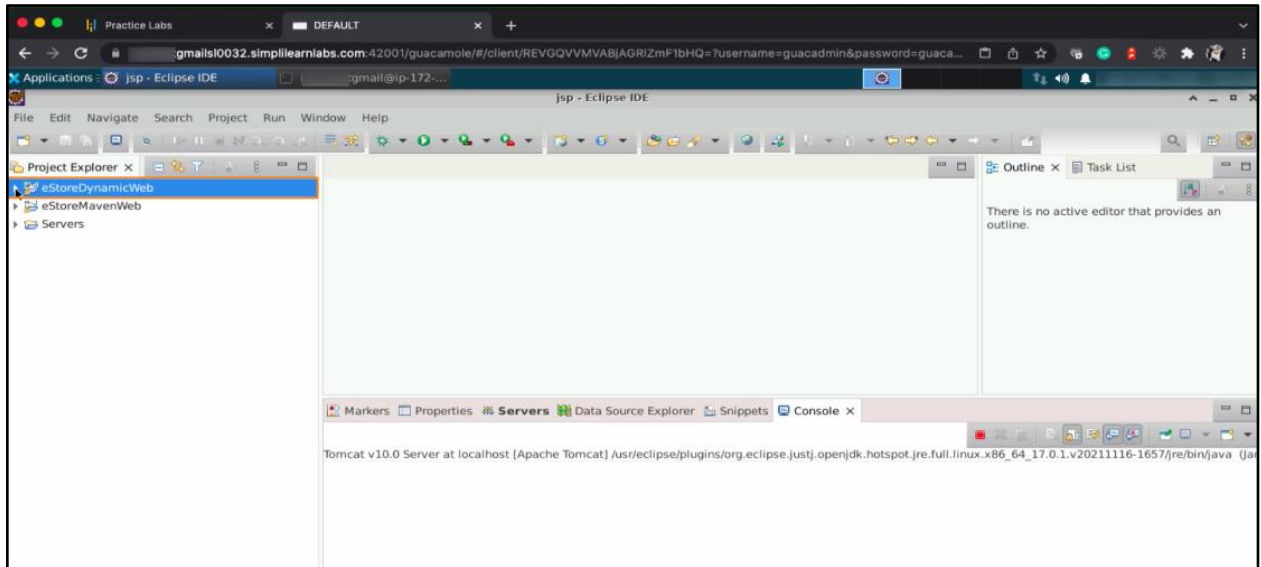
1. Create a new JSP file
2. Forward the page to the **home.jsp** page
3. Add cookies in the **login.jsp**
4. Navigate to **login.jsp** and add attributes
5. Write an operation to read the data from the URL
6. Write an operation for hidden field data
7. Write an operation for the HTTP session object

#### Step 1: Create a new JSP file

##### 1.1 Open Eclipse IDE

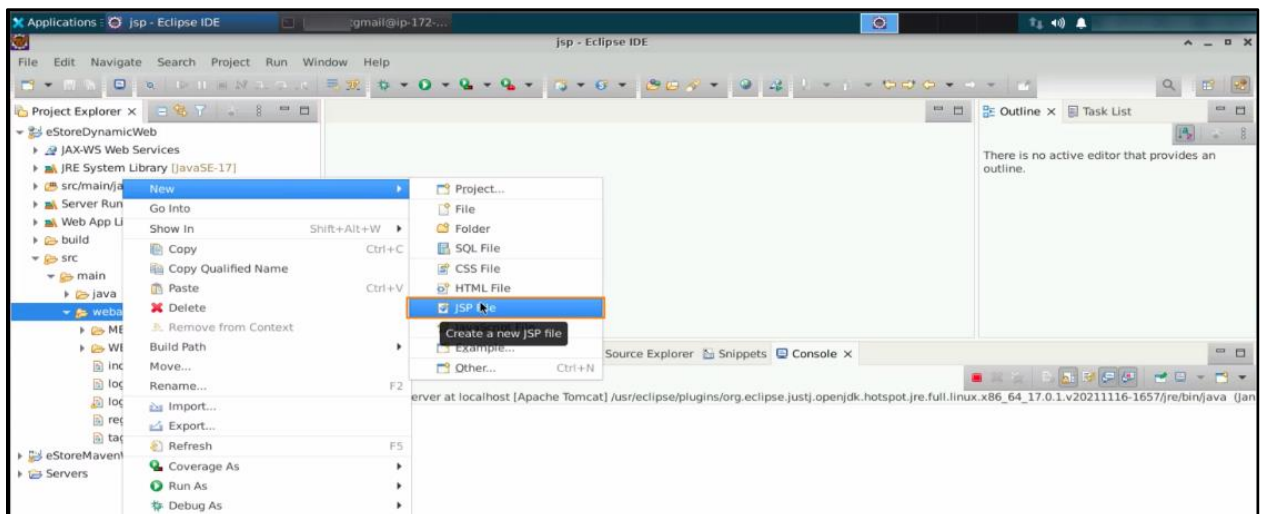


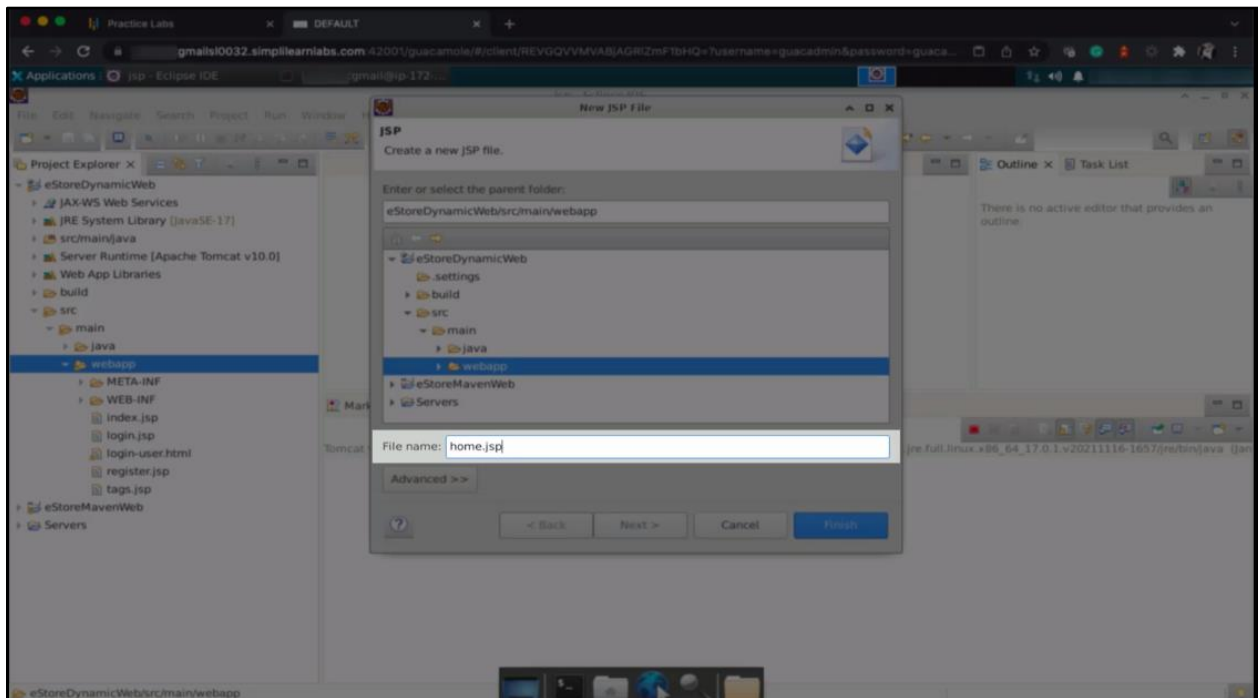
## 1.2 Open the **eStoreDynamicWeb** project



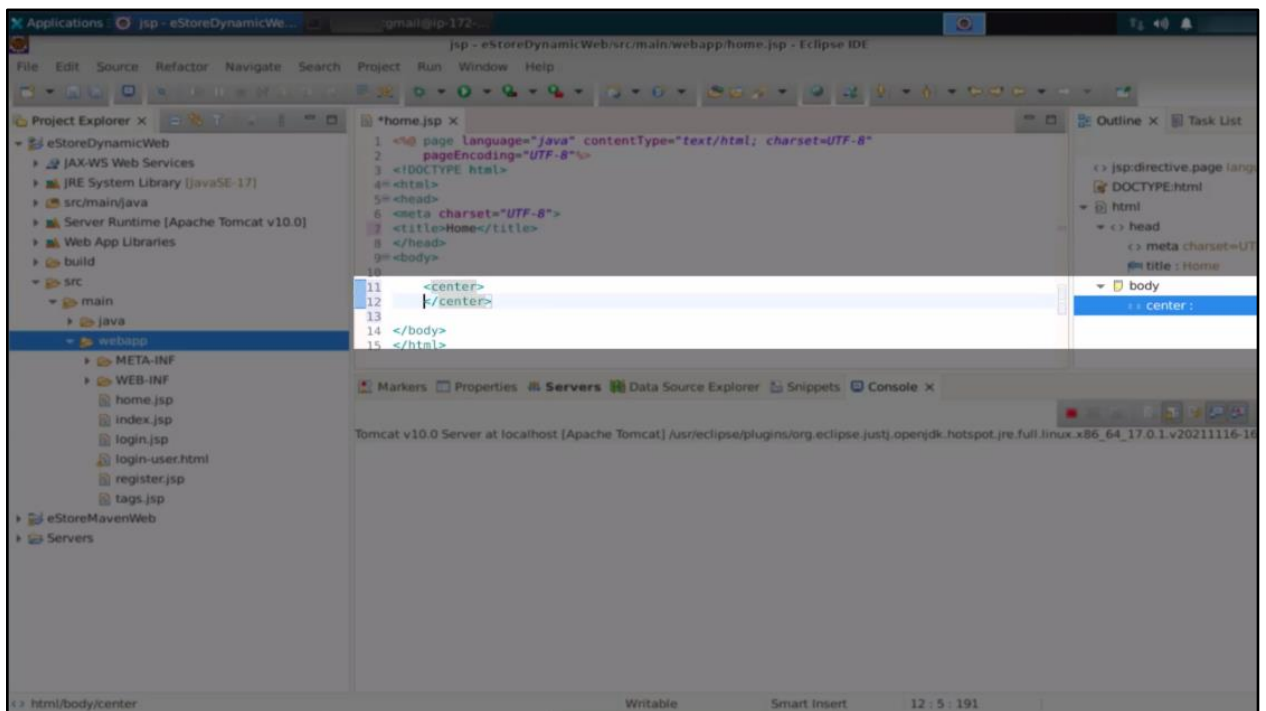
**Note:** Please refer to the previous demo on how to create the **eStoreDynamicWeb** project

