



UNIVERSITI MALAYSIA TERENGGANU

Faculty of Computer Sciences and Mathematics

Web Based Application Development

CSM3023

Lab Report 3

Prepared for:

Sir. Mohd Arizal Shamsil bin Mat Rifin

Prepared by:

Ahmad Afif Syahmi bin Ahmad Rozali (S65526)

17th April 2024

Bachelor of Computer Science (Mobile Computing) with Honors

Semester II 2023/2024

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's page to another JSP's page.
- Code:

```
<!--
  Document    : memberRegister
  Created on  : 17 Apr 2024, 2:42:07 pm
  Author      : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
    <title>Task 1</title>
  </head>
  <body>

    <h1>Passing data from main JSP's page to other JSP's page</h1>
    <form action="memberProcessing.jsp" id="memberFrm"
method="post" onsubmit="return checkICNo()">
      <fieldset>
        <legend>Member Registration</legend>
        <label for="icno">IC No*</label>
        <input type="text" id="icno" name="my_icno" size="15"
placeholder="E.g. 010203040506"><br>

        <label for="name">Name</label>
        <input type="text" name="my_name" id="name" size="45"
placeholder="Key-in your name"><br>

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

  </body>
</html>
```

```
<!--
  Document    : memberProcessing
  Created on  : 17 Apr 2024, 2:54:54 pm
  Author      : Ahmad Afif Syahmi bin Ahmad Rozali
--%>
```

```

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
        <title>Task 1</title>
    </head>
    <body>

        <h1>Passing data from main JSP's page to other JSP's page</h1>
        <fieldset>
            <%
                //Define variables...
                String myIC, myName;

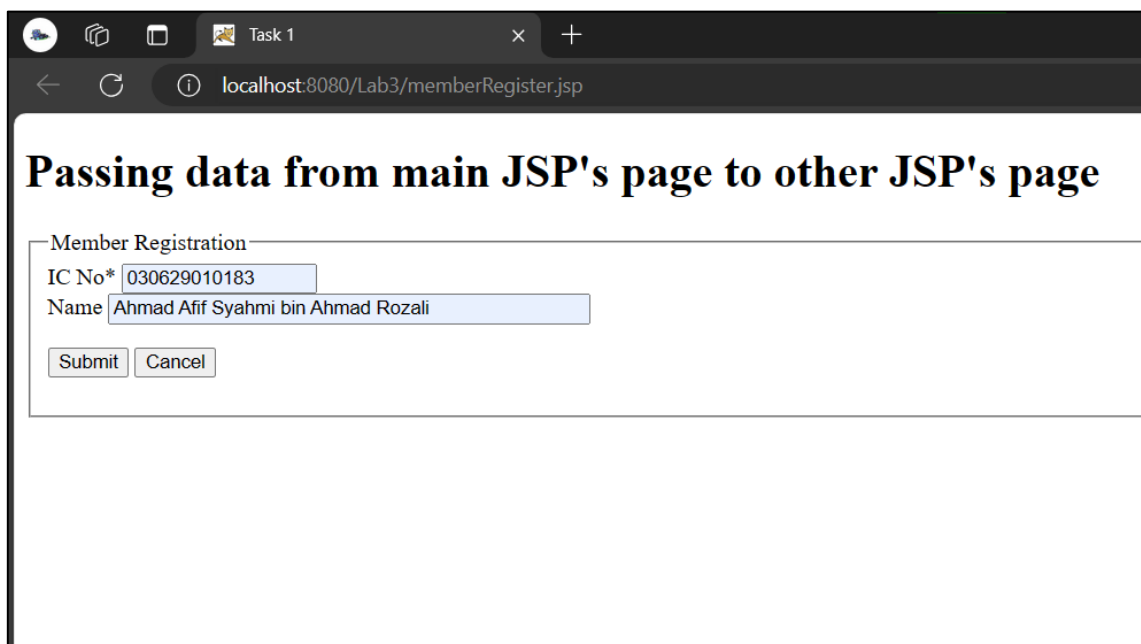
                //Use request.getParameter() method to retrieve data
from main's form...
                myIC = request.getParameter("my_icno");
                myName = request.getParameter("my_name");
            %>

            <!--Display the output...-->
            <p>Thank you for registering in this event..!</p>
            <p>This is your details;</p>
            <p>IC No : <%=myIC%></p>
            <p>Name : <%=myName%></p>
        </fieldset>

    </body>
</html>

```

- Output:



Task 1

localhost:8080/Lab3/memberRegister.jsp

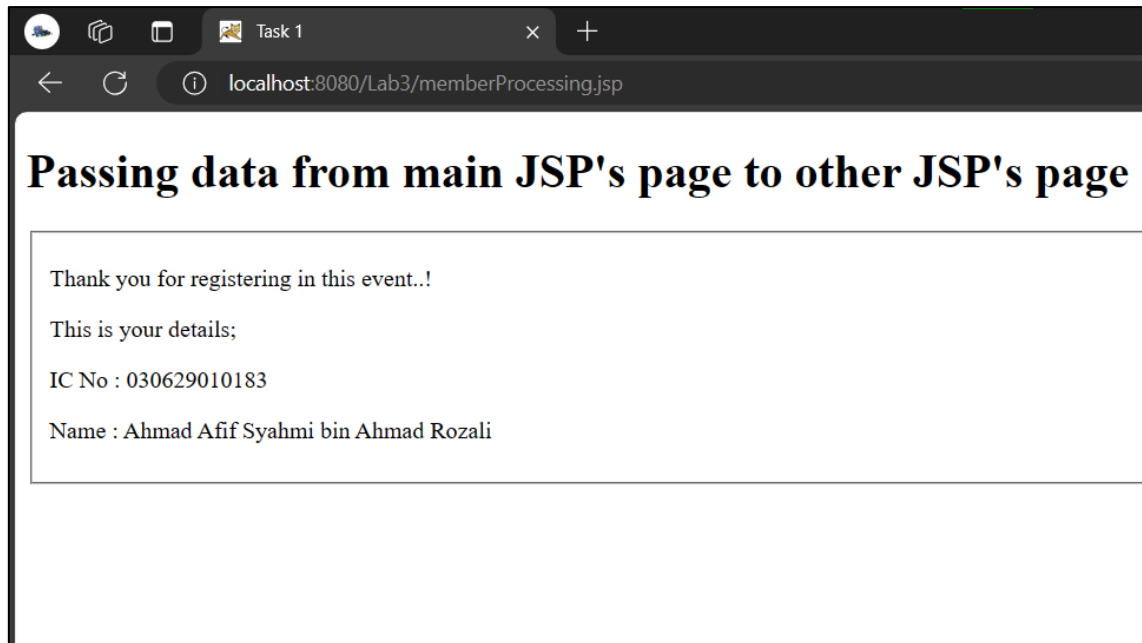
Passing data from main JSP's page to other JSP's page

Member Registration

IC No* 030629010183

Name Ahmad Afif Syahmi bin Ahmad Rozali

Submit Cancel



- Reflection:

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

Various method can be used to submit specific information from one form to the next form in a web application, for example URL parameters, hidden fields, session attributes and request attributes.

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?

If the field name specified in `request.getParameter("field_name")` in the second page is different from the field name defined in the first page, the `getParameter()` method will return null because it won't find a parameter with the specified name.

Task 2 : Using Mathematics Operations in JSP

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

```
<!--
  Document    : calculator
  Created on  : 17 Apr 2024, 3:07:24 pm
  Author      : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
    <title>Task 2</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;

          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" name="operand1" size="20" 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 %>>

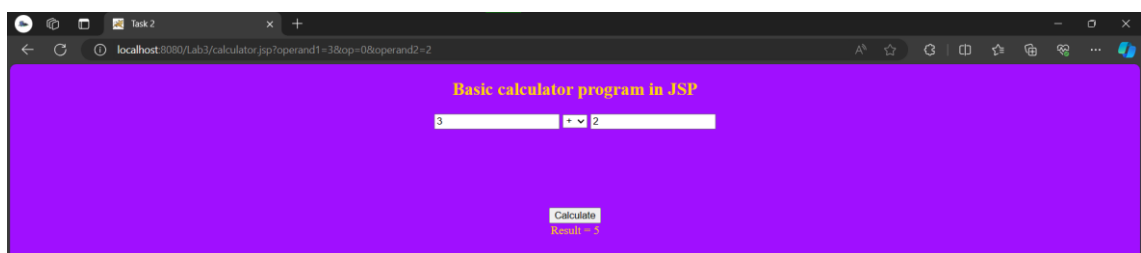
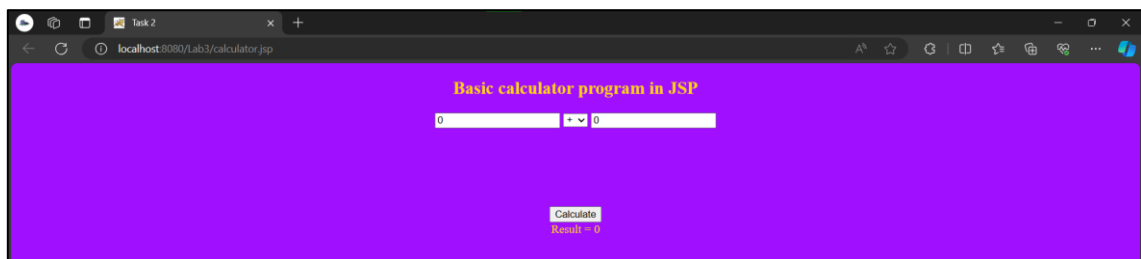
    <p><br><br><br><br></p>
    <input type="submit" value="Calculate">
</form>

    Result = <%= result + "" %>

</body>
</html>

```

- Output:



Task 4 : Perform Calculation of Car Loan

- Objective: Passing input to next page for further processing.
- Code:

```
<!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>
    <title>Task 4</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
  </head>
  <body>

    <h1>Perform Car Loan Calculation</h1>
    <form action="processCalculateCarLoan.jsp" method="post">
      <fieldset>
        <legend>Loan Calculation</legend>
        <table>
          <tr>
            <td>
              <label for="loanAmount">Loan
Amount*</label>
            </td>
            <td>
              <input type="text" name="loanAmount"
id="loanAmount" placeholder="Amount">
            </td>
          </tr>
          <tr>
            <td>
              <label for="loanPeriod">Period</label>
            </td>
            <td>
              <select name="loanPeriod" id="loanPeriod">
                <option value="3">3 years</option>
                <option value="4">4 years</option>
                <option value="5">5 years</option>
                <option value="7">7 years</option>
              </select>
            </td>
          </tr>
        </table>
        <br>
        <input type="submit" value="Submit" id="btnSubmit">
        <input type="reset" value="Cancel" id="btnCancel">
      </fieldset>
    </form>
```

```
</body>
</html>
```

```
<!--
  Document   : processCalculateCarLoan
  Created on : 17 Apr 2024, 3:52:14 pm
  Author      : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
    <title>Task 4</title>
    <style>
      #title {
        color: blue;
      }

      #details {
        border: 1px solid black;
        padding-left: 10px;
      }
    </style>
  </head>
  <body>

    <h1>Perform Car Loan Calculation</h1>

    <%
      int loanAmount =
Integer.parseInt(request.getParameter("loanAmount"));
      int loanPeriod =
Integer.parseInt(request.getParameter("loanPeriod"));
      double interestRate = 0;

      if (loanPeriod < 5)
        interestRate = 0.028;
      else
        interestRate = 0.045;

      double totalLoan = loanAmount + (interestRate * loanAmount
* loanPeriod);

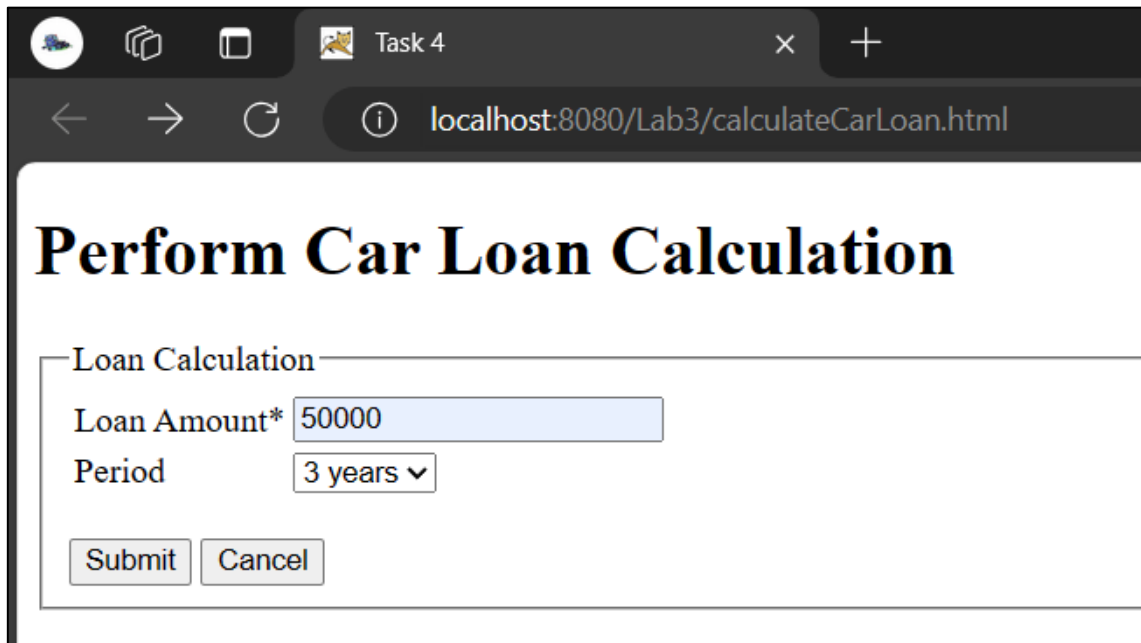
    %>

    <div id="details">
      <h2 id="title">Details of car loan:</h2>
      <h3>Loan Request : RM <%= String.format("%.2f", (double)
loanAmount) %></h3>
      <h3>Period of Payment : <%= loanPeriod %></h3>
      <h3>Total Loan (+ interest) : RM <%= String.format("%.2f",
totalLoan) %></h3>
    </div>
```



```
</body>  
</html>
```

- Output:



Task 4

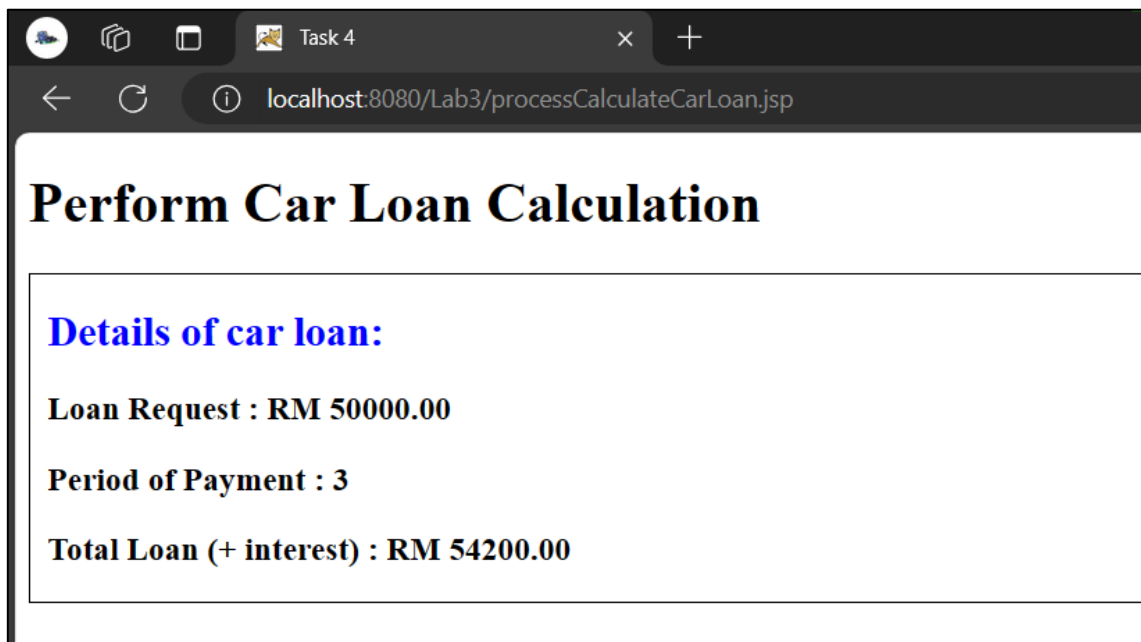
localhost:8080/Lab3/calculateCarLoan.html

