UNIVERSITI MALAYSIA TERENGGANU

CSM3023 WEB BASED APPLICATION DEVELOPMENT (K1)

BACHELOR OF COMPUTER SCIENCE (MOBILE COMPUTING) WITH HONORS

LAB REPORT

LAB 3 - JSP: Scriplet, Page Directive & Include Directive

SEMESTER II 2023/2024

Prepared for:

Dr MOHAMAD NOR BIN HASAN

Prepared by:

IZZUL ILYAS BIN ROSLAN (S65343)

Task 1: Passing Data from Main JSP's Page to Other JSP's Page

Objective : To demonstrate the use of request.getParameter ("fieldName")
for passing input from one JSP' page to another JSP's page.

memberRegister.jsp

memberProcessing.jsp


```jsp
<%--
    Document    : memberProcessing
    Created on  : 17 Apr 2024, 3:06:56 pm
    Author      : izzul
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Lab 6 - Task 6</title>
    </head>
    <body>
        <h1>Passing data from main JSP's page to other JSP's page</h1>
        <fieldset>
            <%
                //Define variable
                String myIC = null;
                String myName = null;

                //Use request.getParameter() method to retrieve data from main's form...
                myIC =request.getParameter("my_icno");
                myName = request.getParameter("my_name");
            %>

            <!--Display the output-->
            <p>Thankyou for registering for this event!</p><!-- comment -->
            <p>This is your detail:</p>
            <p>IC No : <%=myIC%> </p><!-- comment -->
            <p>Name : <%=myName%> </p>
        </fieldset>
```


Passing data from main JSP's page to other JSP's page

Thankyou for registering for this event!

This is your detail:

IC No : 021128110413

Name : IZZUL ILYAS BIN ROSLAN
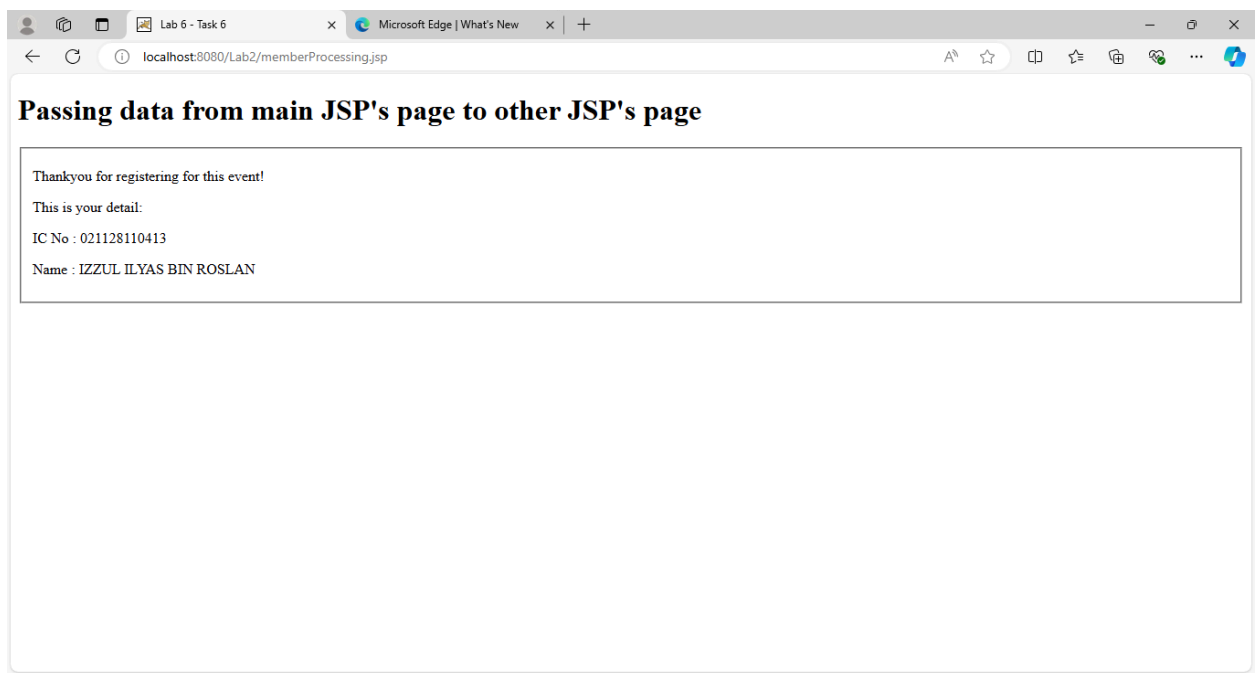
Reflection 1. How do you want to submit specific information from one form to next form? 2. What happened if the field name you specify in request.getParameter("field_name") in second page is different from the field name you defined in first page?

Task 2: Using Mathematics Operations in JSP

Objective : To demonstrate the use of request.getParameter ("Mathematics operations") in JSP's page.

```jsp
<%--
    Document   : Calculator
    Created on : 17 Apr 2024, 3:21:48 pm
    Author     : izzul
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>JSP Page</title>
    </head>
    <body bgcolor = "#a00FFF" text ="gold">
        <%
            String num1 ="0", num2 ="0";
            int result = 0;
            String op ="+";

            char opchar = op.charAt(0);
            if (request.getParameter("op") !=null) {
            op = request.getParameter("op");
            opchar = op.charAt(0);

            num1 = request.getParameter("operand1");
            num2 = request.getParameter("operand2");

            switch(opchar){
            case '0': result =Integer.parseInt(num1) + Integer.parseInt(num2);
            break;
            case '1': result =Integer.parseInt(num1) - Integer.parseInt(num2);
            break;
```

```jsp
            case '2': result =Integer.parseInt(num1) * Integer.parseInt(num2);
            break;
            case '3': result =Integer.parseInt(num1) / Integer.parseInt(num2);
            break;
            case '4': result =Integer.parseInt(num1) % Integer.parseInt(num2);
            break;
            }
            }
        %>
        <center>
        <h2>Basic calculator program in jsp</h2>
        <form method ="get" name="f1">
            <input type="text" size="20" name= "operand1" value= <%= num1 %> />

            <select name = op size = "1">
                <option value ="0" >+</option>
                <option value ="1" >-</option>
                <option value ="2" >*</option>
                <option value ="3" >/</option>
                <option value ="4" >%</option>
            </select>

            <input type="text" size="20" name="operand2" value= <%= num2 %>/>
            <p><br><br><br><br>
                <input type =submit value= Calculate>
        </form>

                Result = <%= result + "" %>
        </body>
</html>
```

Reflection

1. How do you want to submit specific information from one form to next form?

By using post method and assigning field name.

