



**UNIVERSITI MALAYSIA TERENGGANU**

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**CSM3023 -PEMBANGUNAN APLIKASI BERASASKAN WEB  
BANCHELOR OF COMPUTER SCIENCE (MOBILE COMPUTING)  
WITH HONORS**

**LAB 3 – JSP: Scriptlet, Page Directive & Include Directive**

**SEMESTER 2 2023/2024**

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**S66467**

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

### memberRegister.jsp

```
<%--

    Document : memberRegister

    Created on : 17 Apr 2024, 2:41:32 pm

    Author   : Nur Ezreena

--%>

<%@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>

        <h1>Passing data from main JSP's page to other JSP's page</h1>

        <form id="memberForm" action="memberProcessing.jsp" method="post"
onsubmit="return checkICNo()">

            <fieldset>

                <legend>Member Registration</legend>

                <label for="invoiceno" style="margin-bottom: 10px;">Ic No</label>

                <input type="text" id="icno" name="my_icno" size="15" placeholder="E.g.
020428451997"><br/><!-- comment -->
```

```
<label for="name"style="margin-bottom: 15px;">Name</label>

<input type="text" id="name" name="my_name" size="45" placeholder="Key in your
name"><br/><!-- comment -->


<p><input type="submit" id="btnsubmit" value="Submit"/>

<input type="reset" id="btncancel" value="Cancel"/>

</p>

</fieldset>

</form>

</body>

</html>
```

### memberProcessing.jsp

```
<%--

Document : memberProcessing

Created on : 17 Apr 2024, 3:24:02 pm

Author : Nur Ezreena

--%>

<%@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 </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;

            //user request.getParameter() method to retrieve data from main form

            myIC = request.getParameter("my_icno");

            myName = request.getParameter("my_name");

        %>

        <!--display output-->

        <p>Thankyou for registering in this event..!</p><!-- comment -->

        <p>This is your details</p><!-- comment -->

        <p>IC no : <%=myIC%></p>

        <p>Name : <%=myName%></p><!-- comment -->

    </fieldset>

</body>

</html>
```

## Output:

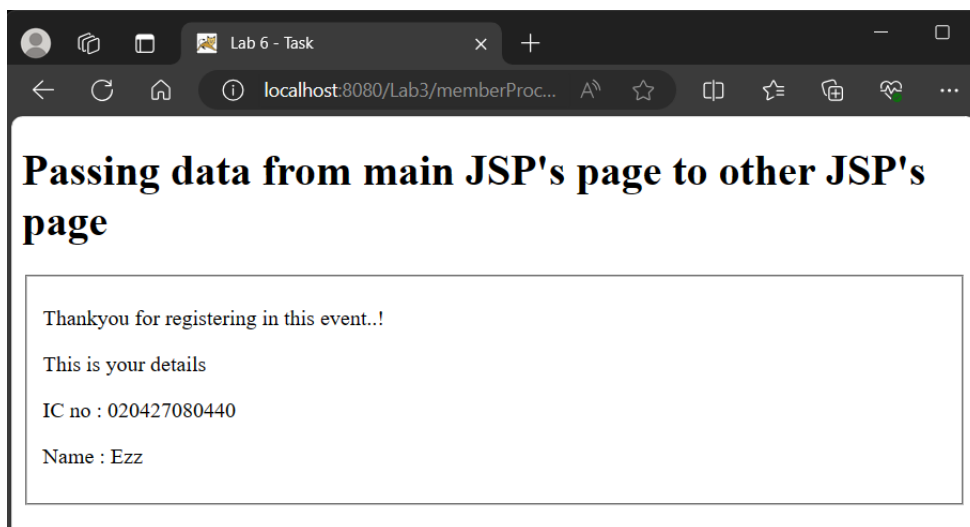


**Passing data from main JSP's page to other JSP's page**

Member Registration

Id No

Name



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

Thankyou for registering in this event..!

This is your details

IC no : 020427080440

Name : Ezz

## Reflection

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

You can use JSP to move particular data from one form to another by applying the "action" element in the form tag and transferring the data using HTTP request methods like GET or POST.

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

Considering that the field name in the request was provided. The value for that parameter will not be received appropriately since the field name provided on the first page and `getParameter("field_name")` on the second page are different. You can also expect null or an empty string as a response. Field names on different pages must match in order for data to be fetched and processed effectively.