Perform Car Loan Calculation

Loan Calculation

Loan Amount*

Period



Task 4

localhost:8080/Lab3/processCalculateCarLoan.jsp

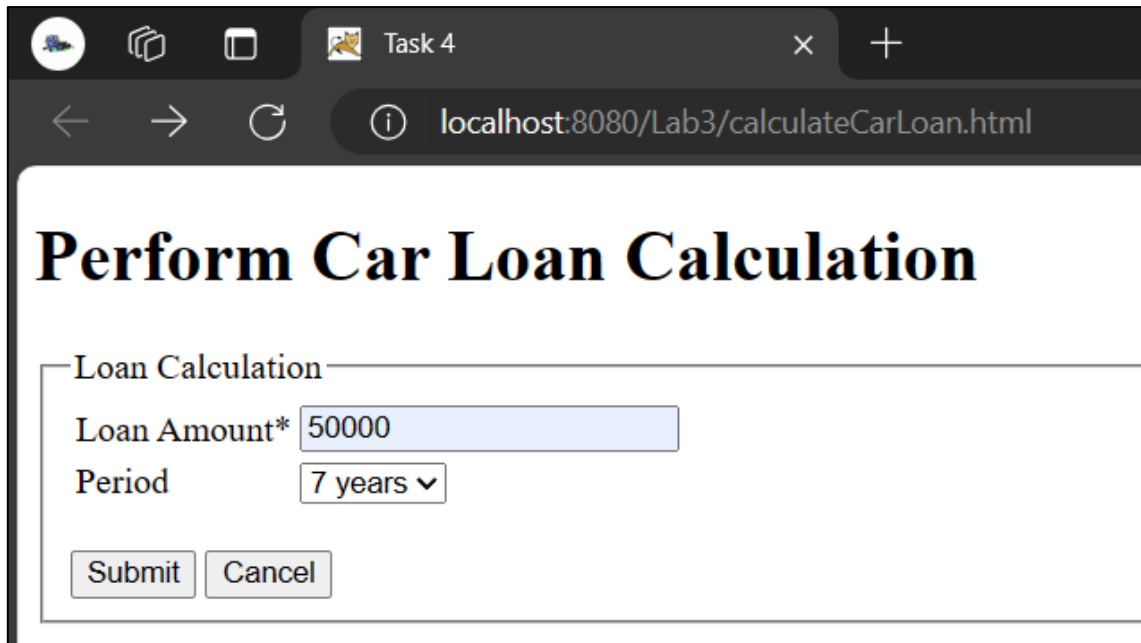
Perform Car Loan Calculation

Details of car loan:

Loan Request : RM 50000.00

Period of Payment : 3

Total Loan (+ interest) : RM 54200.00



Task 4

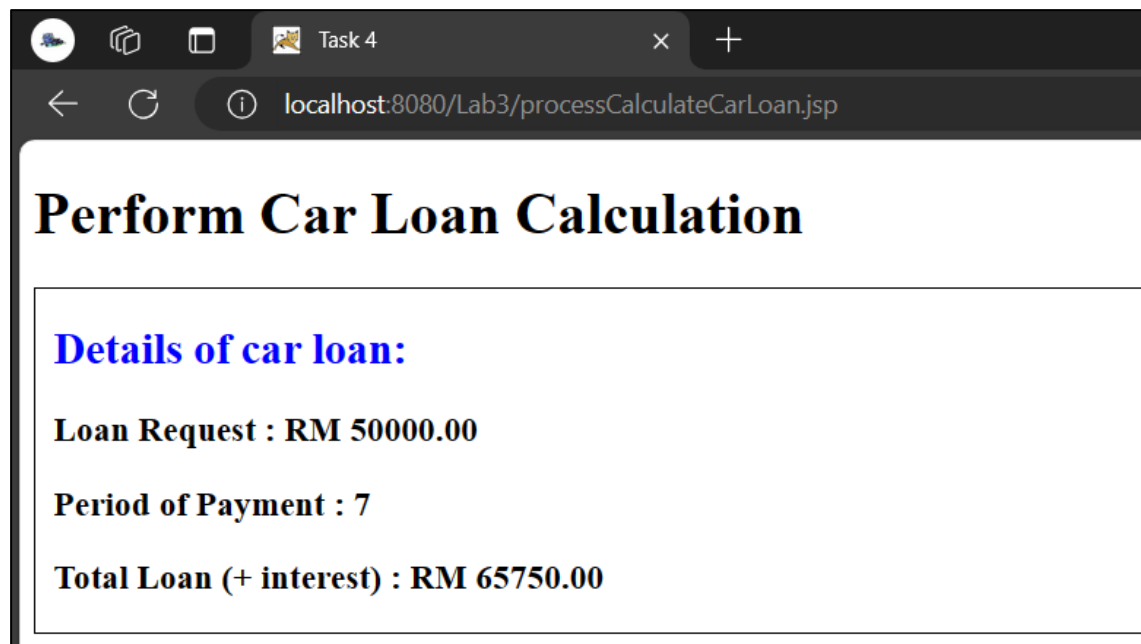
localhost:8080/Lab3/calculateCarLoan.html