2. What happened if the field name you specify in request.getParameter("field_name") in second page is different from the field name you defined in first page?

The information we intended to refer cannot be referred

Task 4: Perform Calculation of Car Loan

Objective : Passing input to next page for further processing.


```html
<!DOCTYPE html>
<!--
Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
Click nbfs://nbhost/SystemFileSystem/Templates/JSP_Servlet/Html.html to edit this template
-->
<html>
    <head>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <title>Car Loan Calculation</title>
    </head>
    <body>
        <h1>Perform Car Loan Calculation</h1>
        <form id="loanFrm" action="calculateLoan.jsp" method="post">
            <fieldset>
                <legend>Loan Calculation</legend>
                <label for="amount">Loan Amount*</label>
                <input type="text" id="amount" name="loan_amount" placeholder="Amount"><br><br>

                <label for="period">Period</label>
                <select name="period" size="1">
                    <option value="3">3 years</option>
                    <option value="4">4 years</option>
                    <option value="5">5 years</option>
                    <option value="6">6 years</option>
                    <option value="7">7 years</option>
                </select><br><br>

                <p><input type="submit" id="btnSubmit" value="Submit"/>
                    <input type="reset" id="btnCancel" value="Cancel"/>
                </p>
            </fieldset>
```
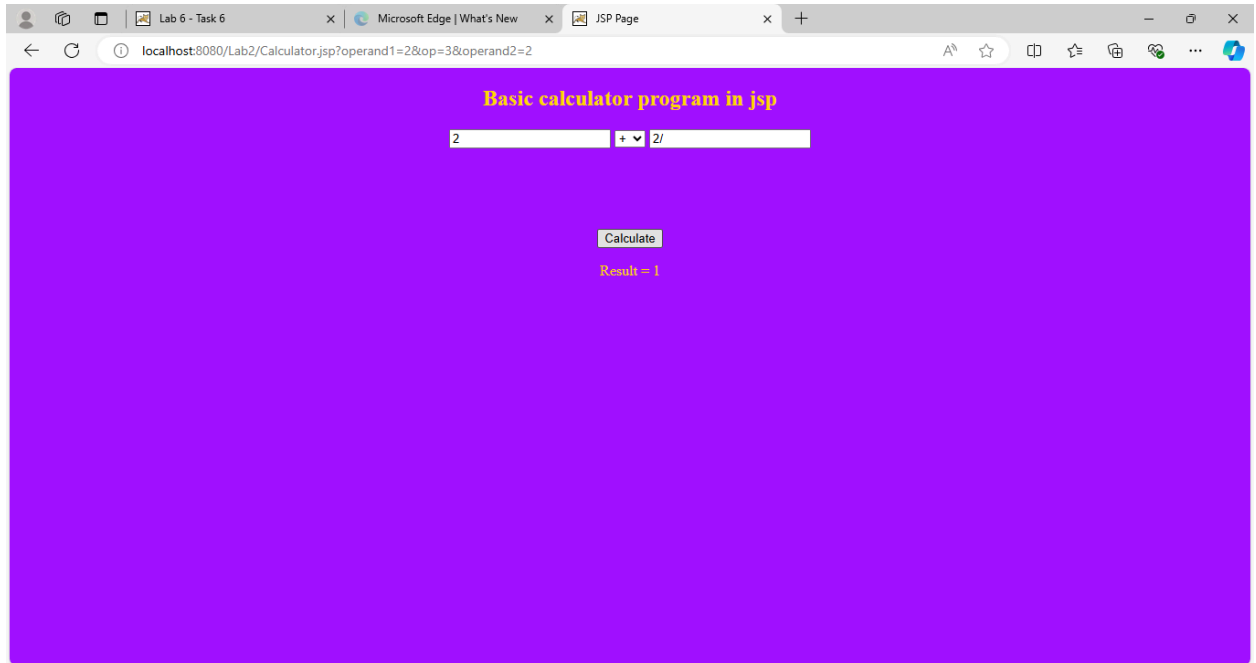


```html
                <legend>Loan Calculation</legend>
                <label for="amount">Loan Amount*</label>
                <input type="text" id="amount" name="loan_amount" placeholder="Amount"><br><br>

                <label for="period">Period</label>
                <select name="period" size="1">
                    <option value="3">3 years</option>
                    <option value="4">4 years</option>
                    <option value="5">5 years</option>
                    <option value="6">6 years</option>
                    <option value="7">7 years</option>
                </select><br><br>

                <p><input type="submit" id="btnSubmit" value="Submit"/>
                    <input type="reset" id="btnCancel" value="Cancel"/>
                </p>
            </fieldset>
        </form>
        <p>&copy; 2024-Izzul Ilyas Sdn.Bhd.</p>
    </body>
</html>
```

Start Page | memberProcessing.jsp | memberRegister.jsp | Calculator.jsp | calculateCarLoan.html | index.html | calculateLoan.jsp

Source | History

```jsp
1  <%--
2      Document   : calculateLoan
3      Created on : 16 Jun 2024, 5:56:35 pm
4      Author     : izzul
5  --%>
6
7  <%@page contentType="text/html" pageEncoding="UTF-8"%>
8  <!DOCTYPE html>
9  <html>
10     <head>
11         <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
12         <title>calculate Car Loan</title>
13
14         <style>
15             p{
16                 size: 24px;
17                 font-family: Courier New;
18                 font-weight: bold;
19             }
20             h2{
21                 color: blue;
22                 font-family: Courier New;
23             }
24         </style>
25     </head>
26     <body>
27         <h1>Perform Car Loan Calculation</h1>
28         <fieldset>
29             <%
30                 String dAmount = request.getParameter("loan_amount");
31                 double amount = Double.parseDouble(dAmount);
32
```