## 1.3 Create a new **JSP** file and name the file **home.jsp**

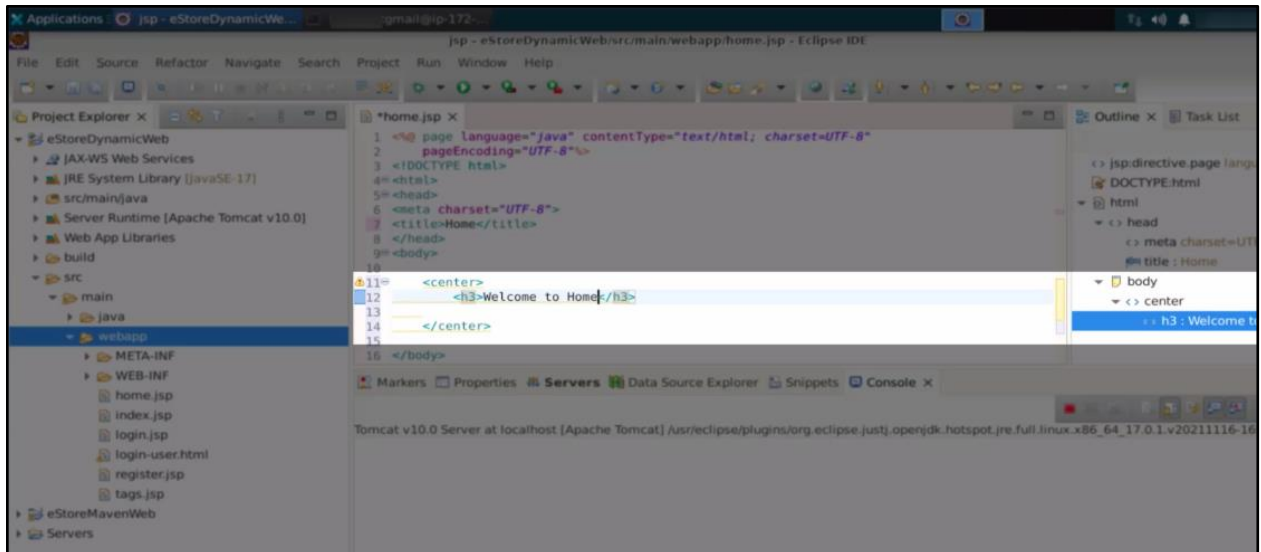




#### 1.4 Inside the JSP file, create a <center> tag



1.5 Inside the `<center>` tag, create an `<h3>` tag with **Welcome to Home** text

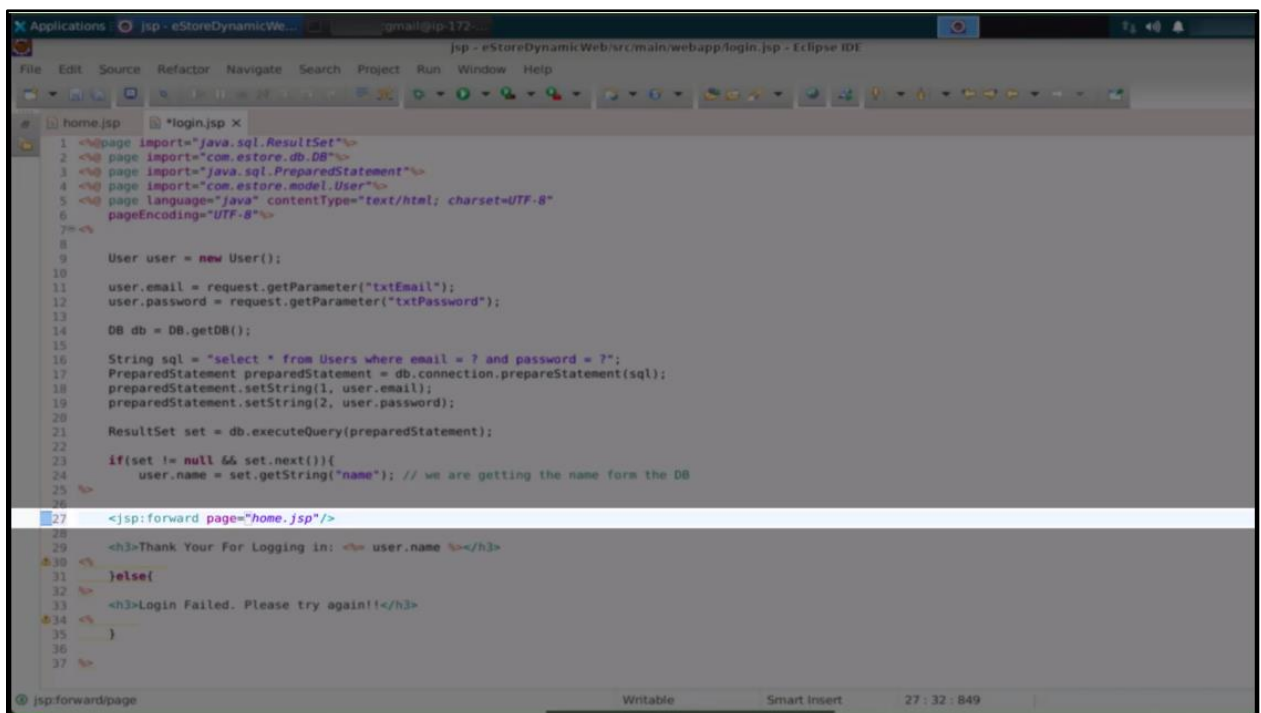


```

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>Home</title>
8 </head>
9 <body>
10
11 <center>
12 <h3>Welcome to Home</h3>
13
14 </center>
15
16 </body>

```

1.6 Then, add a `<jsp:forward>` tag to forward the request to **home.jsp**

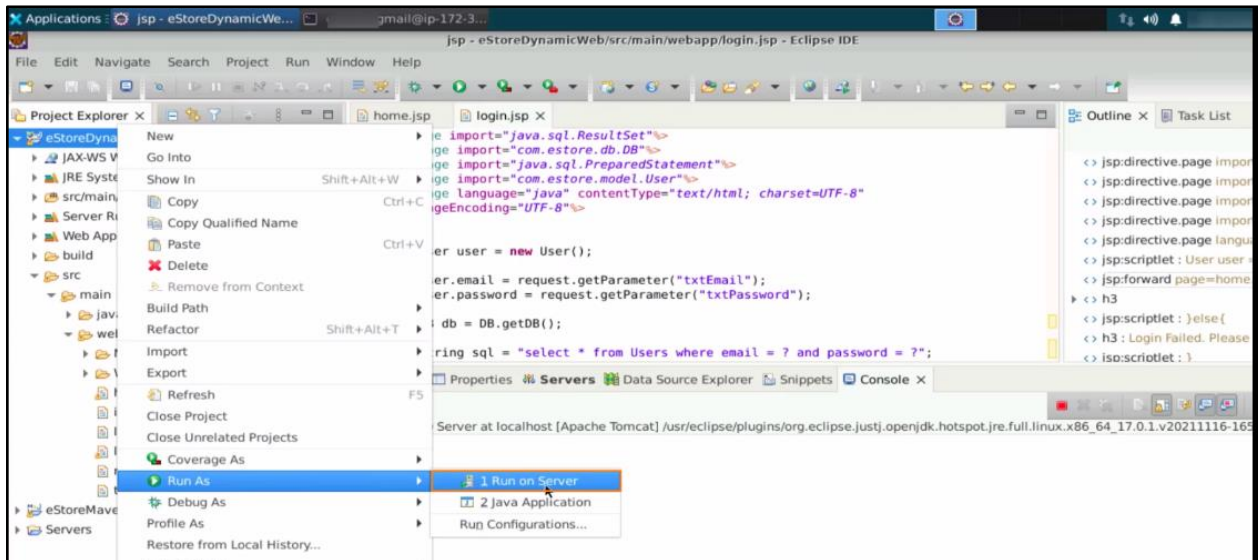


```

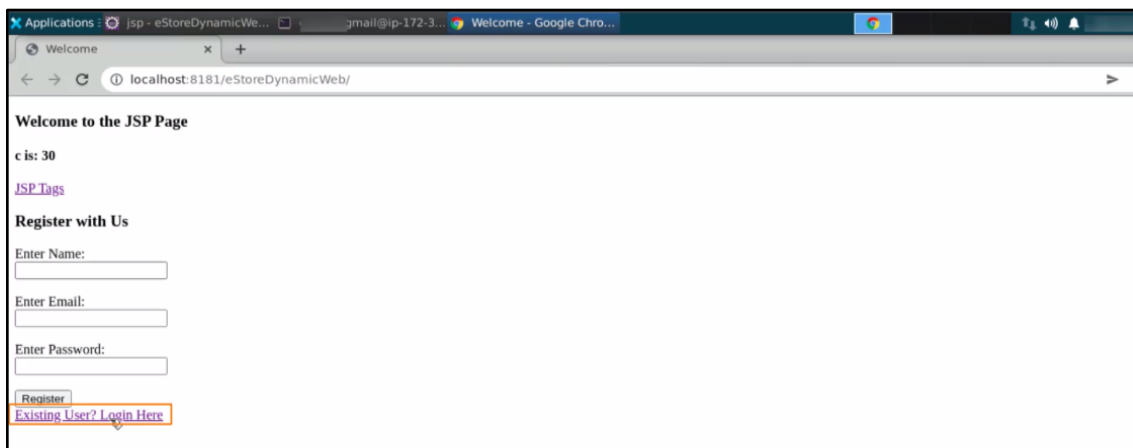
1 <%@ page import='java.sql.ResultSet'
2 <%@ page import='com.estore.db.DB'
3 <%@ page import='java.sql.PreparedStatement'
4 <%@ page import='com.estore.model.User'
5 <%@ page language='java' contentType='text/html; charset=UTF-8'
6 pageEncoding='UTF-8'%>
7 <%>
8
9 User user = new User();
10
11 user.email = request.getParameter('txtEmail');
12 user.password = request.getParameter('txtPassword');
13
14 DB db = DB.getDB();
15
16 String sql = 'select * from Users where email = ? and password = ?';
17 PreparedStatement preparedStatement = db.connection.prepareStatement(sql);
18 preparedStatement.setString(1, user.email);
19 preparedStatement.setString(2, user.password);
20 ResultSet set = db.executeQuery(preparedStatement);
21
22
23 if(set != null && set.next()){
24 user.name = set.getString('name'); // we are getting the name form the DB
25
26
27 <jsp:forward page='home.jsp'/%>
28
29 <h3>Thank Your For Logging in: <%= user.name %></h3>
30
31 }else{
32
33 <h3>Login Failed. Please try again!!</h3>
34
35 }
36
37

```

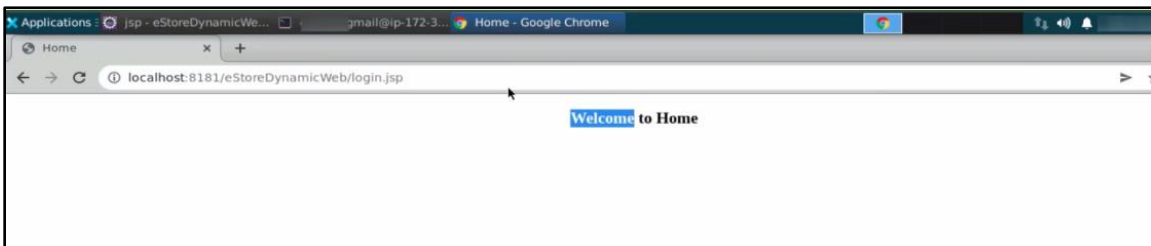
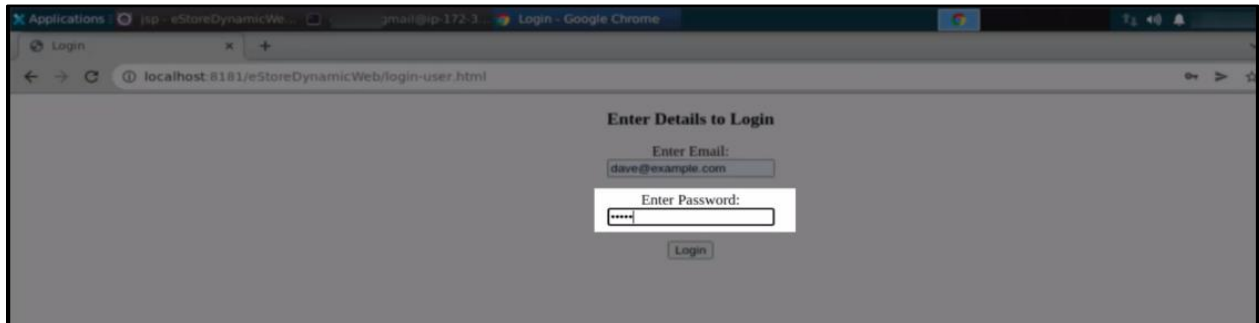
## 1.7 Save the file and run the code



## 1.8 Click on Existing User? Login Here



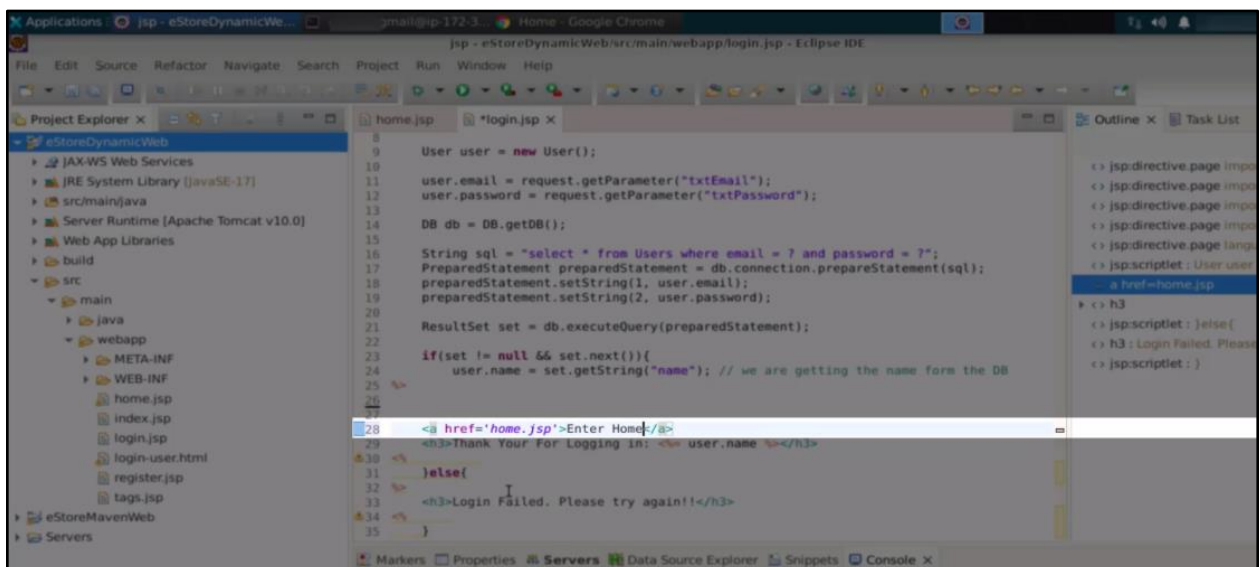
## 1.9 Enter the email address and password and click **Login**