Perform Car Loan Calculation

Loan Calculation

Loan Amount*

Period



Task 4

localhost:8080/Lab3/processCalculateCarLoan.jsp

Perform Car Loan Calculation

Details of car loan:

Loan Request : RM 50000.00

Period of Payment : 7

Total Loan (+ interest) : RM 65750.00

- Reflection:

1. How do you want to retrieve data from the previous page?

To retrieve data from the previous page we can use the `request.getParameter("parameter_name")` method in your JSP code. For example, to retrieve the loan amount and loan period selected by the user:

```
int loanAmount =  
Integer.parseInt(request.getParameter("loanAmount"));
```

```
int loanPeriod =  
Integer.parseInt(request.getParameter("loanPeriod"));
```

2. Where does the construction of logic occur for calculating Total Loan (+ interest)?

```
int loanAmount =  
Integer.parseInt(request.getParameter("loanAmount"));  
int loanPeriod =  
Integer.parseInt(request.getParameter("loanPeriod"));  
double interestRate = 0;  
  
if (loanPeriod < 5)  
    interestRate = 0.028;  
else  
    interestRate = 0.045;  
  
double totalLoan = loanAmount + (interestRate * loanAmount *  
loanPeriod);
```

Task 5 : Using JSP Page Directive to Call Java API

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

```
<!--
  Document    : arrayList
  Created on  : 17 Apr 2024, 4:49:02 pm
  Author      : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@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>Task 5</title>
    <style>
      p {
        color: blue;
      }
    </style>
  </head>
  <body>

    <h1>Use JSP Page Directive</h1>
    <%
      //Create ArrayList object...
      ArrayList<String> studentList = new ArrayList<>();

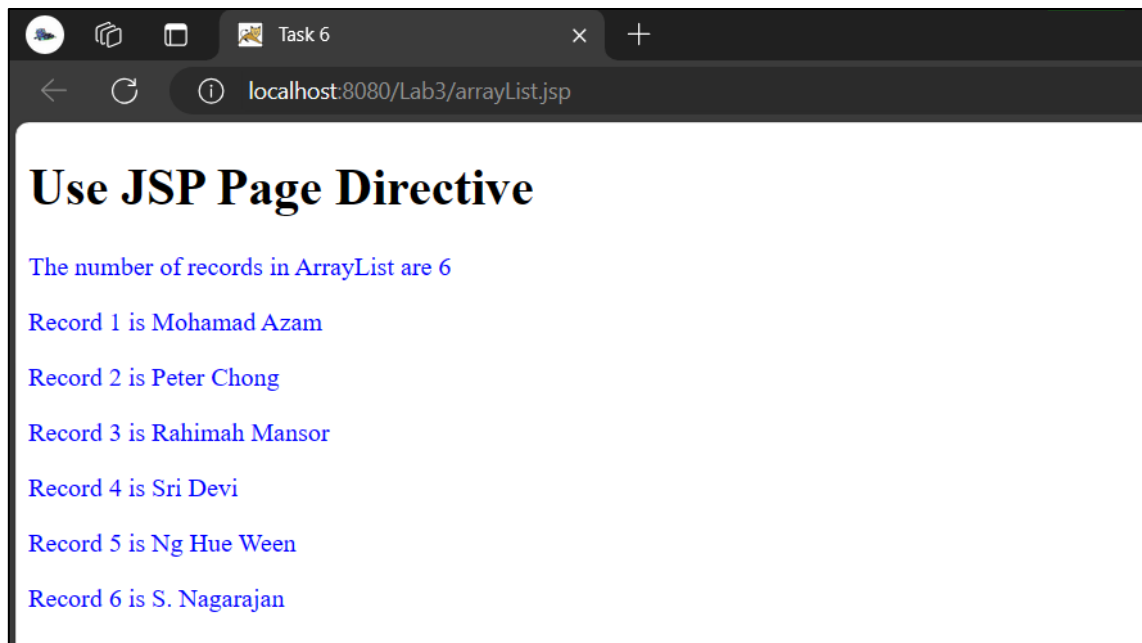
      //Store student name...
      studentList.add("Mohamad Azam");
      studentList.add("Peter Chong");
      studentList.add("Rahimah Mansor");
      studentList.add("Sri Devi");
      studentList.add("Ng Hue Ween");
      studentList.add("S. Nagarajan");

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

      //Populate a list of students...
      for (int i = 0; i < studentList.size(); i++) {
        out.println("<p>Record " + (i + 1) + " is " +
studentList.get(i) + "</p>");
      }
    %>

  </body>
</html>
```

- Output:



- Reflection:

1. What you have learnt from this exercise?

From this exercise I have learned how to create and manipulate ArrayList objects in Java as well as how to use JSP scriptlets to interact with them.