Output

42:24   INS   Unix (LF)

Start Page | memberProcessing.jsp | memberRegister.jsp | Calculator.jsp | calculateCarLoan.html | index.html | calculateLoan.jsp

Source | History

```jsp
33                 String dPeriod = request.getParameter("period");
34                 int period = Integer.parseInt(dPeriod);
35
36                 double total = 0;
37
38                 if (period>5){
39                 total = amount * 1.045;
40                 }
41                 else{
42                 total = amount * 1.028;
43                 }
44             %>
45
46             <h2>Details of car loan: </h2>
47             <p>Loan Request : RM<%=amount%></p>
48             <p>Period of Payment : <%=period%> </p>
49             <p>Total Loan (+ interest): RM<%=total%></p>
50
51         </fieldset>
52             <p>&copy; 2024-Izzul Ilyas Sdn.Bhd.</p>
53     </body>
54  </html>
55
```

Perform Car Loan Calculation

┌─ Loan Calculation ──┐
│   │
│ Loan Amount* [28000   ]   │
│   │
│ Period [4 years ▾]   │
│   │
│   │
│ [Submit] [Cancel]   │
│   │
└──┘

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Perform Car Loan Calculation

┌──┐
│   │
│ **Details of car loan:**   │
│   │
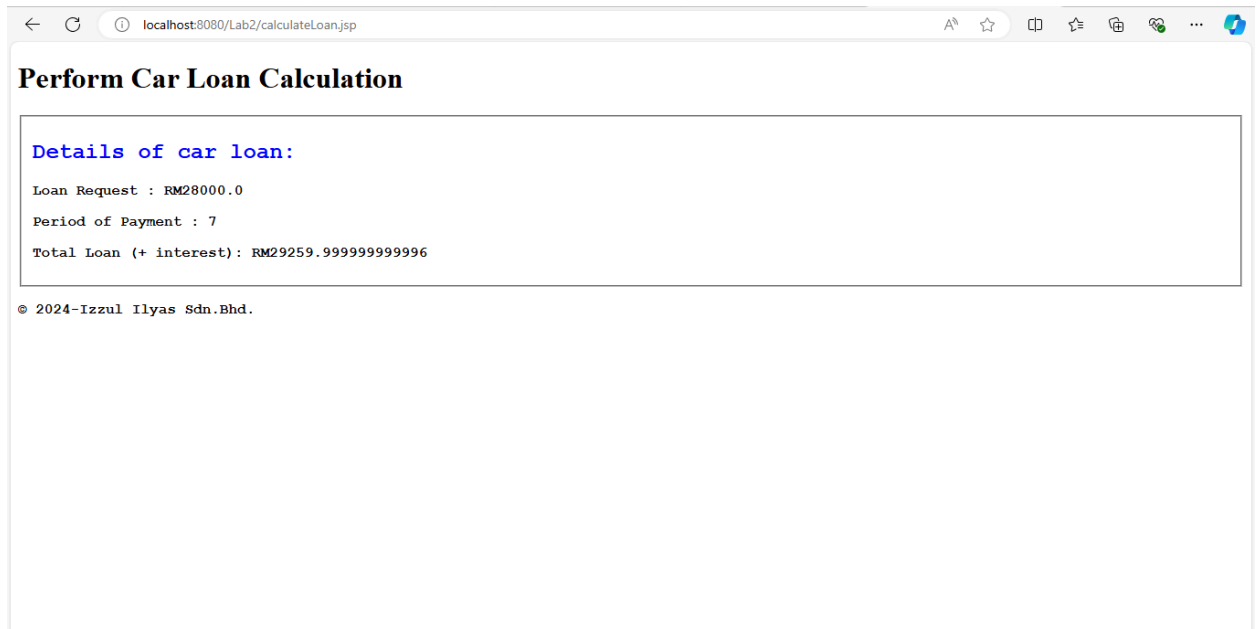│ Loan Request : RM28000.0   │
│   │
│ Period of Payment : 4   │
│   │
│ Total Loan (+ interest): RM28784.0   │
│   │
└──┘

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Perform Car Loan Calculation

Details of car loan:

Loan Request : RM28000.0

Period of Payment : 7

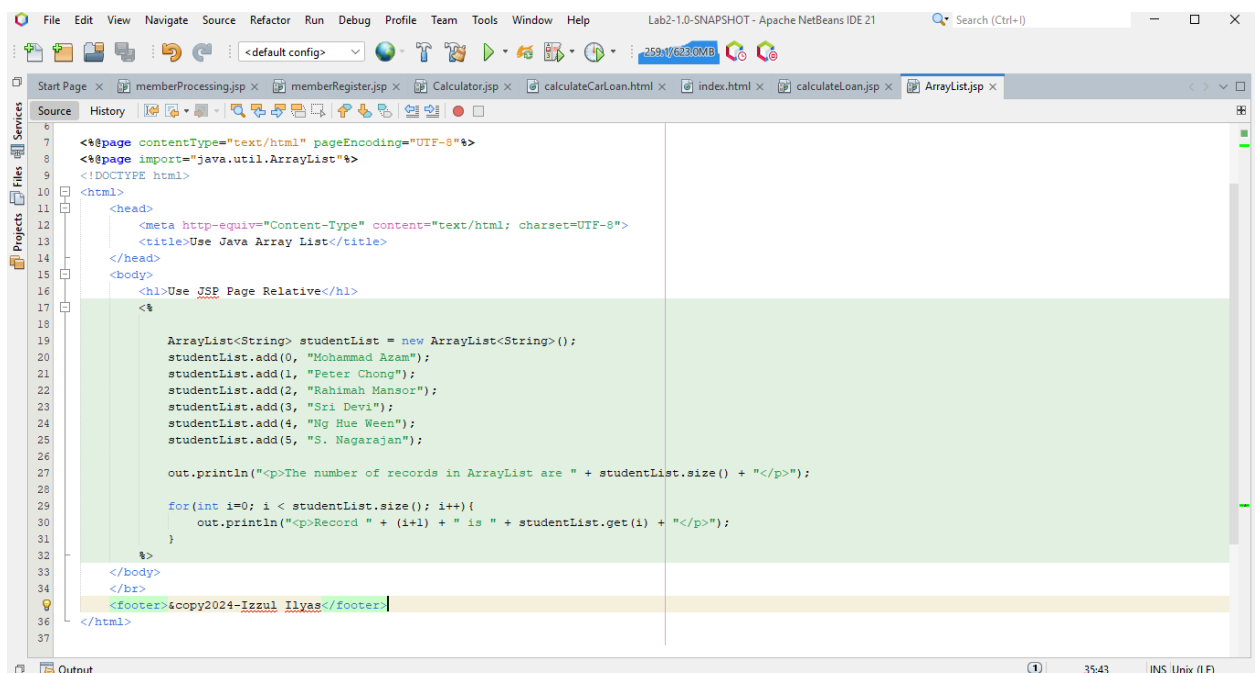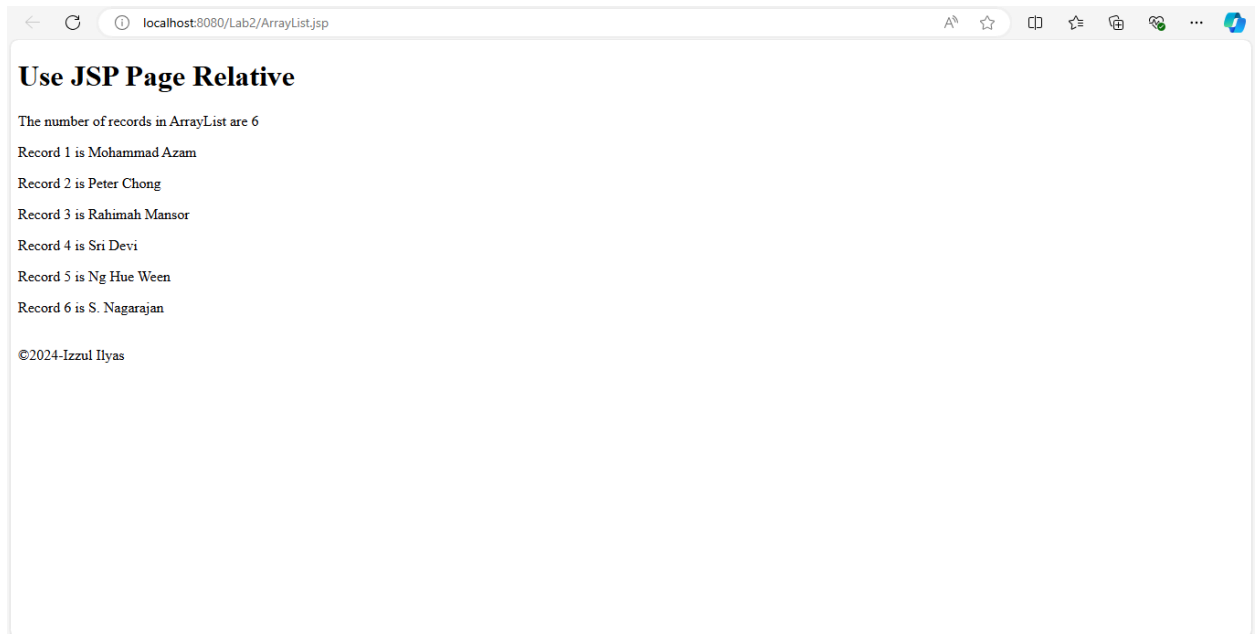Total Loan (+ interest): RM29259.999999999996

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Reflection
1. How you want to retrieve data from previous page?
2. Where the construction of logic occur for calculating Total Loan (+ interest) ?

Task 5: Using JSP Page Directive to Call Java API

Objective : Use JSP page directive elements to call certain Java API.


```jsp
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page import="java.util.ArrayList"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Use Java Array List</title>
    </head>
    <body>
        <h1>Use JSP Page Relative</h1>
        <%

            ArrayList<String> studentList = new ArrayList<String>();
            studentList.add(0, "Mohammad Azam");
            studentList.add(1, "Peter Chong");
            studentList.add(2, "Rahimah Mansor");
            studentList.add(3, "Sri Devi");
            studentList.add(4, "Ng Hue Ween");
            studentList.add(5, "S. Nagarajan");

            out.println("<p>The number of records in ArrayList are " + studentList.size() + "</p>");

            for(int i=0; i < studentList.size(); i++){
                out.println("<p>Record " + (i+1) + " is " + studentList.get(i) + "</p>");
            }
        %>
    </body>
    </br>
    <footer>&copy2024-Izzul Ilyas</footer>
</html>
```

Use JSP Page Relative

The number of records in ArrayList are 6

Record 1 is Mohammad Azam

Record 2 is Peter Chong

Record 3 is Rahimah Mansor

Record 4 is Sri Devi

Record 5 is Ng Hue Ween

Record 6 is S. Nagarajan

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Reflection

1. What you have learnt fromthis exercise?

I have learnt how to import JSP page directive inside my JSP page.