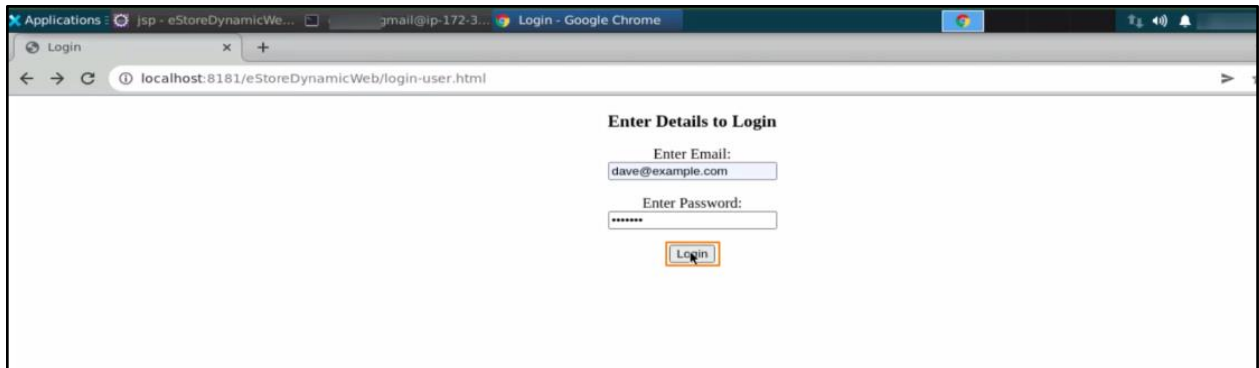
You can see the output as **Welcome to Home**.

## Step 2: Forward the page to the home.jsp page

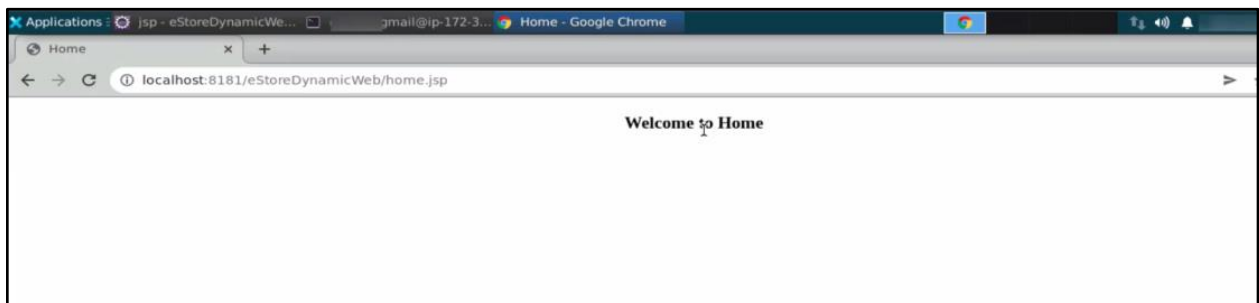
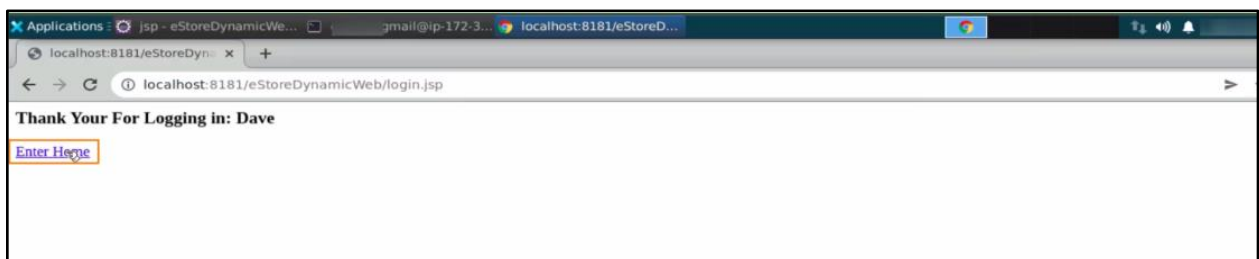
2.1 In the **login.jsp** file, use an anchor tag **<a>** to forward the page to the **home.jsp** page and set the **href** attribute of the anchor tag to **home.jsp**



## 2.2 Go back to the browser and click on the **Login** link



## 2.3 Click on the **Enter Home** link



You will see the output **Welcome to Home** displayed on the page.



### Step 3: Add cookies in the login.jsp

3.1 In the **login.jsp** file, add cookies to store user login information. This can be done using JSP scriptlets or JSP tags.

```

1 <%@page import="java.sql.ResultSet"%>
2 <%@page import="com.estore.db.DB"%>
3 <%@page import="java.sql.PreparedStatement"%>
4 <%@page import="com.estore.model.User"%>
5 <%@page language="java" contentType="text/html; charset=UTF-8"%>
6 <%@pageEncoding="UTF-8"%>
7
8
9 User user = new User();
10
11 user.email = request.getParameter("txtEmail");
12 user.password = request.getParameter("txtPassword");
13
14 DB db = DB.getDB();
15
16 String sql = "select * from Users where email = ? and password = ?";
17 PreparedStatement preparedStatement = db.connection.prepareStatement(sql);
18 preparedStatement.setString(1, user.email);
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     <h3>Thank Your For Logging in: <%= user.name %></h3>
34     <a href='home.jsp'>Enter Home</a>
35
36 }else{
37
38

```

3.2 Navigate back to the **home.jsp** page and add a tag to display the cookies. Use an expression tag `<%= %>` to retrieve and display the cookie values.

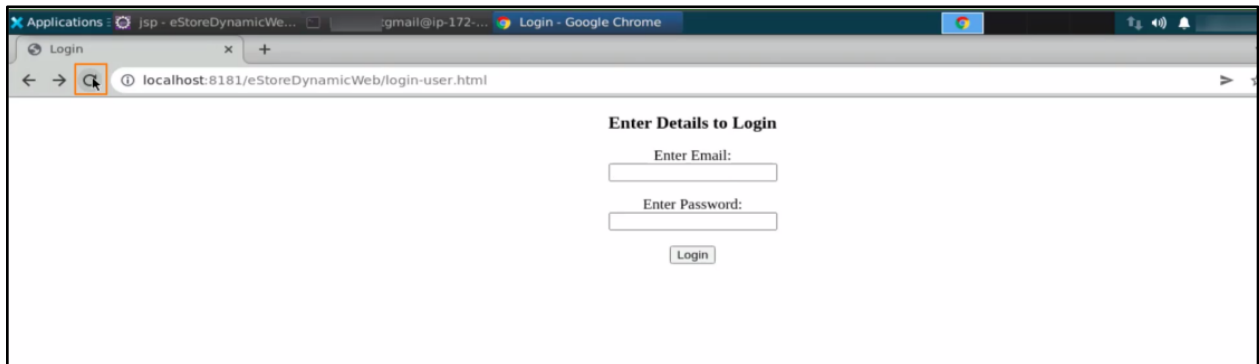
```

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>Home</title>
8 </head>
9 <body>
10
11 <center>
12 <h3>Welcome to Home</h3>
13
14
15 Cookie[] cookies = request.getCookies();
16 for(Cookie cookie : cookies){
17
18 <%= cookie.getName() %> | <%= cookie.getValue() %> <br>
19
20 }
21
22
23 </center>
24
25
26 </body>
27 </html>

```



### 3.3 Refresh the page in the browser

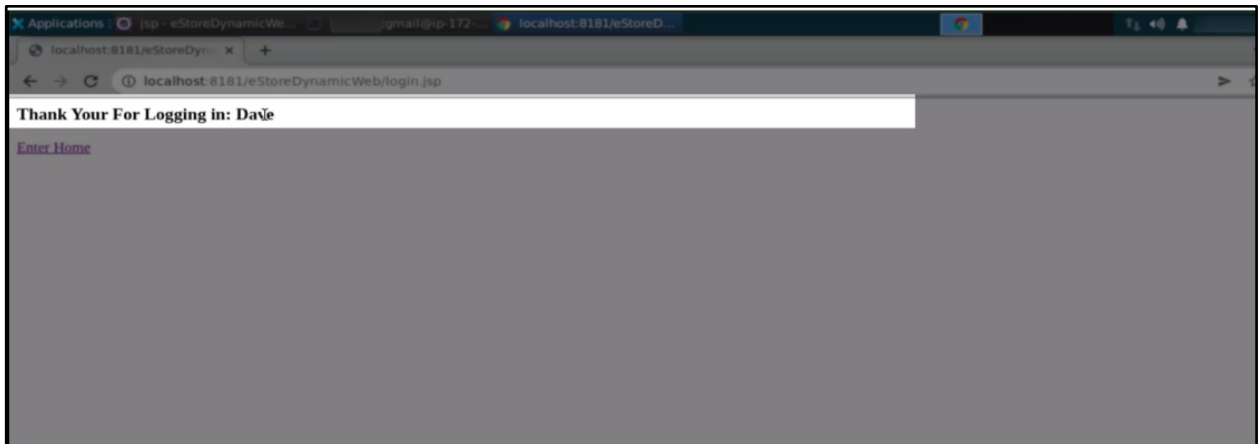


### 3.4 Enter your email address and password in the Login form



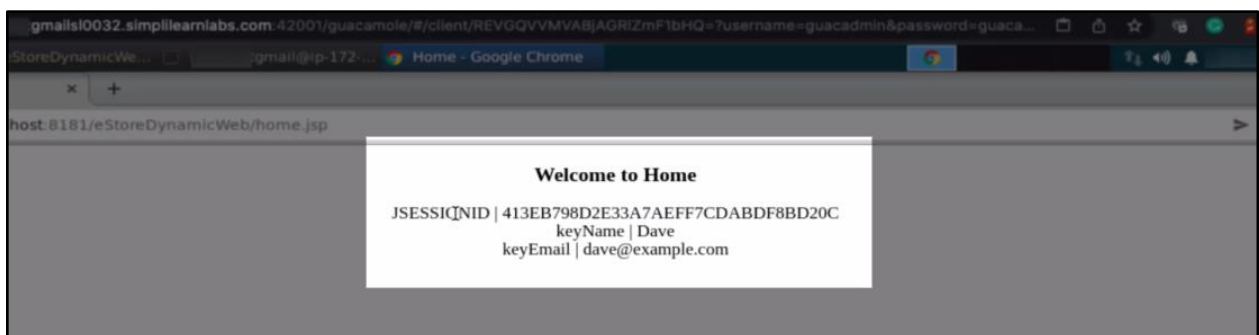
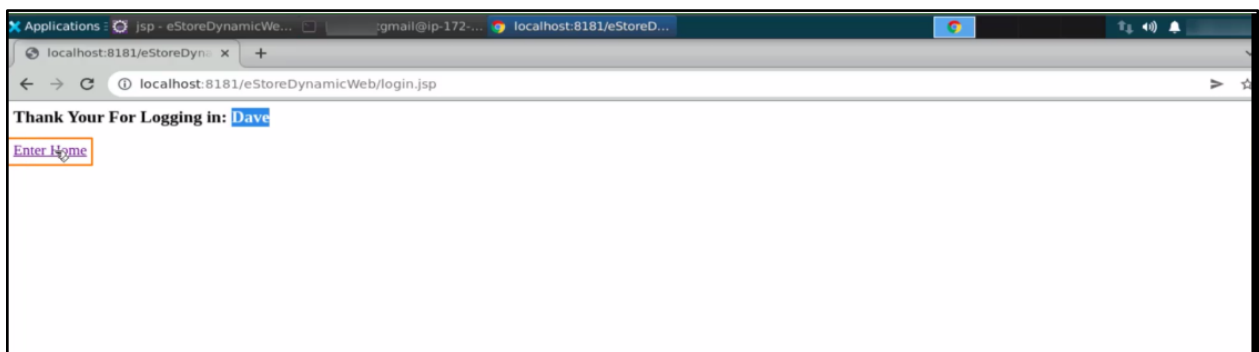
### 3.5 Click on the Login button





You will see the output **Thank You for Logging in, [Username]** displayed on the page, where **[Username]** is the name retrieved from the cookie.