## Task 2: Using Mathematics Operations in JSP

### Calculator.jsp

```
<%--  
  
    Document : Calculator  
  
    Created on : 17 Apr 2024, 3:44:08 pm  
  
    Author   : Nur Ezreena  
  
--%>  
  
<%@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">  
  
        <center>  
  
            <h2>Basic Calculator program in jsp</h2><!-- comment -->  
  
            <form method = "get" name="f1">  
  
                <%  
  
                    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;

    }

}

%>
```

```

<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 />

    Result = <%= result +""%>

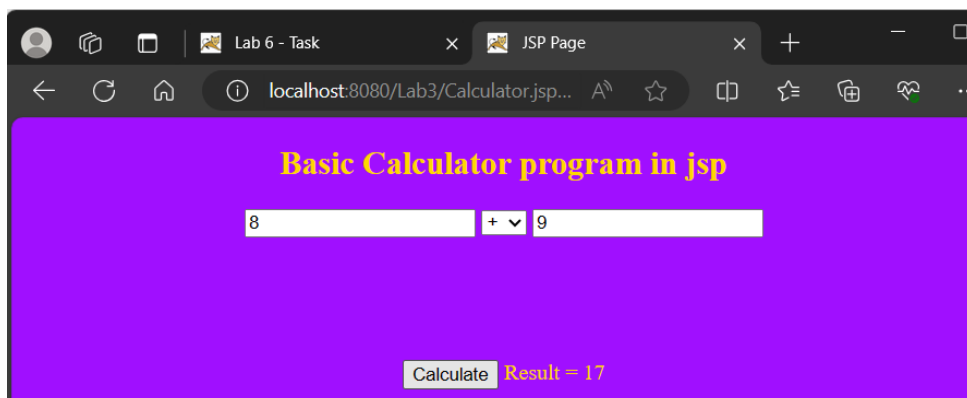
</form>

</body>

</html>

```

Output:





### Task 3: Table Array

#### populateArray.jsp

```
<%--  
  
    Document : populateArray  
  
    Created on : 17 Apr 2024, 4:43:45 pm  
  
    Author : Nur Ezreena  
  
--%>  
  
<%@page contentType="text/html" pageEncoding="UTF-8"%>  
  
<!DOCTYPE html>  
  
<html>  
  
    <head>  
  
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">  
  
        <title>Array</title>  
  
        <style>  
  
            table {  
  
                font-family: arial, sans-serif;  
  
                border-collapse: collapse;  
  
                width:50%;  
  
            }  
  
  
            th {  
  
                border: 1px solid #dddddd;  
  
                text-align: center;
```

```
padding: 8px;

background-color: #FFE4B5;

}

td{

border: 1px solid #dddddd;

text-align: center;

padding: 8px;

background-color: #FFFACD;

}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<h1>Read Java Array and Populate it into HTML's table</h1>
```

```
<table>
```

```
<tr>
```

```
<th>Salesman</th>
```

```
<th>Jan</th>
```

```
<th>Feb</th>
```

```
<th>Mac</th>
```

```
</tr>
```

```
<tr>
```

```
<td>Salesman 1</td>
```

<td>2500</td>

<td>2100</td>

<td>2200</td>

</tr>

<tr>

<td>Salesman 2</td>

<td>2000</td>

<td>1900</td>

<td>2400</td>

</tr>

<tr>

<td>Salesman 3</td>

<td>1800</td>

<td>2200</td>

<td>2450</td>

</tr>

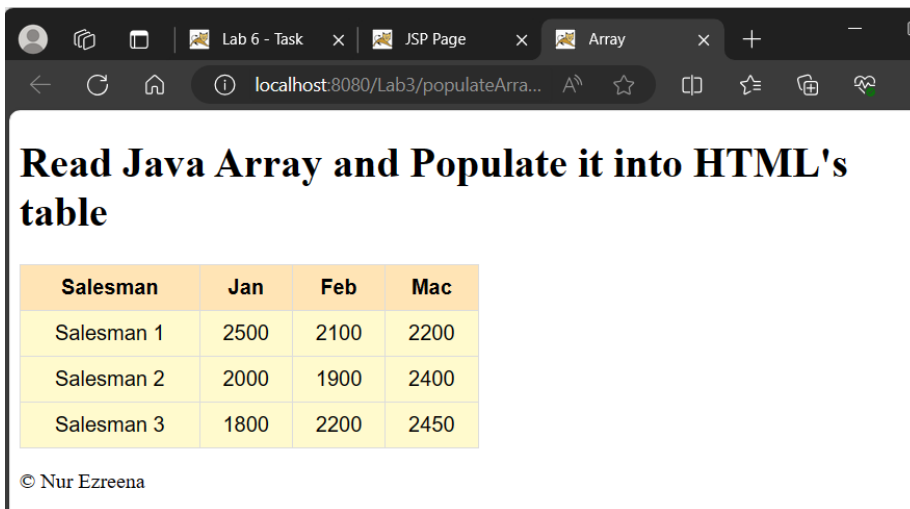
</table>

<p>&COPY; Nur Ezreena</p>

</body>

</html>

## Output:



**Read Java Array and Populate it into HTML's table**

Salesman	Jan	Feb	Mac
Salesman 1	2500	2100	2200
Salesman 2	2000	1900	2400
Salesman 3	1800	2200	2450

© Nur Ezreena

## Task 4: Perform Calculation of Car Loan

### calculateCarLoan.jsp

```
<%--  
  
    Document : calculateCarLoan  
  
    Created on : 24 Apr 2024, 3:55:55 pm  
  
    Author : Nur Ezreena  
  
--%>  
  
<%@page contentType="text/html" pageEncoding="UTF-8"%>  
  
<!DOCTYPE html>  
  
<html lang="en">  
  
<head>  
  
<meta charset="UTF-8">  
  
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