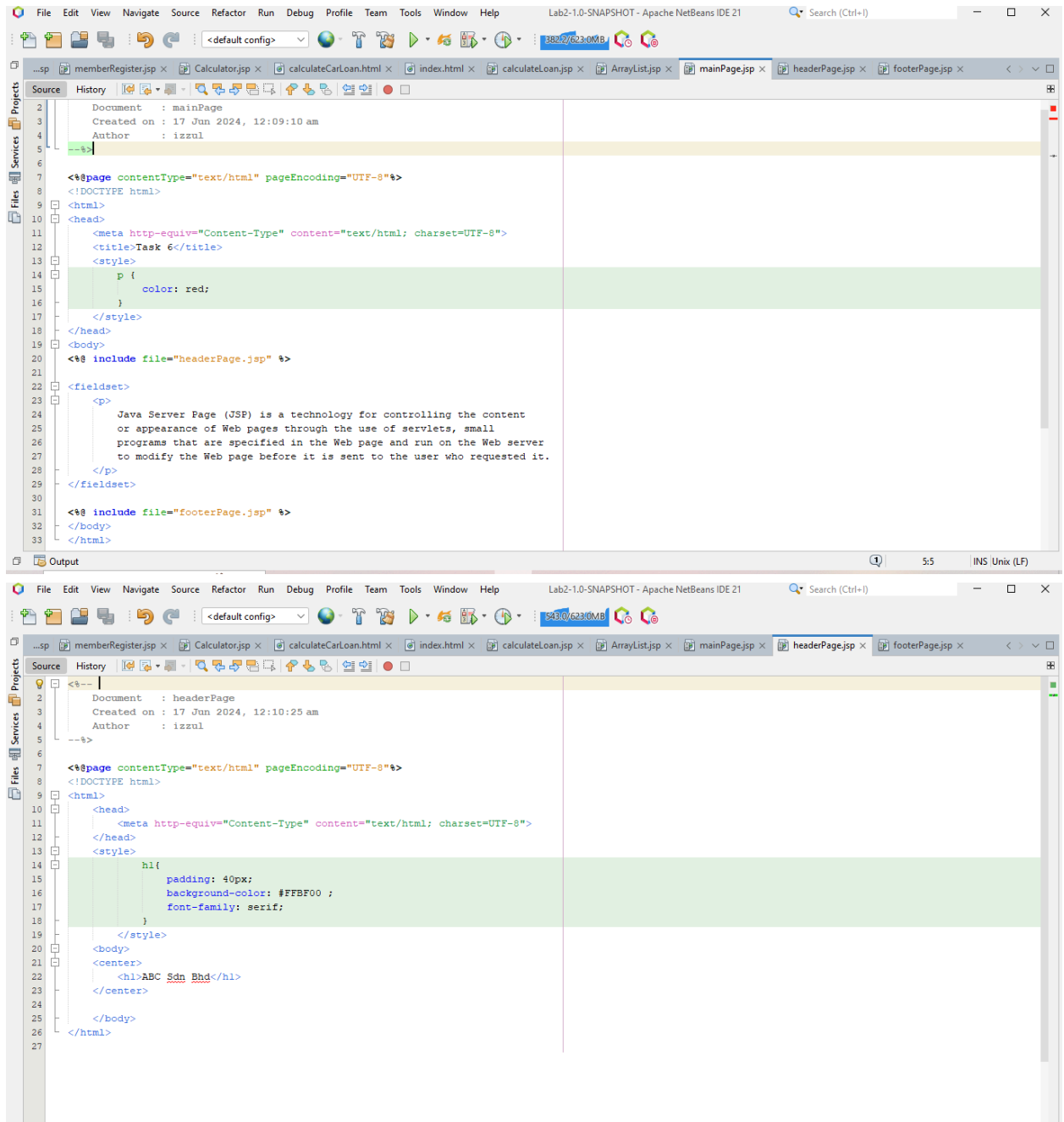2. Write a sample syntax how you want to use java Math object in JSP?

<%@page import="java.math.*"%>

3. List and write a sample syntax for THREE (3) of JSP page directive

```
<%@page import="java.util.Scanner"%>
<%@page import="java.util.math.pow"%>
<%@page import="java.util.*"%>
```
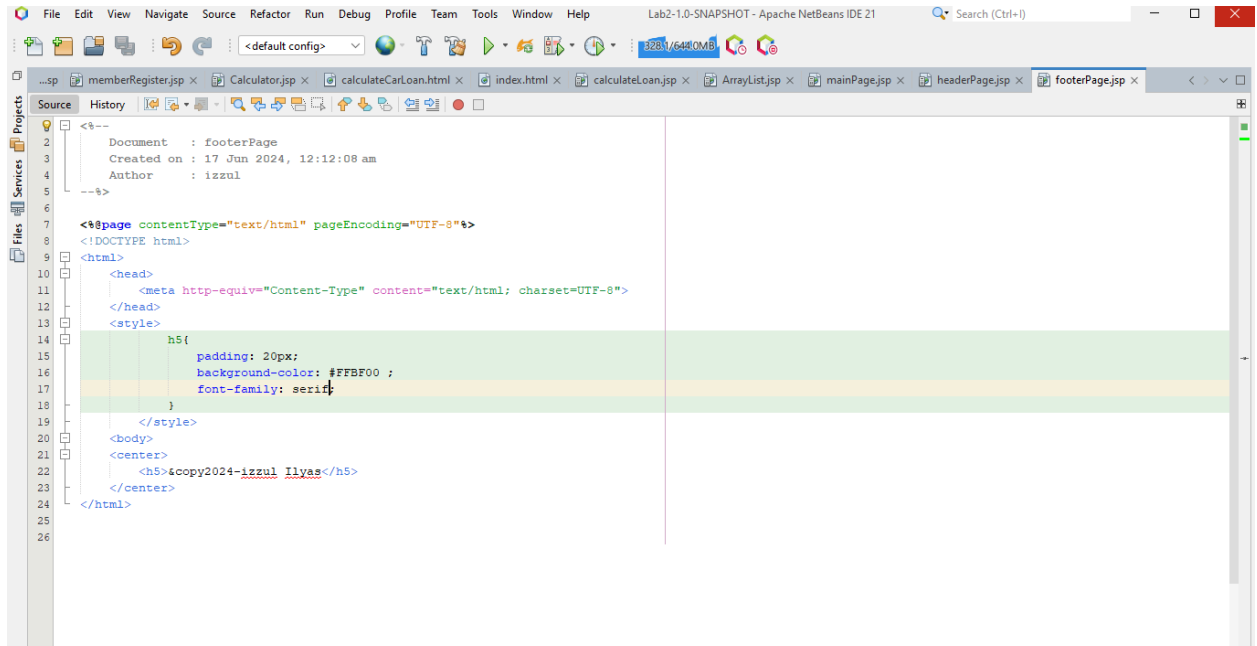
Task 6: Use JSP Include directive for JSP Page

Objective : Demonstrate the use of JSP Page Include directive.