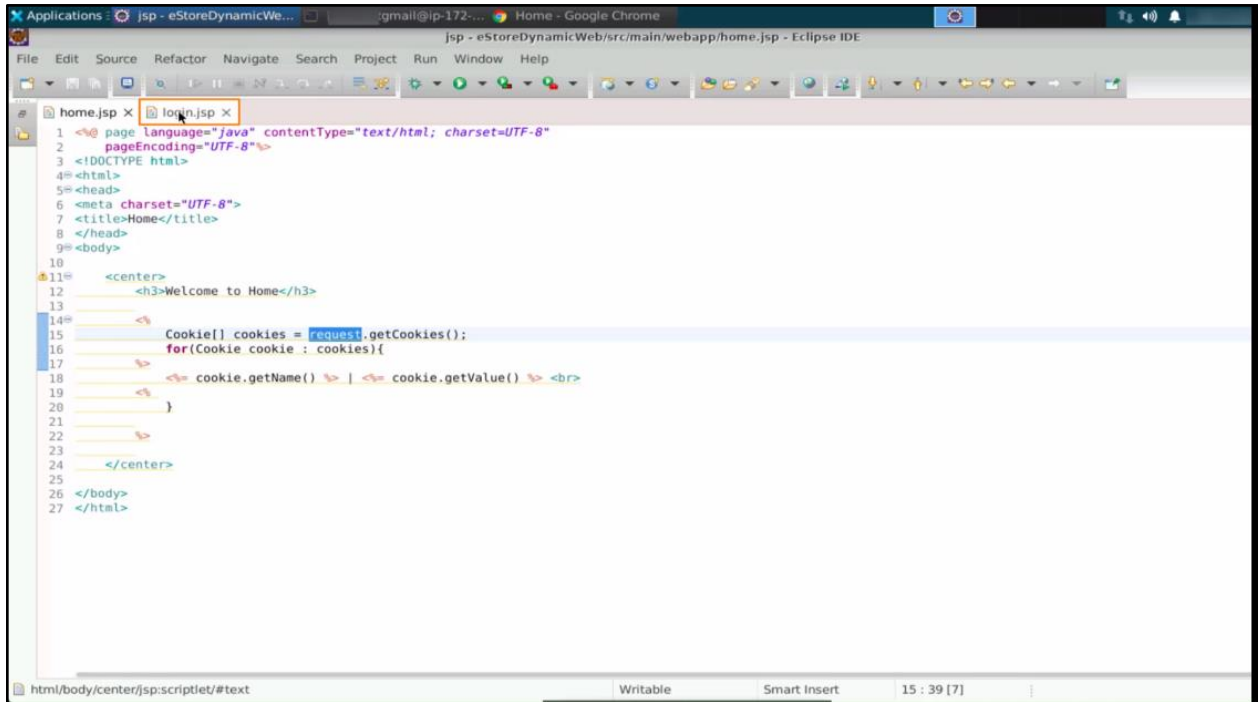
### 3.6 Click the **Enter Home** link



You will see the user details displayed on the page.

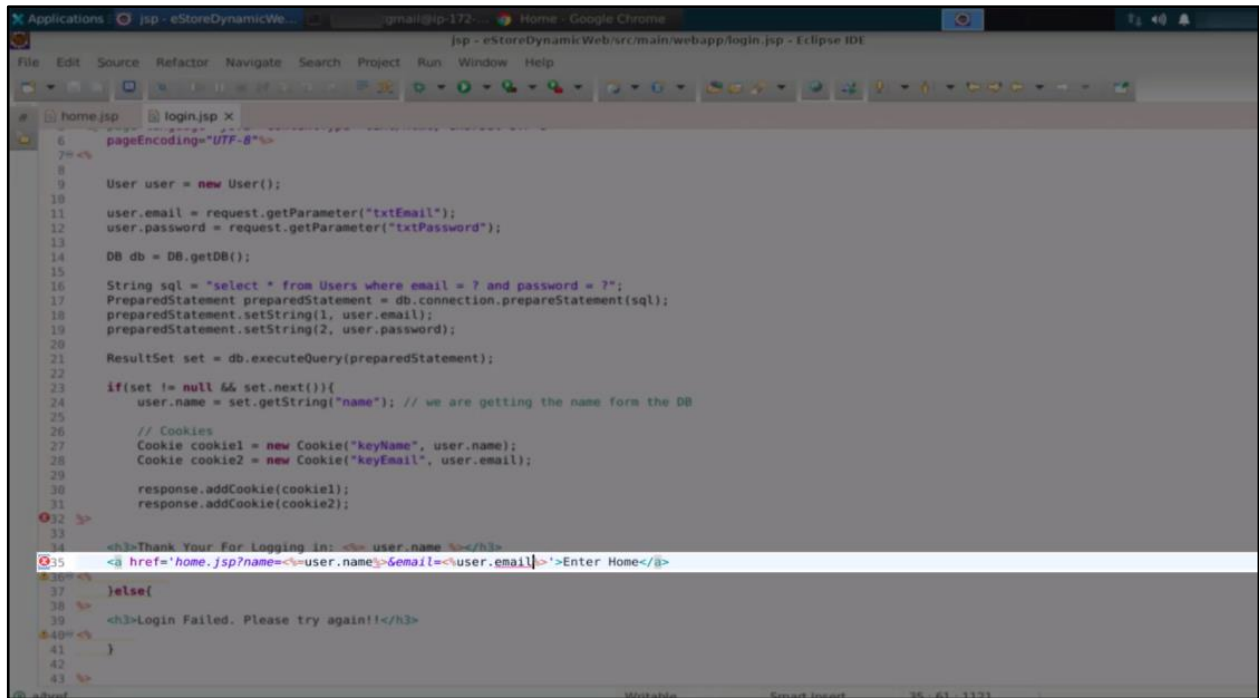
## Step 4: Navigate to login.jsp and add attributes

### 4.1 Go back to Eclipse IDE and open the login.jsp file



```
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>Home</title>
8 </head>
9 <body>
10
11 <center>
12 <h3>Welcome to Home</h3>
13
14
15 Cookie[] cookies = request.getCookies();
16 for(Cookie cookie : cookies){
17
18 <%= cookie.getName() %> | <%= cookie.getValue() %> <br>
19
20 }
21
22
23 </center>
24
25 </body>
26 </html>
```

### 4.2 Modify the anchor tag used for forwarding to include attributes for the user's name and email



```

1  pageEncoding="UTF-8"%>
2
3  <%@page contentType="text/html" pageEncoding="UTF-8"%>
4
5
6  User user = new User();
7
8  user.email = request.getParameter("txtEmail");
9  user.password = request.getParameter("txtPassword");
10
11  DB db = DB.getDB();
12
13  String sql = "select * from Users where email = ? and password = ?";
14  PreparedStatement preparedStatement = db.connection.prepareStatement(sql);
15  preparedStatement.setString(1, user.email);
16  preparedStatement.setString(2, user.password);
17
18  ResultSet set = db.executeQuery(preparedStatement);
19
20  if(set != null && set.next()){
21      user.name = set.getString("name"); // we are getting the name from the DB
22
23      // Cookies
24      Cookie cookie1 = new Cookie("keyName", user.name);
25      Cookie cookie2 = new Cookie("keyEmail", user.email);
26
27      response.addCookie(cookie1);
28      response.addCookie(cookie2);
29
30      <h3>Thank Your For Logging in: <%= user.name %></h3>
31      <a href='home.jsp?name=<%=user.name%>&email=<%=user.email%>'>Enter Home</a>
32  }else{
33      <h3>Login Failed. Please try again!!</h3>
34  }
35
36
37
38
39
40
41
42
43

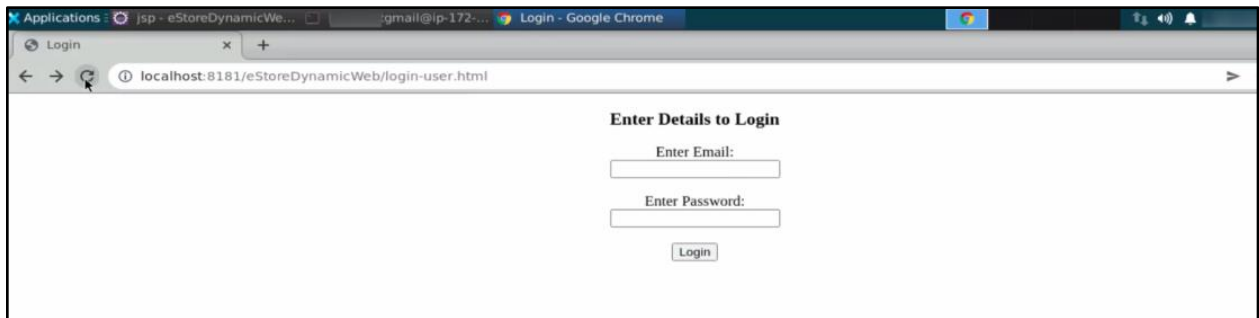
```

These attributes can be passed as query parameters in the URL.

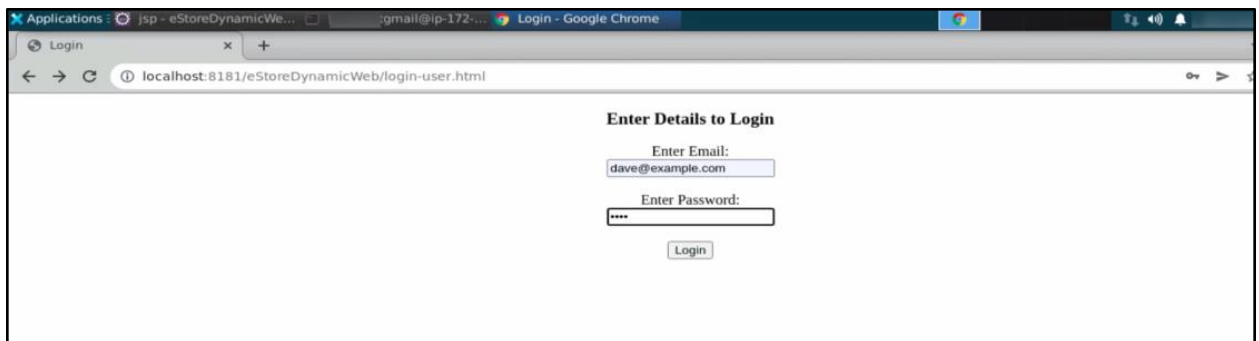
4.3 Set the response type of the anchor tag to **String** using the **response** attribute



4.5 Go back to the browser and refresh the page



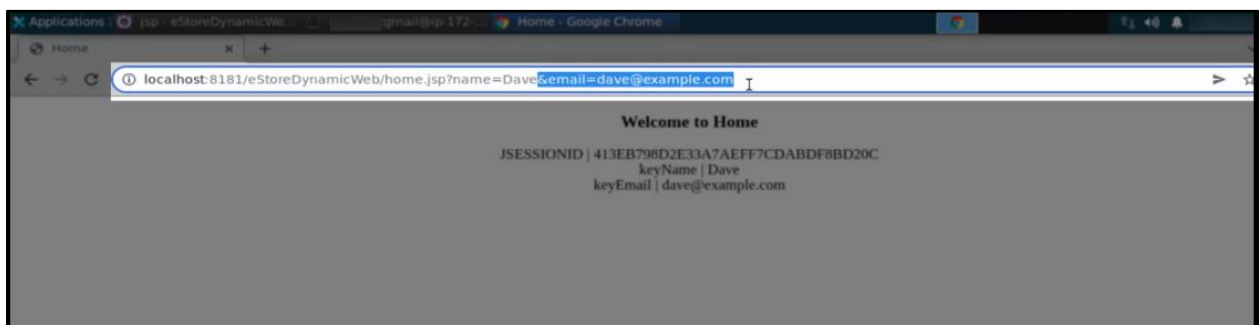
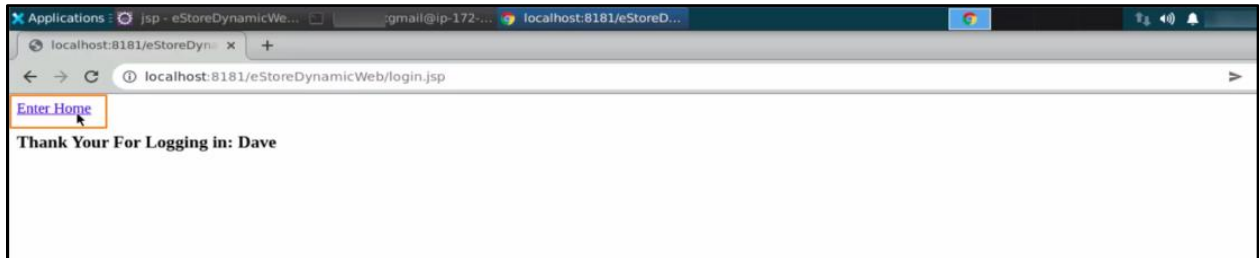
4.6 Enter your email address and password in the login form



4.7 Click the **Login** button



#### 4.8 Click on the **Enter Home** link



You will see the email ID passed in the URL.