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

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
  <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
  <title>Math Object Example</title>
</head>
<body>
  <%
    // Using Java Math object in JSP
    double num = 25.5;
    double squareRoot = Math.sqrt(num);
  %>
  <p>The square root of <%= num %> is <%= squareRoot %>.</p>
</body>
</html>
```

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

- page - `<%@page import="java.util.*"%>`
- include - `<%@include file="header.jsp"%>`
- taglib - `<%@taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>`

Task 6 : Use JSP Include directive for JSP Page

- Objective: Demonstrate the use of JSP Page Include directive.
- Code:

```
<!--
  Document    : mainPage
  Created on  : 22 Apr 2024, 8:20:34 pm
  Author      : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
    <title>Task 6</title>
    <style>
      body {
        box-sizing: border-box;
        padding: 0;
        margin: 0;
        font-family: Arial, Helvetica, sans-serif;
      }

      .main {
        width: 50%;
      }

      .main p {
        color: red;
        font-size: large;
      }
    </style>
  </head>
  <body>
    <jsp:include page="headerPage.jsp" flush="true"/>

    <div class="main">
      <h1>Using JSP Include Directive</h1>
      <p>
        Java Server Page (JSP) is a technology for controlling
the content or appearance
of Web pages through the use of servlets, small
programs that are specified in
the Web page and run in the Web server to modify the
Web page before it is sent
to the user who requested it.
      </p>
    </div>

    <jsp:include page="footerPage.jsp" flush="true"/>
  </body>
</html>
```

```
<!--
  Document    : headerPage
  Created on  : 22 Apr 2024, 8:28:23 pm
  Author      : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
    <title>Task 6 Header Page</title>
    <style>
      body {
        box-sizing: border-box;
        padding: 0;
        margin: 0;
      }

      .header {
        text-align: center;
        background-color: yellow;
        padding: 20px 0px;
      }
    </style>
  </head>
  <body>
    <div class="header">
      <h1>ABC Sdn Bhd</h1>
    </div>
  </body>
</html>
```

```
<!--
  Document    : footerPage
  Created on  : 22 Apr 2024, 8:37:20 pm
  Author      : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
    <title>Task 6 Footer Page</title>
    <style>
      body {
        box-sizing: border-box;
        padding: 0;
        margin: 0;
      }

      .footer {
        text-align: center;
      }
    </style>
  </head>
  <body>
    <div class="footer">
      <p>Footer content</p>
    </div>
  </body>
</html>
```

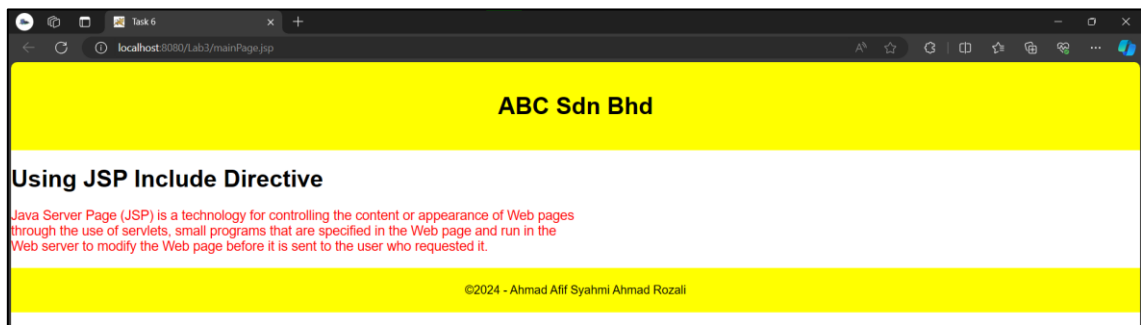


```

        background-color: yellow;
        padding: 5px 0px;
    }
</style>
</head>
<body>
    <div class="footer">
        <p>&copy;2024 - Ahmad Afif Syahmi Ahmad Rozali</p>
    </div>
</body>
</html>

```

- Output:



- Reflection:

1. What you have learnt from this exercise?

From this exercise I have learned how to use the JSP include directive (`<jsp:include>`) to include content from other JSP files into a main JSP file. I have also learned how to structure the JSP files to create reusable components such as headers and footers.

2. Write a syntax how you want to include common.html file that located at a directory known as master.

```
<jsp:include page="/master/common.html" />
```

Exercise 1

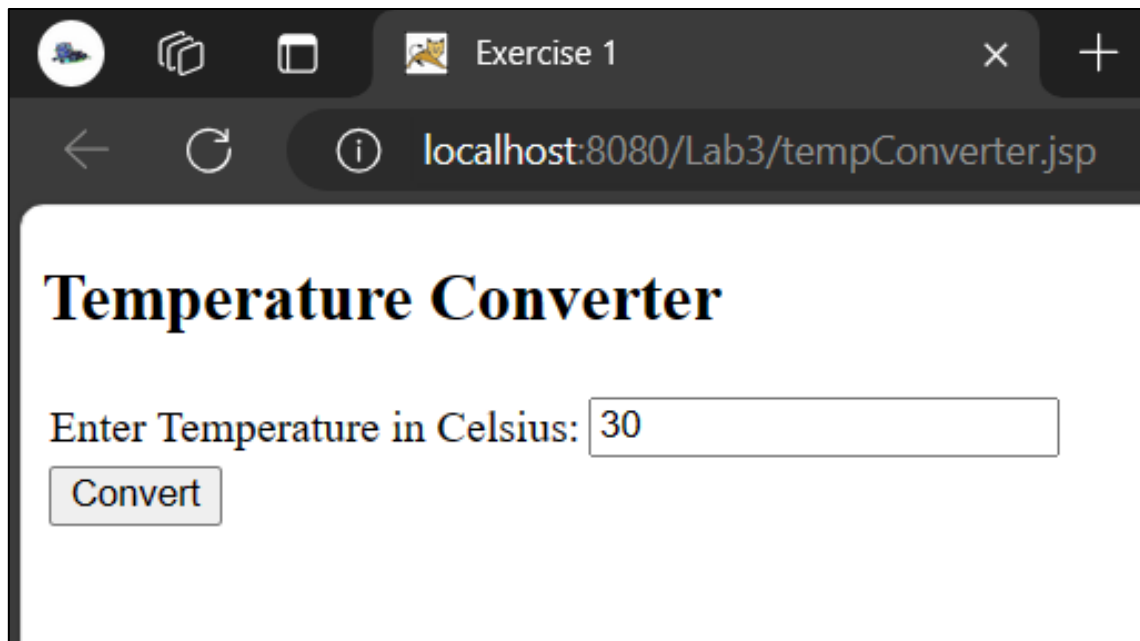
- Objective: Write a JSP's page to convert temperatures to Fahrenheit temperatures.
- Code:

```
<!--
  Document   : tempConverter
  Created on : 23 Apr 2024, 1:59:57 am
  Author      : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

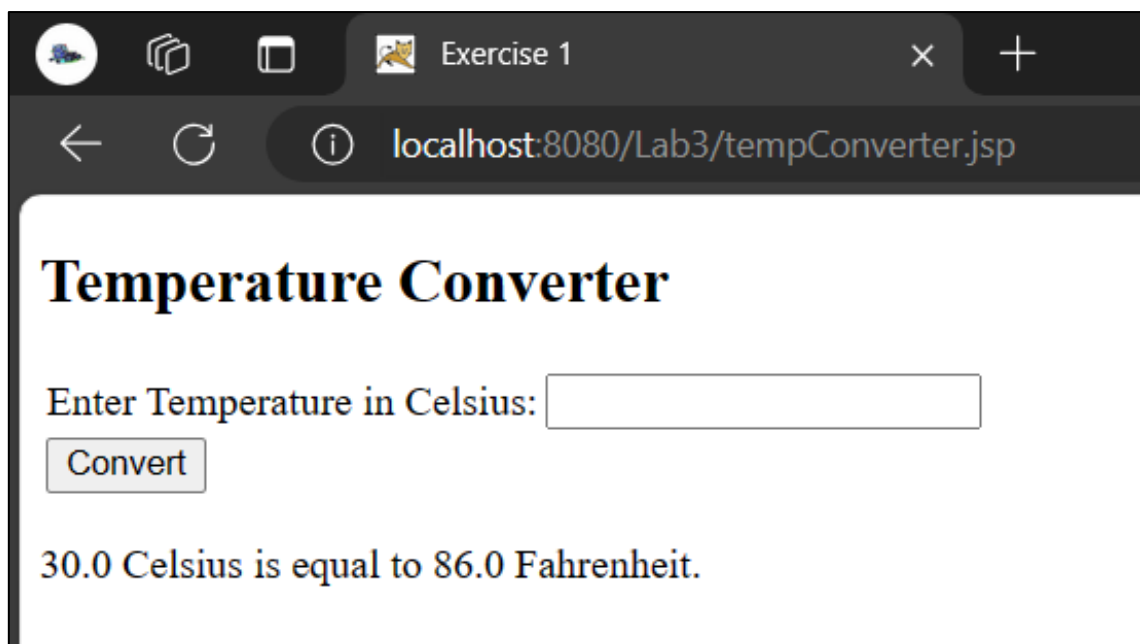
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
    <title>Exercise 1</title>
  </head>
  <body>
    <h2>Temperature Converter</h2>
    <form method="post">
      <table>
        <tr>
          <td><label for="celsius">Enter Temperature in
Celsius: </label></td>
          <td><input type="text" name="celsius"
id="celsius"></td>
        </tr>
        <tr>
          <td colspan="2"><input type="submit"
value="Convert" /></td>
        </tr>
      </table>
    </form>

    <%
      if (request.getMethod().equals("POST")) {
        double celsius;
        try {
          celsius =
Double.parseDouble(request.getParameter("celsius"));
          double fahrenheit = (9.0 / 5.0) * celsius + 32.0;
          out.println("<p>" + celsius + " Celsius is equal
to " + fahrenheit + " Fahrenheit.</p>");
        } catch (NumberFormatException e) {
          out.println("<p>Please enter a valid
temperature.</p>");
        }
      }
    %>
  </body>
</html>
```

- Output:



A screenshot of a web browser window. The address bar shows 'localhost:8080/Lab3/tempConverter.jsp'. The page title is 'Exercise 1'. The main content area displays the heading 'Temperature Converter' in a large, bold, black serif font. Below the heading, there is a text input field with the label 'Enter Temperature in Celsius:' and the value '30' entered. A 'Convert' button is positioned below the input field.



A screenshot of the same web browser window after the conversion. The address bar and page title remain the same. The heading 'Temperature Converter' is still present. The text input field now contains an empty box. Below the input field, the text '30.0 Celsius is equal to 86.0 Fahrenheit.' is displayed in a black serif font.

Exercise 1

- Objective: Write a JSP's form that asks for the length and width of two rectangles.
- Code:

```
<%--
    Document    : rectangle
    Created on  : 23 Apr 2024, 2:12:22 am
    Author     : Ahmad Afif Syahmi bin Ahmad Rozali
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
        <title>Exercise 2</title>
    </head>
    <body>
        <h2>Rectangle Area Comparison</h2>
        <form method="post">
            <table>
                <tr>
                    <td><label for="length1">Rectangle 1
Length:</label></td>
                    <td><input type="text" name="length1"
id="length1"></td>
                    <td><label for="width1">Width:</label></td>
                    <td><input type="text" name="width1"
id="width1"></td>
                </tr>
                <tr>
                    <td><label for="length2">Rectangle 2
Length:</label></td>
                    <td><input type="text" name="length2"
id="length2"></td>
                    <td><label for="width2">Width:</label></td>
                    <td><input type="text" name="width2"
id="width2"></td>
                </tr>
                <tr>
                    <td colspan="2"><input type="submit"
value="Compare Areas"></td>
                </tr>
            </table>
        </form>

        <%
            if (request.getMethod().equals("POST")) {
                double length1 =
Double.parseDouble(request.getParameter("length1"));
                double width1 =
Double.parseDouble(request.getParameter("width1"));
            }
        %>
    </body>
</html>
```

```

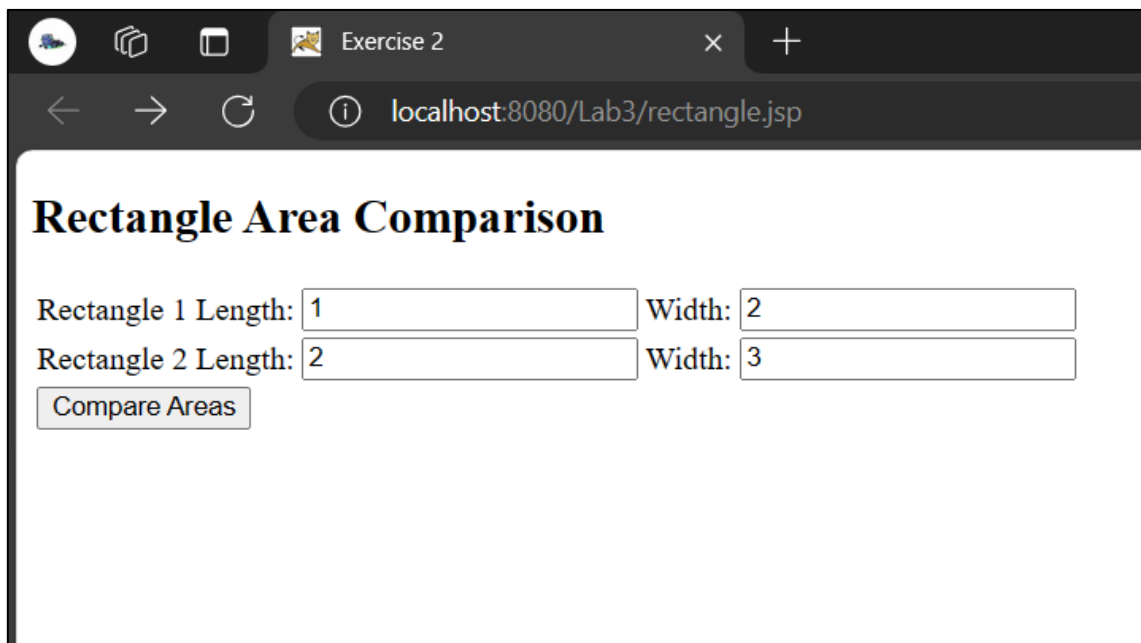
        double length2 =
Double.parseDouble(request.getParameter("length2"));
        double width2 =
Double.parseDouble(request.getParameter("width2"));

        double area1 = length1 * width1;
        double area2 = length2 * width2;

        if (area1 > area2) {
            out.println("<p>Rectangle 1 has a greater area
than Rectangle 2.</p>");
        }
        else if (area1 < area2) {
            out.println("<p>Rectangle 2 has a greater area
than Rectangle 1.</p>");
        }
        else {
            out.println("<p>Both rectangles have the same
area.</p>");
        }
    }
    %>
</body>
</html>

```

- Output:



Exercise 2

localhost:8080/Lab3/rectangle.jsp

Rectangle Area Comparison

Rectangle 1 Length: Width:

Rectangle 2 Length: Width:

Exercise 2

localhost:8080/Lab3/rectangle.jsp

Rectangle Area Comparison

Rectangle 1 Length:

Width:

Rectangle 2 Length:

Width:

Rectangle 2 has a greater area than Rectangle 1.

Exercise 2

localhost:8080/Lab3/rectangle.jsp

Rectangle Area Comparison

Rectangle 1 Length:

Width:

Rectangle 2 Length:

Width:

Exercise 2

localhost:8080/Lab3/rectangle.jsp

Rectangle Area Comparison

Rectangle 1 Length:

Width:

Rectangle 2 Length:

Width:

Compare Areas

Rectangle 1 has a greater area than Rectangle 2.

Exercise 2

localhost:8080/Lab3/rectangle.jsp

Rectangle Area Comparison

Rectangle 1 Length:

3

Width:

2

Rectangle 2 Length:

2

Width:

3

Compare Areas

Exercise 2

localhost:8080/Lab3/rectangle.jsp

Rectangle Area Comparison

Rectangle 1 Length:

Width:

Rectangle 2 Length:

Width:

Compare Areas

Both rectangles have the same area.