Reflection

1. What you have learnt from this exercise?

I have learnt how to include a JSP page inside another JSP page.
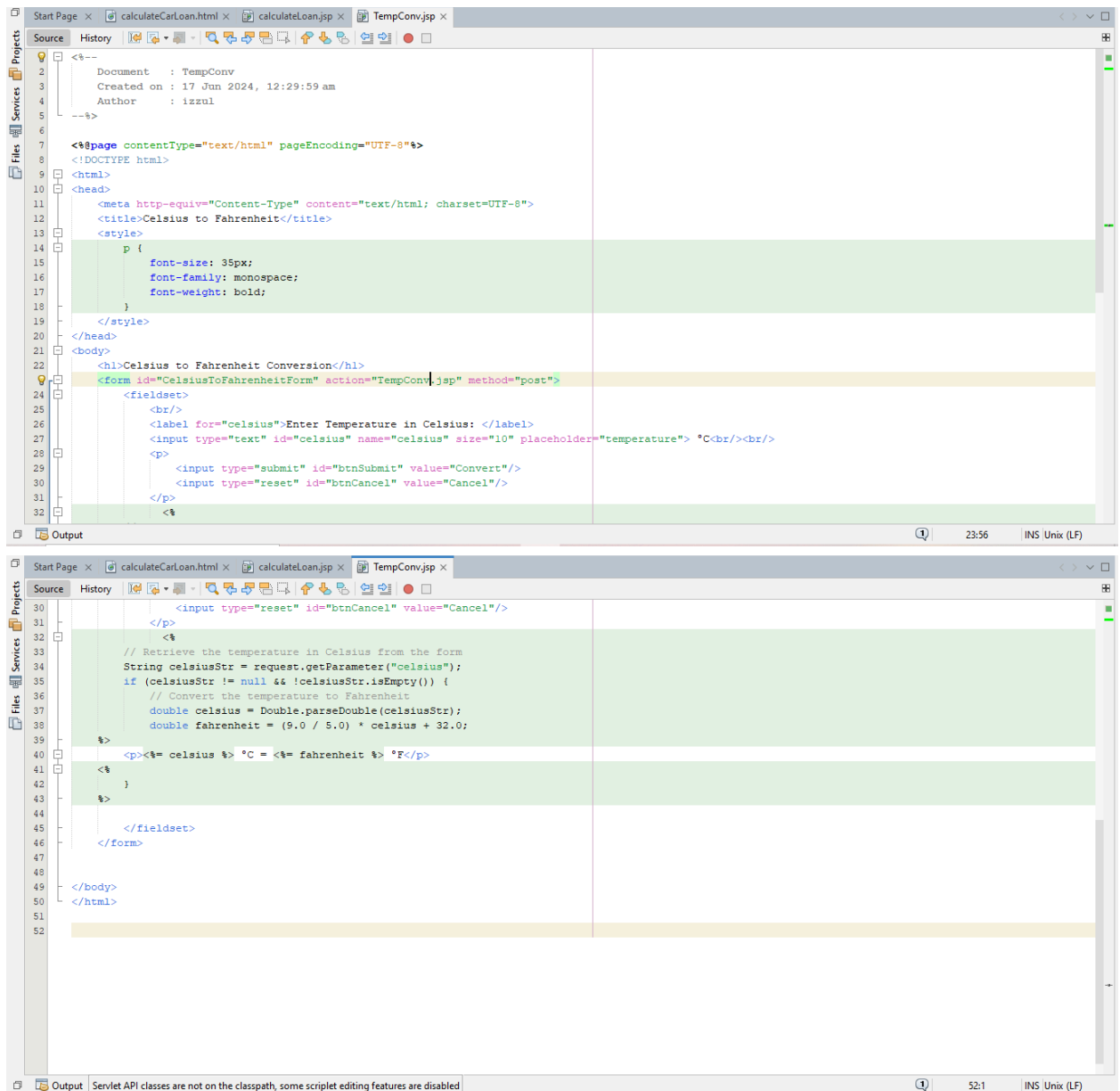
2. Write a syntax how you wantto include common.html file that located at a directory known as master. <%@ include file="master/common.html"%>
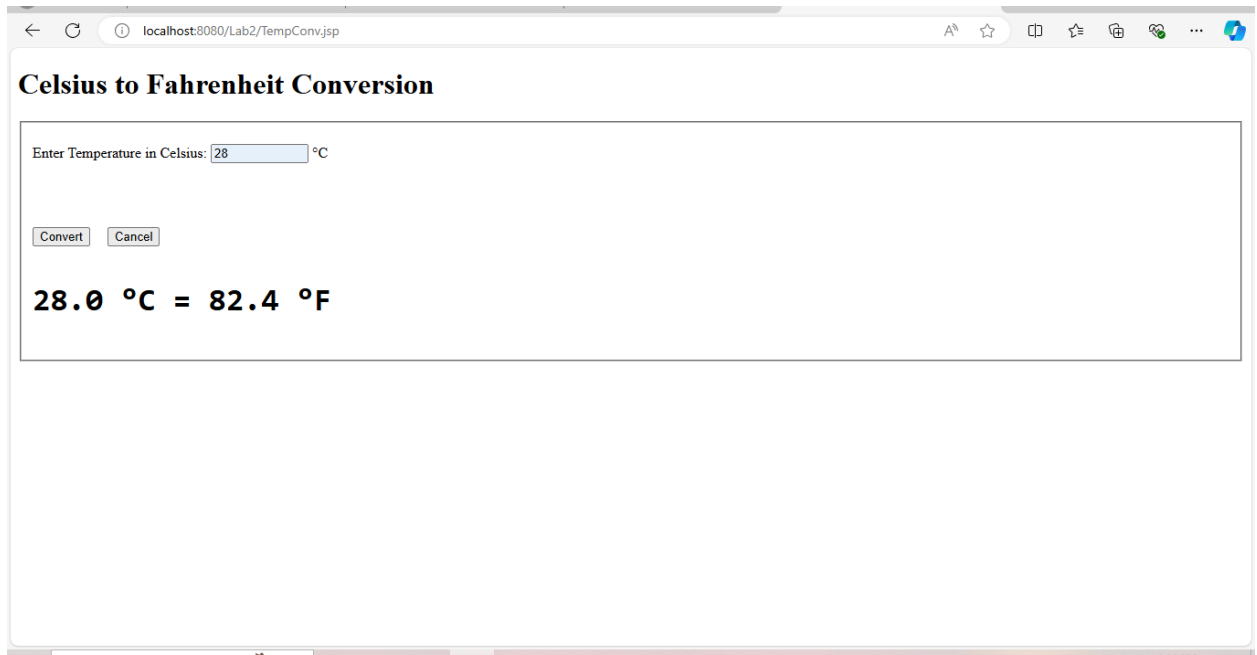
EXERCISE