### Step 5: Write an operation to read the data from the URL

#### 5.1 Go back to the **home.jsp** page



```

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>Home</title>
8 </head>
9 <body>
10
11 <center>
12 <h3>Welcome to Home</h3>
13
14
15     Cookie[] cookies = request.getCookies();
16     for(Cookie cookie : cookies){
17
18         <%= cookie.getName() %> | <%= cookie.getValue() %> <br>
19
20     }
21
22
23 </center>
24
25 </body>
26 </html>

```

5.2 Write an operation to read the data from the URL using JSP scriptlets or JSP tags.  
Retrieve the query parameters from the URL and display them on the page

```

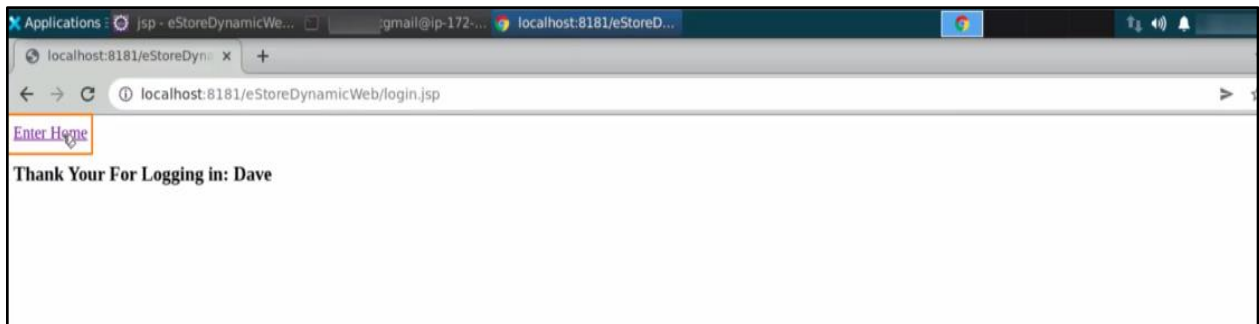
1 <% page language="java" contentType="text/html; charset=UTF-8"
2   pageEncoding="UTF-8"%>
3 <!DOCTYPE html>
4 <html>
5 <head>
6 <meta charset="UTF-8">
7 <title>Home</title>
8 </head>
9 <body>
10
11 <center>
12 <h3>Welcome to Home</h3>
13
14
15     Cookie[] cookies = request.getCookies();
16     for(Cookie cookie : cookies){
17
18         <%= cookie.getName() %> | <%= cookie.getValue() %> <br>
19
20     }
21
22     String name = request.getParameter("name");
23     String email = request.getParameter("email");
24
25
26
27     Name: <%= name %> <br>
28     Email: <%= email %>
29
30 </center>
31
32 </body>
33 </html>

```

### 5.3 Go back and click the **Login** link

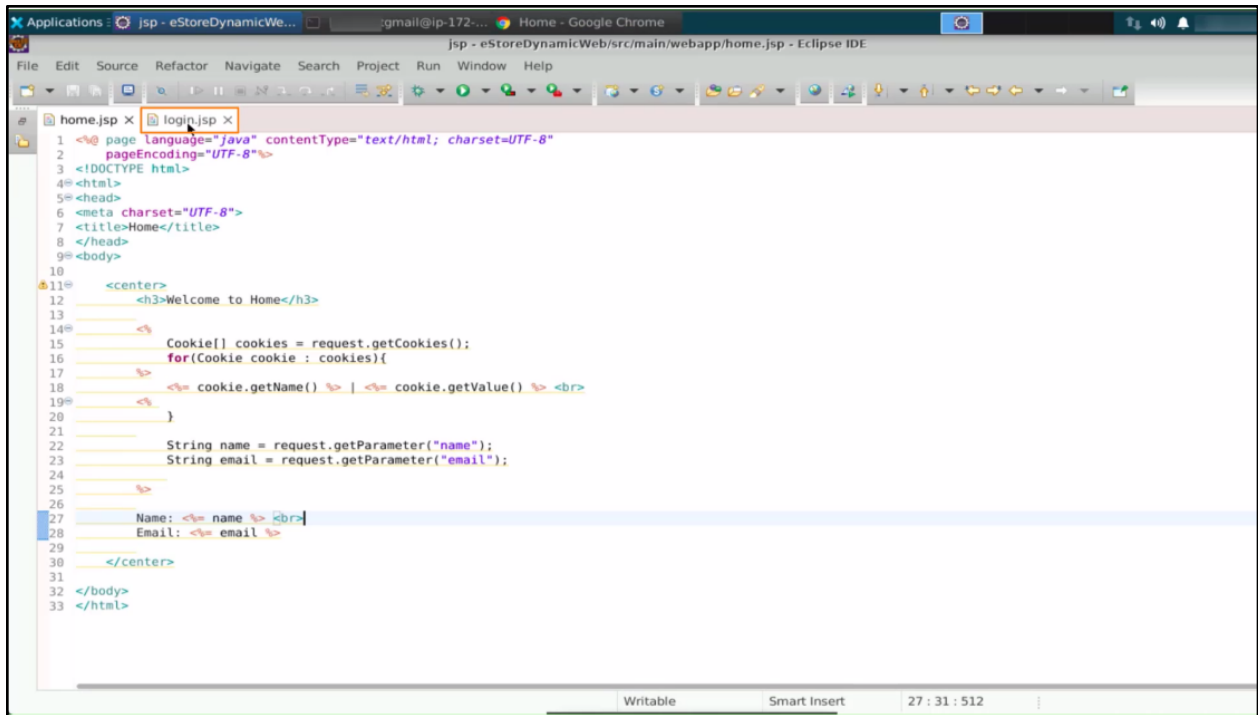


### 5.4 Click the **Enter Home** link



You will see the user credentials displayed in the URL.

## 5.5 Navigate back to the project and go to the **login.jsp** file



```
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>Home</title>
8 </head>
9 <body>
10
11 <center>
12 <h3>Welcome to Home</h3>
13
14
15 <% Cookie[] cookies = request.getCookies();
16 <% for(Cookie cookie : cookies){
17 <% <= cookie.getName() | <= cookie.getValue() > <br>
18 <% <=
19 <% }
20
21 <% String name = request.getParameter("name");
22 <% String email = request.getParameter("email");
23
24 <%
25
26 <% Name: <= name > <br>
27 <% Email: <= email >
28
29 </center>
30
31 </body>
32 </html>
```

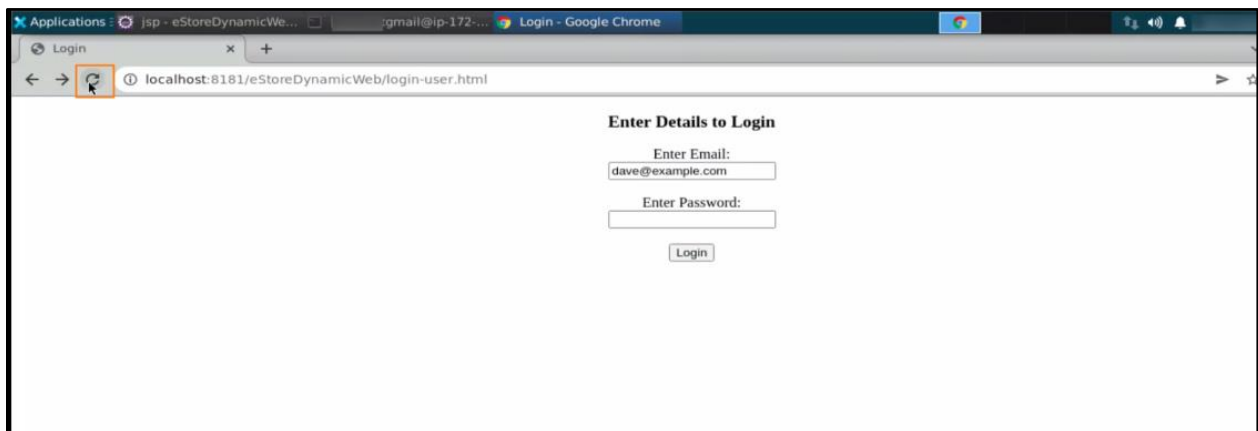
## 5.6 Create another response object

```

9      User user = new User();
10
11      user.email = request.getParameter("txtEmail");
12      user.password = request.getParameter("txtPassword");
13
14      DB db = DB.getDB();
15
16      String sql = "select * from Users where email = ? and password = ?";
17      PreparedStatement preparedStatement = db.connection.prepareStatement(sql);
18      preparedStatement.setString(1, user.email);
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 from 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          //String res = "<a href='home.jsp?name="+user.name+"&email="+user.email+"'>Enter Home</a>";
34          String res = "<form action='home.jsp' method='post'>"
35              + "<input type='hidden' name='name' value='"+user.name+"'><br>"
36              + "<input type='hidden' name='email' value='"+user.email+"'><br>"
37              + "<input type='submit' value='Enter Home'><br>"
38              + "</form>";
39
40          out.print(res);
41
42          <h3>Thank Your For Logging in: <= user.name </h3>
43
44      }else{
45
46