Write a JSP's page to convert temperatures to Fahrenheit temperatures and via versa. The formula is given as:
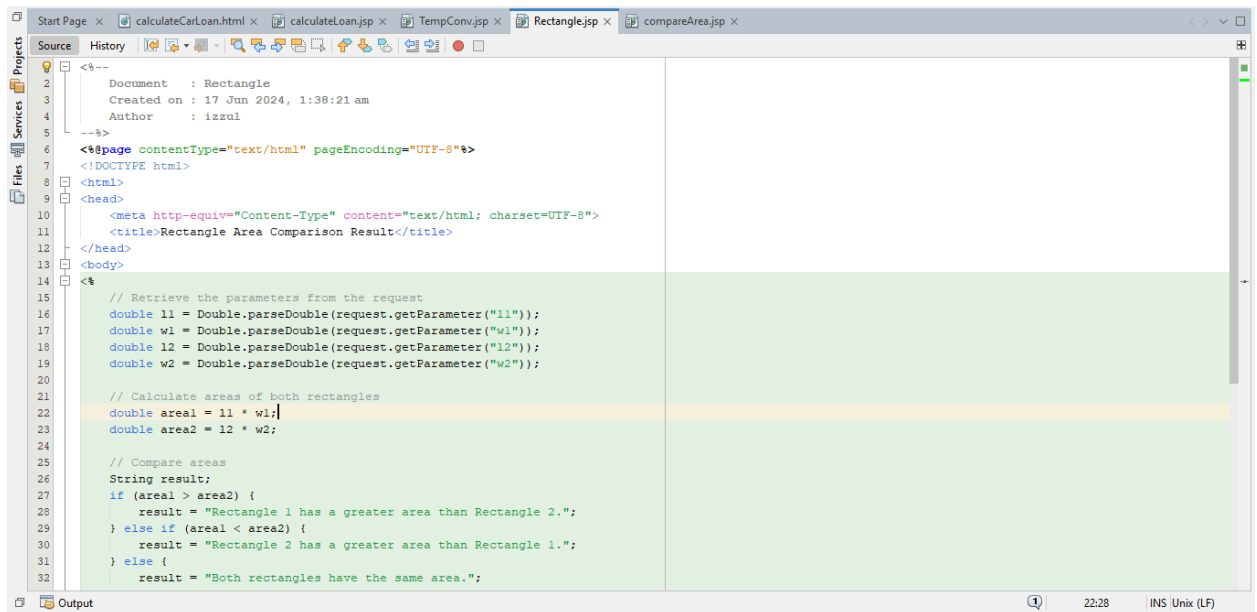
$$F = (9/5)C + 32$$

Your program should ask the user to enter a temperature in Celsius, and then display the temperature converted to Fahrenheit.

```jsp
<%--
    Document    : TempConv
    Created on  : 17 Jun 2024, 12:29:59 am
    Author      : izzul
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>Celsius to Fahrenheit</title>
    <style>
        p {
            font-size: 35px;
            font-family: monospace;
            font-weight: bold;
        }
    </style>
</head>
<body>
    <h1>Celsius to Fahrenheit Conversion</h1>
    <form id="CelsiusToFahrenheitForm" action="TempConv.jsp" method="post">
        <fieldset>
            <br/>
            <label for="celsius">Enter Temperature in Celsius: </label>
            <input type="text" id="celsius" name="celsius" size="10" placeholder="temperature"> °C<br/><br/>
            <p>
                <input type="submit" id="btnSubmit" value="Convert"/>
                <input type="reset" id="btnCancel" value="Cancel"/>
            </p>
            <%
```

```jsp
                <input type="reset" id="btnCancel" value="Cancel"/>
            </p>
            <%
            // Retrieve the temperature in Celsius from the form
            String celsiusStr = request.getParameter("celsius");
            if (celsiusStr != null && !celsiusStr.isEmpty()) {
                // Convert the temperature to Fahrenheit
                double celsius = Double.parseDouble(celsiusStr);
                double fahrenheit = (9.0 / 5.0) * celsius + 32.0;
            %>
            <p><%= celsius %> °C = <%= fahrenheit %> °F</p>
            <%
            }
            %>

        </fieldset>
    </form>


</body>
</html>
```

Celsius to Fahrenheit Conversion

Enter Temperature in Celsius: 28 °C

[Convert] [Cancel]

28.0 °C = 82.4 °F

2. Write a JSP's form that asks for the length and width of two rectangles. The program should tell the user which rectangle has the greater area, or if the areas are the same. [Note: All result must be in 2 decimal places].


```jsp
<%--
    Document   : Rectangle
    Created on : 17 Jun 2024, 1:38:21 am
    Author     : izzul
--%>
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>Rectangle Area Comparison Result</title>
</head>
<body>
<%
    // Retrieve the parameters from the request
    double l1 = Double.parseDouble(request.getParameter("l1"));
    double w1 = Double.parseDouble(request.getParameter("w1"));
    double l2 = Double.parseDouble(request.getParameter("l2"));
    double w2 = Double.parseDouble(request.getParameter("w2"));

    // Calculate areas of both rectangles
    double area1 = l1 * w1;
    double area2 = l2 * w2;

    // Compare areas
    String result;
    if (area1 > area2) {
        result = "Rectangle 1 has a greater area than Rectangle 2.";
    } else if (area1 < area2) {
        result = "Rectangle 2 has a greater area than Rectangle 1.";
    } else {
        result = "Both rectangles have the same area.";
```