```

5.7 Go back to the browser and refresh the page



### 5.8 Enter your email address and password in the login form



Applications : jsp - eStoreDynamicWe... :gmail@ip-172-... Login - Google Chrome

← → ↻ localhost:8181/eStoreDynamicWeb/login-user.html

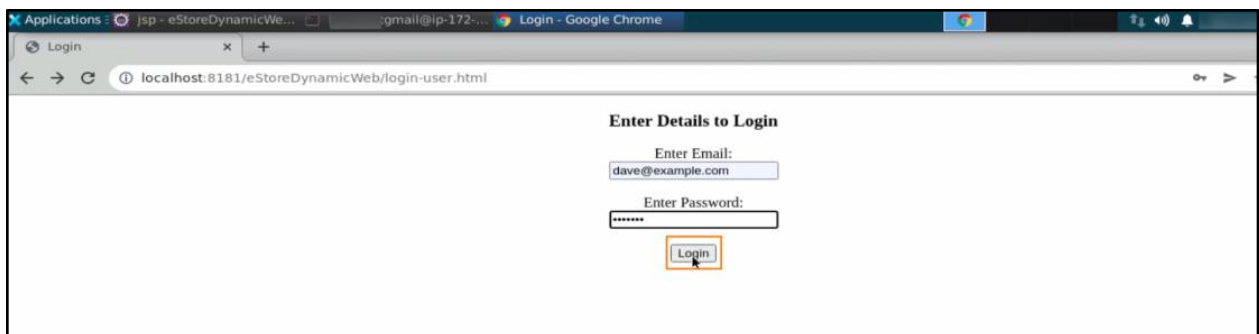
**Enter Details to Login**

Enter Email:  
dave@example.com

Enter Password:  
\*\*\*\*\*

Login

### 5.9 Click the Login button



Applications : jsp - eStoreDynamicWe... :gmail@ip-172-... Login - Google Chrome

← → ↻ localhost:8181/eStoreDynamicWeb/login-user.html

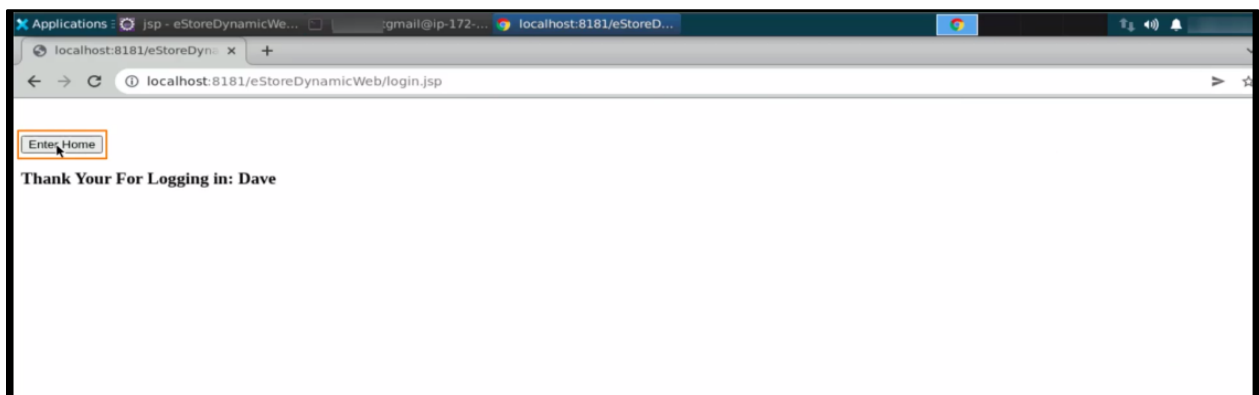
**Enter Details to Login**

Enter Email:  
dave@example.com

Enter Password:  
\*\*\*\*\*

Login

### 5.10 Click the Enter Home link



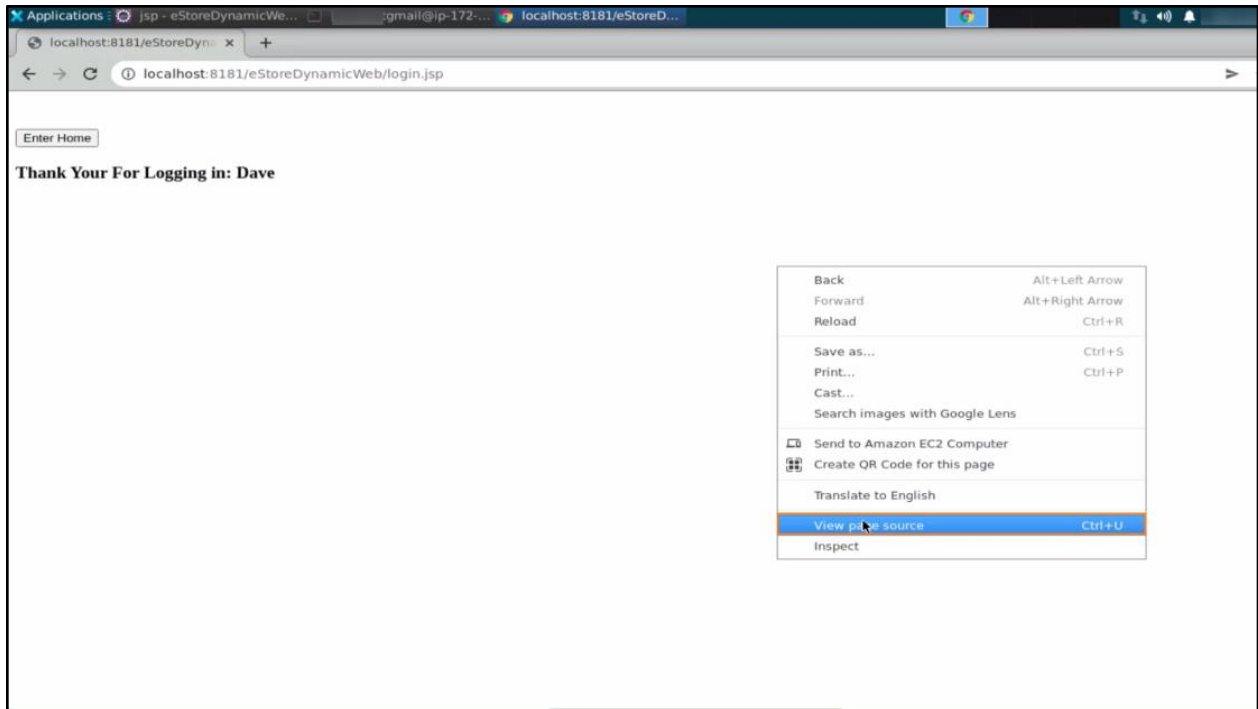
Applications : jsp - eStoreDynamicWe... :gmail@ip-172-... localhost:8181/eStoreD...

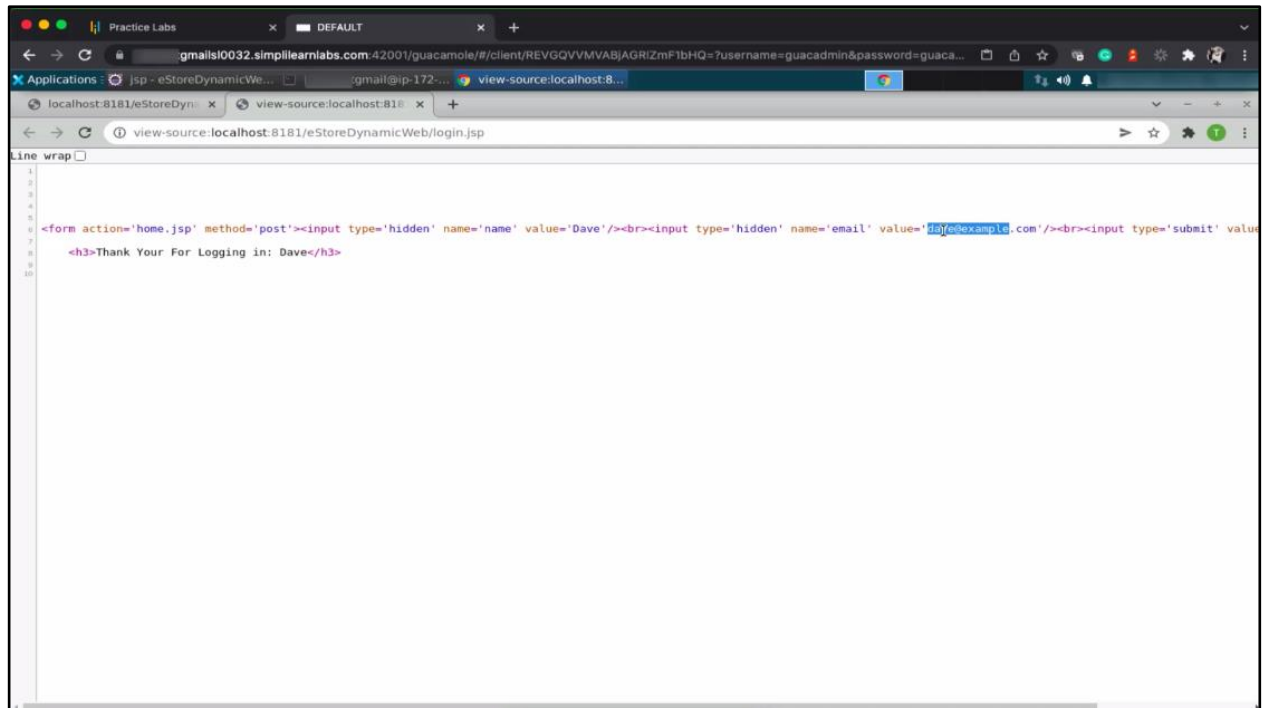
← → ↻ localhost:8181/eStoreDynamicWeb/login.jsp

Enter\_Home

Thank Your For Logging in: Dave

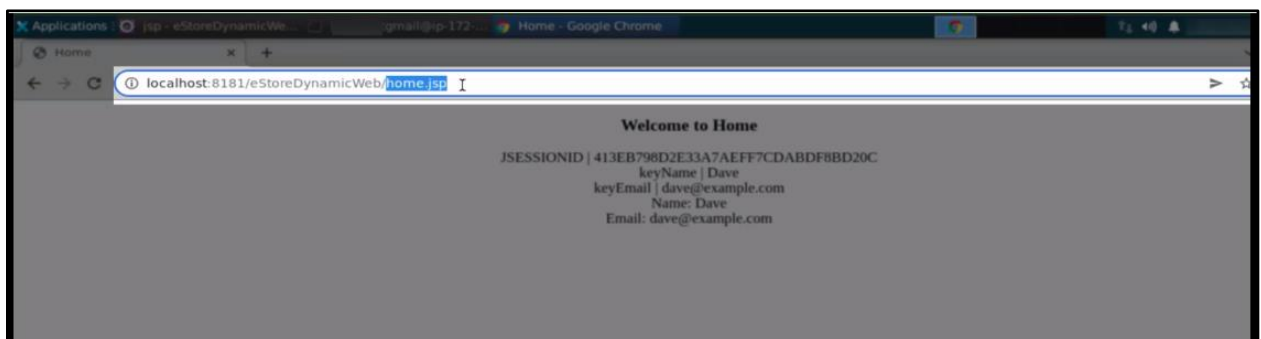
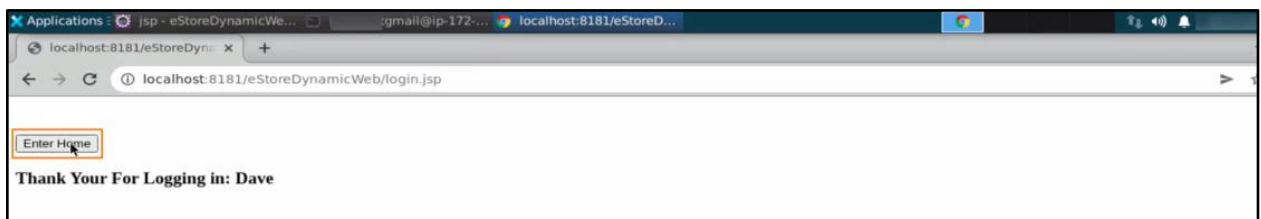
## 5.11 Right-click the page and select **View page source**





You will see the email ID displayed as the value in the HTML source code.

5.1 Go back and click on the **Enter Home** link again

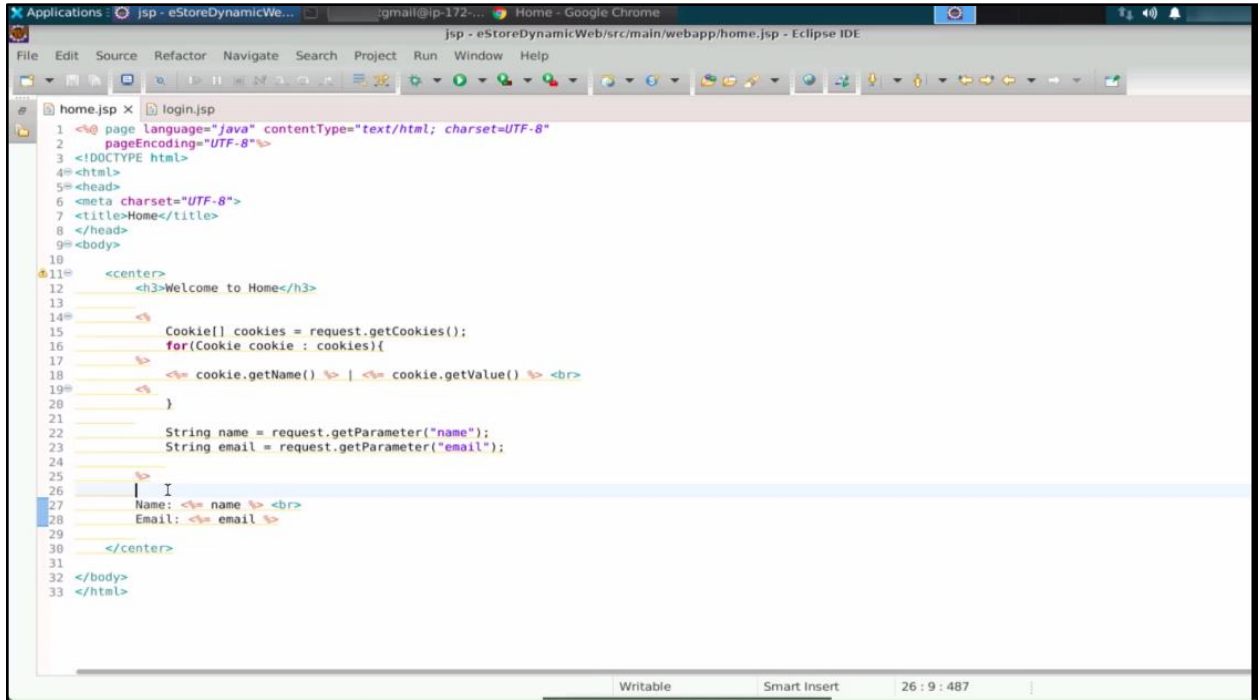


You will see **home.jsp** in the URL.



## Step 6: Write an operation for hidden field data

### 6.1 Go back to the **home.jsp** page

A screenshot of the Eclipse IDE showing the code for a JSP file named home.jsp. The code is written in Java and HTML. It includes a page header with language, contentType, and charset attributes. The page encoding is set to UTF-8. The HTML structure includes a head section with a title 'Home' and a body section. The body contains a center div with a welcome message and a list of cookies. It also displays the name and email parameters from the request. The status bar at the bottom indicates 'Writable', 'Smart Insert', and '26 : 9 : 487'.

### 6.2 Write an operation to read and display the data from the hidden field in the form

```

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>Home</title>
8 </head>
9 <body>
10
11   <center>
12     <h3>Welcome to Home</h3>
13
14     <div>
15       Cookie[] cookies = request.getCookies();
16       for(Cookie cookie : cookies){
17         <div>
18           <div> cookie.getName() </div> | <div> cookie.getValue() </div> <br>
19         </div>
20       }
21
22       String name = request.getParameter("name");
23       String email = request.getParameter("email");
24
25       String txtName = request.getParameter("txtName");
26       String txtEmail = request.getParameter("txtEmail");
27
28     <div>
29       <h3>URL ReWriting</h3>
30       Name: <div> name </div> <br>
31       Email: <div> email </div>
32
33       <h3>Hidden From Filed Data</h3>
34       Name: <div> txtName </div> <br>
35       Email: <div> txtEmail </div>
36     </div>
37   </center>
38

```

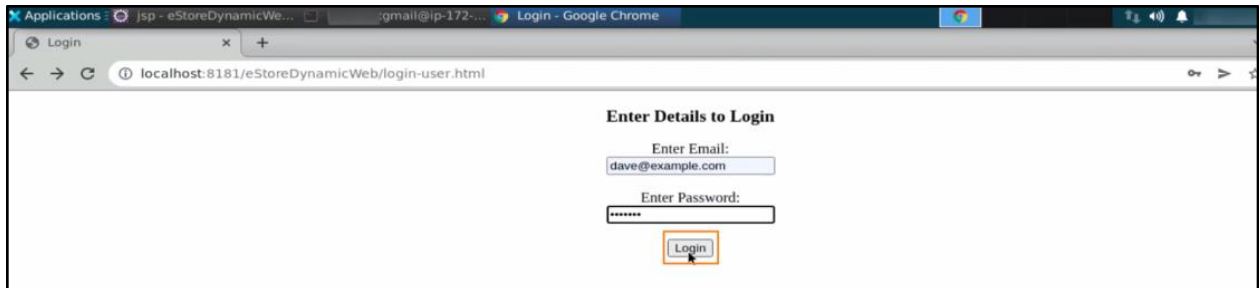
6.3 Go back to the browser and refresh the page



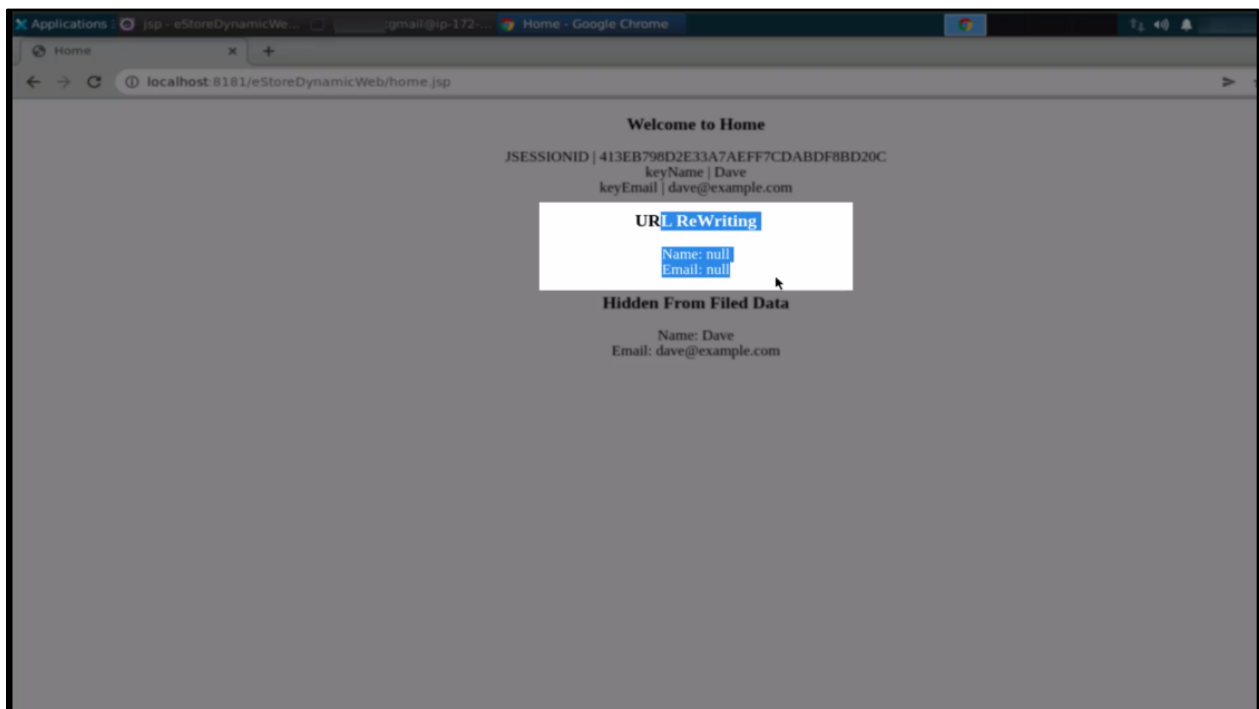
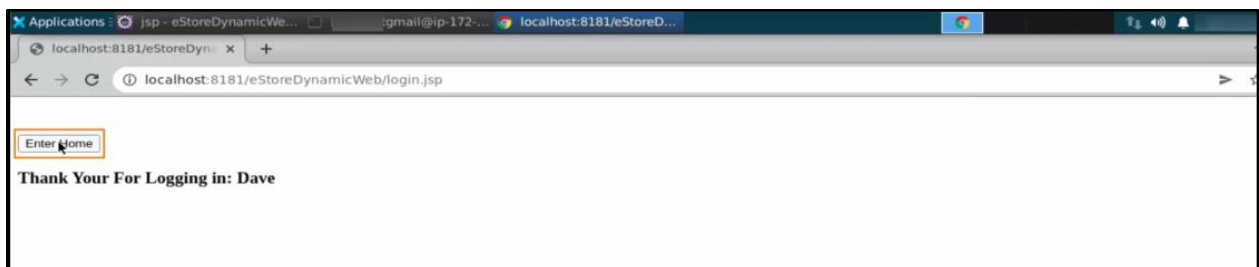
6.4 Enter your email address and password in the login form



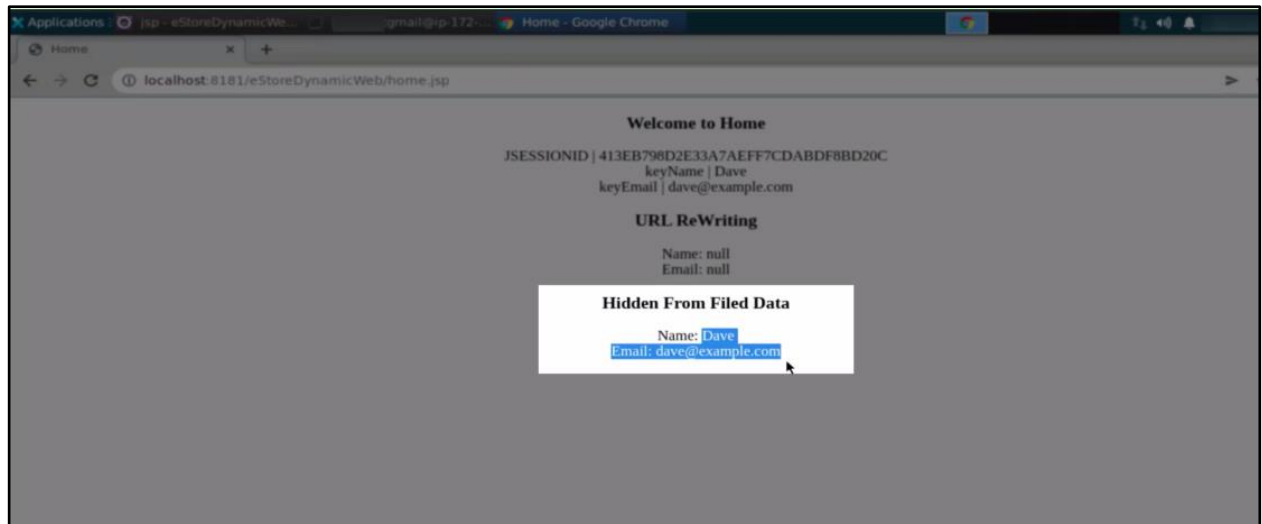
## 6.5 Click on the **Login** button



## 6.6 Click on the **Enter Home** link



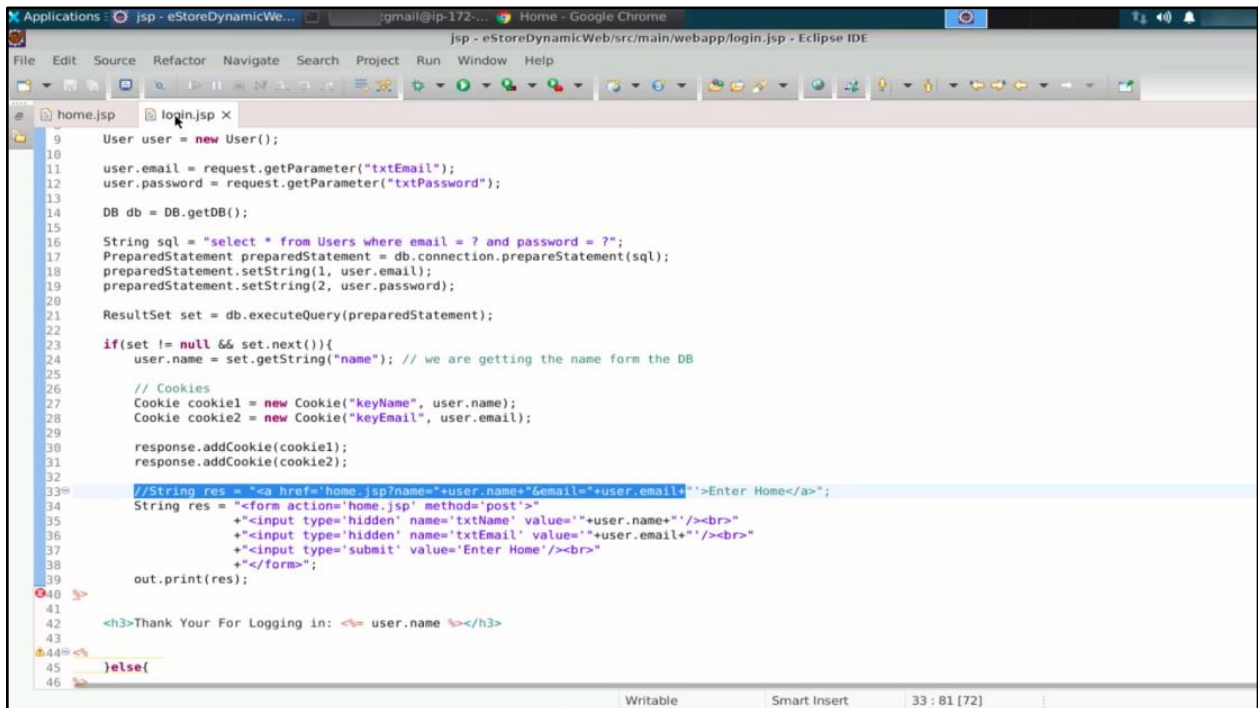
Observe if there is any data in the URL rewriting.