Source | History

```
21          // Calculate areas of both rectangles
22          double area1 = l1 * w1;
23          double area2 = l2 * w2;
24
25          // Compare areas
26          String result;
27          if (area1 > area2) {
28              result = "Rectangle 1 has a greater area than Rectangle 2.";
29          } else if (area1 < area2) {
30              result = "Rectangle 2 has a greater area than Rectangle 1.";
31          } else {
32              result = "Both rectangles have the same area.";
33          }
34      %>
35      <h1>Rectangle Area Comparison Result</h1>
36      <p>Area of Rectangle 1: <%= String.format("%.2f", area1) %> square cm</p>
37      <p>Area of Rectangle 2: <%= String.format("%.2f", area2) %> square cm</p>
38      <p><%= result %></p>
39      </body>
40      </html>
41
42
```

Output | Servlet API classes are not on the classpath, some scriplet editing features are disabled   42:1   INS Unix (LF)

Source | History

```
1   <%--
2       Document   : compareArea
3       Created on : 17 Jun 2024, 1:39:55 am
4       Author     : izzul
5   --%>
6
7   <%@page contentType="text/html" pageEncoding="UTF-8"%>
8   <!DOCTYPE html>
9   <html>
10  <head>
11      <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
12      <title>Rectangle Area Comparison</title>
13  </head>
14  <body>
15  <h1>Comparing 2 Rectangle Areas</h1>
16  <form id="rectangleComparison" action="Rectangle.jsp" method="post">
17      <fieldset>
18          <legend>Length & Width Input</legend>
19          <h3>Rectangle 1</h3>
20          <label for="l1">Enter length: </label>
21          <input type="text" id="l1" name="l1" size="10" placeholder="length 1"> cm<br/><br/>
22          <label for="w1">Enter width: </label>
23          <input type="text" id="w1" name="w1" size="10" placeholder="width 1"> cm<br/><br/>
24
25          <h3>Rectangle 2</h3>
26          <label for="l2">Enter length: </label>
27          <input type="text" id="l2" name="l2" size="10" placeholder="length 2"> cm<br/><br/>
28          <label for="w2">Enter width: </label>
29          <input type="text" id="w2" name="w2" size="10" placeholder="width 2"> cm<br/><br/>
30
31          <p><input type="submit" id="btnSubmit" value="Compare"/>
32              <input type="reset" id="btnCancel" value="Cancel"/>
```

Output   9:7   INS Unix (LF)
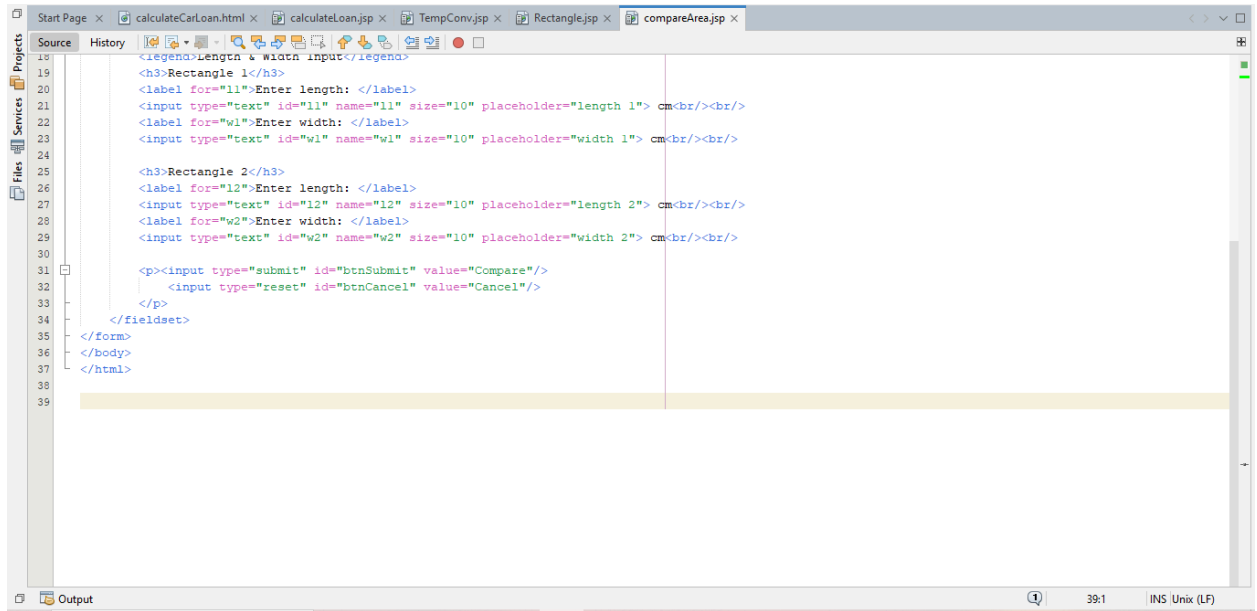
Source | History

```
18          <legend>Length & Width Input</legend>
19          <h3>Rectangle 1</h3>
20          <label for="l1">Enter length: </label>
21          <input type="text" id="l1" name="l1" size="10" placeholder="length 1"> cm<br/><br/>
22          <label for="w1">Enter width: </label>
23          <input type="text" id="w1" name="w1" size="10" placeholder="width 1"> cm<br/><br/>
24
25          <h3>Rectangle 2</h3>
26          <label for="l2">Enter length: </label>
27          <input type="text" id="l2" name="l2" size="10" placeholder="length 2"> cm<br/><br/>
28          <label for="w2">Enter width: </label>
29          <input type="text" id="w2" name="w2" size="10" placeholder="width 2"> cm<br/><br/>
30
31          <p><input type="submit" id="btnSubmit" value="Compare"/>
32              <input type="reset" id="btnCancel" value="Cancel"/>
33          </p>
34      </fieldset>
35  </form>
36  </body>
37  </html>
38
39
```

Output:

Comparing 2 Rectangle Areas

Length & Width Input

Rectangle 1

Enter length: 4 cm

Enter width: 5 cm

Rectangle 2

Enter length: 6 cm

Enter width: 6 cm

Compare Cancel

---

localhost:8080/Lab2/Rectangle.jsp

Rectangle Area Comparison Result

Area of Rectangle 1: 20.00 square cm

Area of Rectangle 2: 36.00 square cm

Rectangle 2 has a greater area than Rectangle 1.