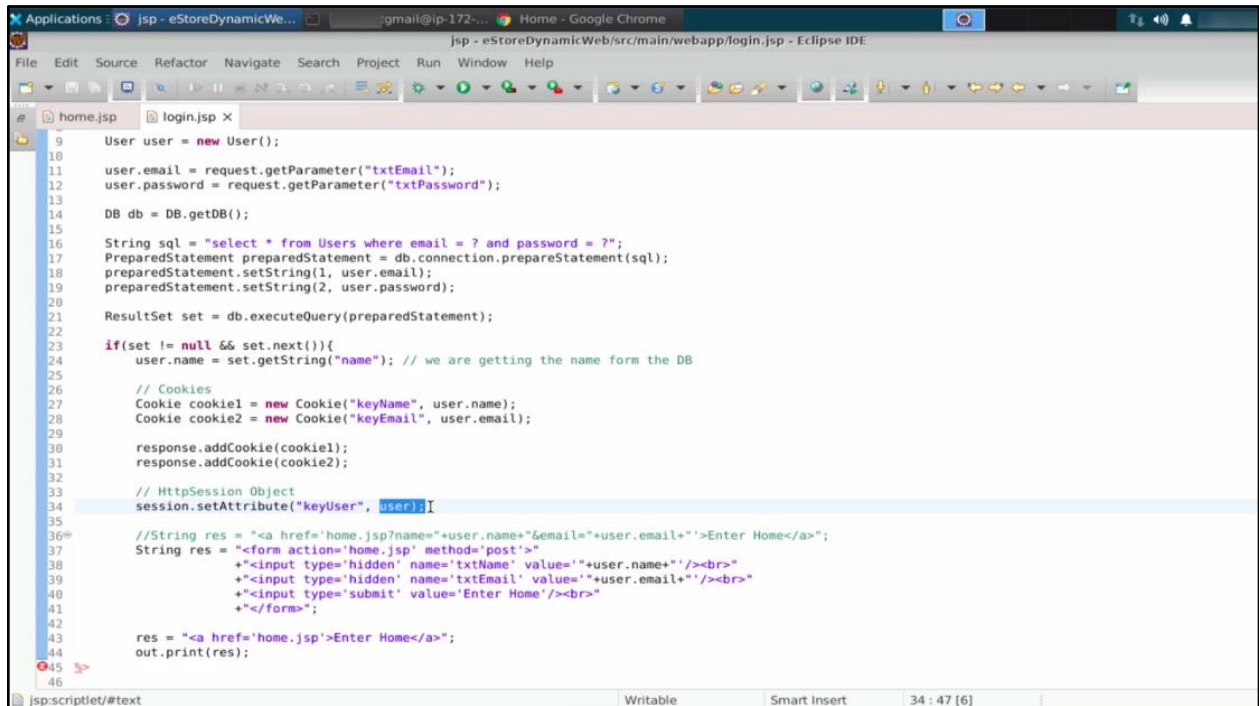
You will see the data printed from the hidden field.

## Step 7: Write an operation for the HTTP session object

### 7.1 Go back to the login.jsp page



7.2 Write an operation to retrieve and display values from the HTTP session object. This can be done using JSP scriptlets or JSP tags.

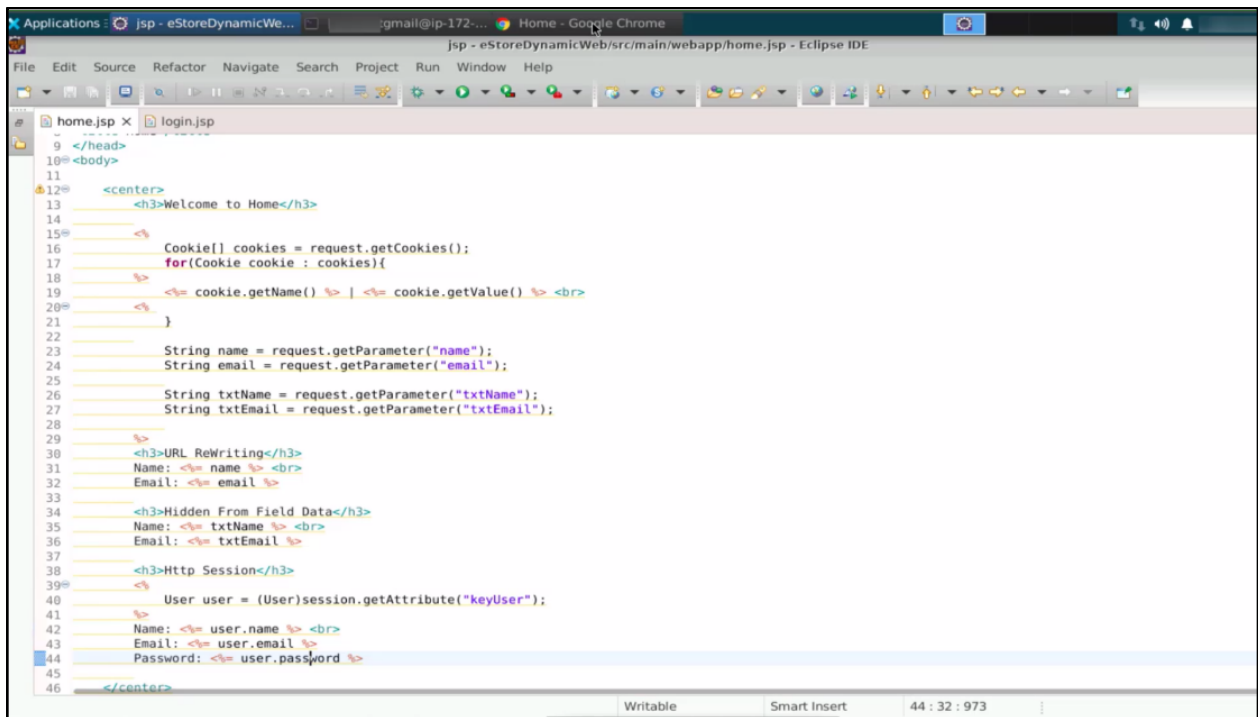


```

9      User user = new User();
10
11      user.email = request.getParameter("txtEmail");
12      user.password = request.getParameter("txtPassword");
13
14      DB db = DB.getDB();
15
16      String sql = "select * from Users where email = ? and password = ?";
17      PreparedStatement preparedStatement = db.connection.prepareStatement(sql);
18      preparedStatement.setString(1, user.email);
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 from 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

```

7.3 Go to the **home.jsp** page and write an operation to display values from the HTTP session object

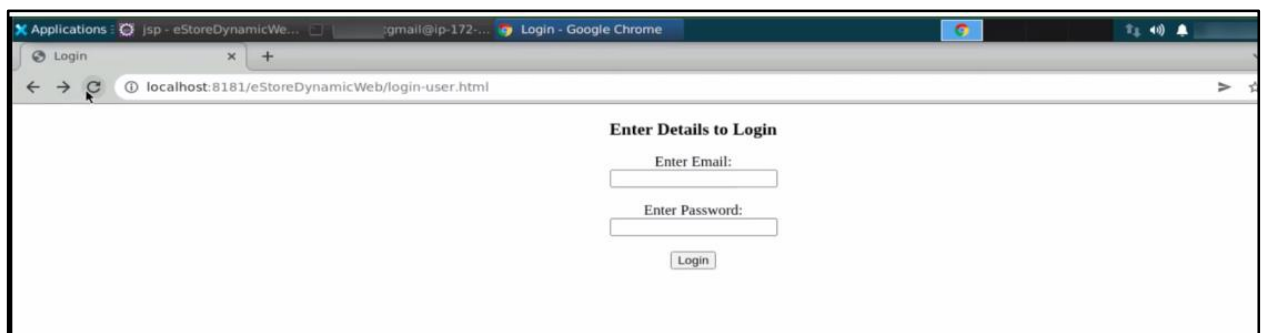


```

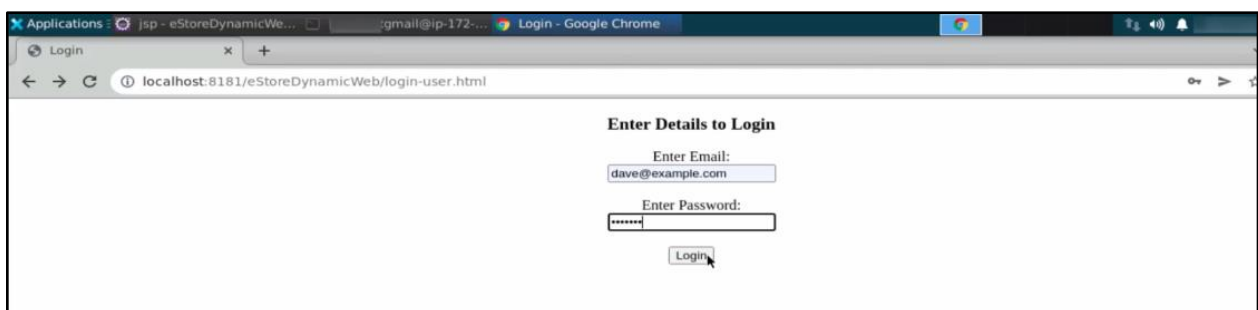
10<= </body>
11
12<= <center>
13<= <h3>Welcome to Home</h3>
14<=
15<=
16<= Cookie[] cookies = request.getCookies();
17<= for(Cookie cookie : cookies){
18<=
19<= <%= cookie.getName() %> | <%= cookie.getValue() %> <br>
20<=
21<= }
22<=
23<= String name = request.getParameter("name");
24<= String email = request.getParameter("email");
25<=
26<= String txtName = request.getParameter("txtName");
27<= String txtEmail = request.getParameter("txtEmail");
28<=
29<=
30<= <h3>URL Rewriting</h3>
31<= Name: <%= name %> <br>
32<= Email: <%= email %>
33<=
34<= <h3>Hidden From Field Data</h3>
35<= Name: <%= txtName %> <br>
36<= Email: <%= txtEmail %>
37<=
38<= <h3>Http Session</h3>
39<=
40<= User user = (User)session.getAttribute("keyUser");
41<=
42<= Name: <%= user.name %> <br>
43<= Email: <%= user.email %>
44<= Password: <%= user.password %>
45<=
46<= </center>

```

7.4 Go back to the browser and refresh the page



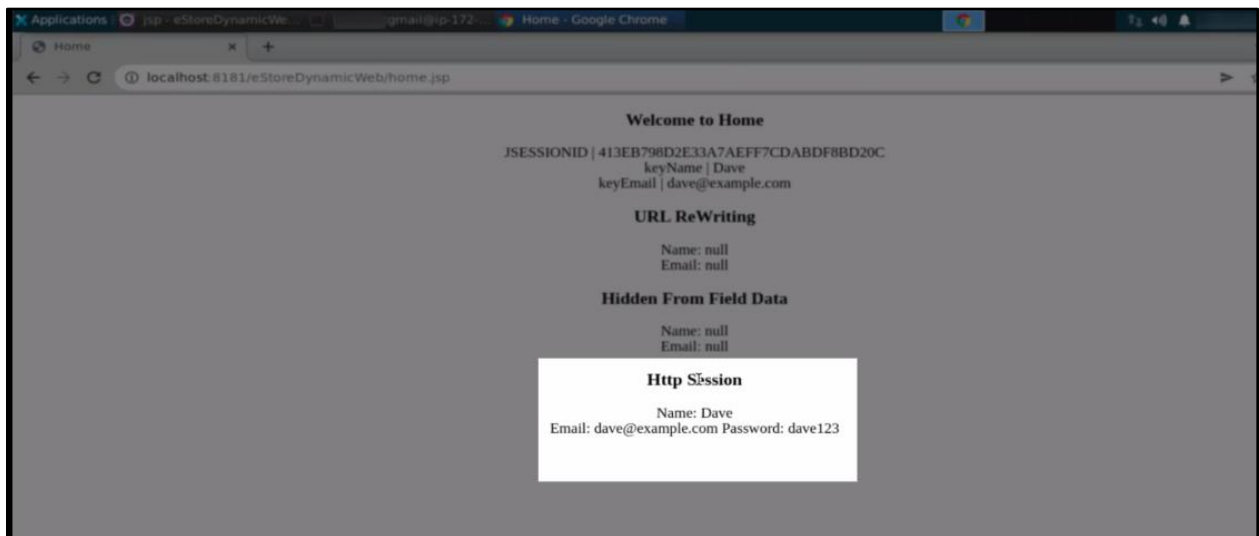
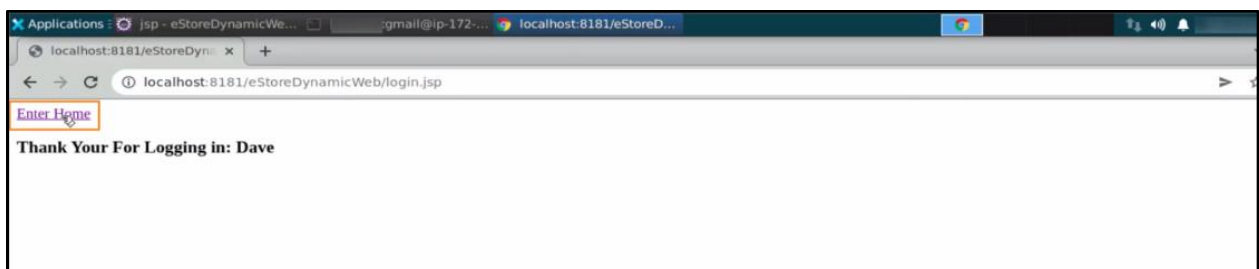
7.5 Enter your email address and password in the login form



## 7.6 Click on the **Login** button



## 7.7 Click on the **Enter Home** link



You will see the values from the HTTP session displayed on the page.

Following these steps, you have successfully implement session tracking in JSP (Java Server Pages).