```
<title>Car Loan Calculator</title>

</head>

<body>

<h1>Perform Car Loan Calculation</h1>

    <form action="processCalculateCarLoan.jsp" method="post">

        <fieldset>

            <legend>Loan Calculation</legend>

            <label for="loanAmount">Loan Amount: </label>

            <input type="number" id="loan-amount" name="loanAmount" required>

            <br> <br>

            <label for="loan-period">Period: </label>

            <select id="loan-period" name="loanPeriod" required>

                <option value="3">3 year</option>

                <option value="4">4 years</option>

                <option value="5">5 years</option>

                <option value="7">7 years</option>

            </select><br><br>

            <input type="submit" id="btnSubmit" value="Submit"/>

            <input type="reset" id="btnCancel" value="Cancel"/>

        </fieldset>

    </form>

</body>

<footer>&copy;2024 - Ezreena</footer>
```

```
</html>
```

## processCalculateCarLoan.jsp

```
<%--  
  
    Document : processCalculateCarLoan  
  
    Created on : 24 Apr 2024, 3:56:52 pm  
  
    Author : Nur Ezreena  
  
--%>  
  
<%@page contentType="text/html" pageEncoding="UTF-8"%>  
  
<!DOCTYPE html>  
  
<html lang="en">  
  
<head>  
  
    <meta charset="UTF-8">  
  
    <meta name="viewport" content="width=device-width, initial-scale=1.0">  
  
    <title>Car Loan Result</title>  
  
</head>  
  
<body>  
  
    <h1>Perform Car Loan Calculation</h1>  
  
    <%  
  
        // Retrieve parameters from the request  
  
        String loanAmountStr = request.getParameter("loanAmount");  
  
        String loanPeriodStr = request.getParameter("loanPeriod");
```

```
// Parse parameters to integers

int loanAmount = Integer.parseInt(loanAmountStr);

int loanPeriod = Integer.parseInt(loanPeriodStr);


// Calculate annual interest rate based on loan period

double annualInterestRate;

if (loanPeriod < 5) {

    annualInterestRate = 0.028; // 2.8% annual interest rate for loan period less than 5
    years

} else {

    annualInterestRate = 0.045; // 4.5% annual interest rate for loan period 5 years or
    more

}


double monthlyInterestRate = annualInterestRate / 12;

int totalMonths = loanPeriod * 12;


// Calculate monthly payment

double monthlyPayment = (loanAmount * monthlyInterestRate) / (1 - Math.pow(1 +
monthlyInterestRate, -totalMonths));


// Calculate total loan with interest
```

```
double totalLoan = monthlyPayment * totalMonths;
```

```
// Display result
```

```
%>
```

```
<fieldset>
```

```
<h1 style="color: blue;">Details of car loan:</h1>
```

```
<p>Loan Request: RM <%= loanAmount %></p>
```

```
<p>Period of payment: <%= loanPeriod %> years</p>
```

```
<p>Total Loan (+interest): RM <%= String.format("%.2f", totalLoan) %></p>
```

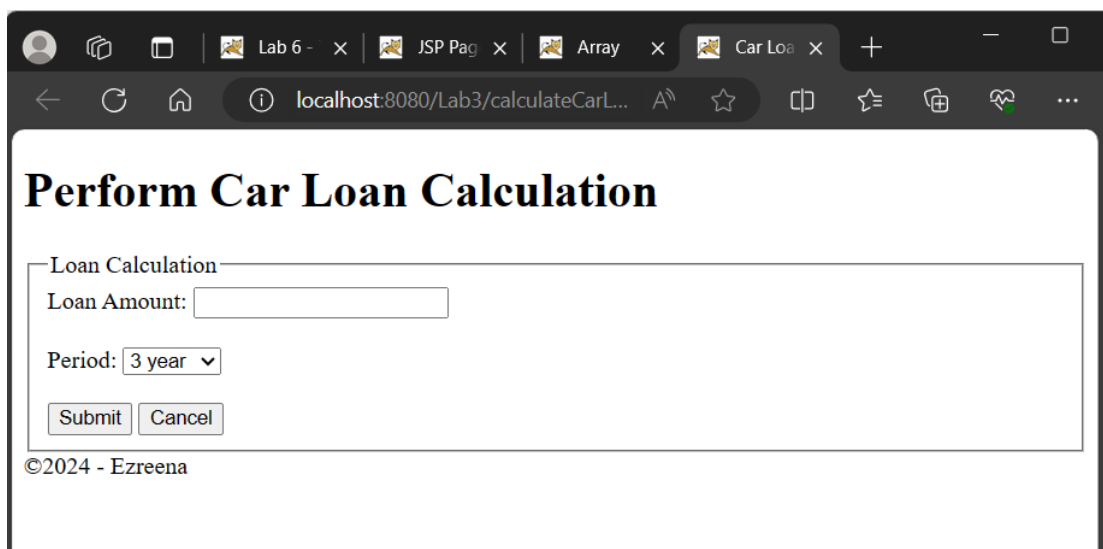
```
</fieldset>
```

```
</body>
```

```
<footer>&copy;2024-ARIF HAIKAL</footer>
```

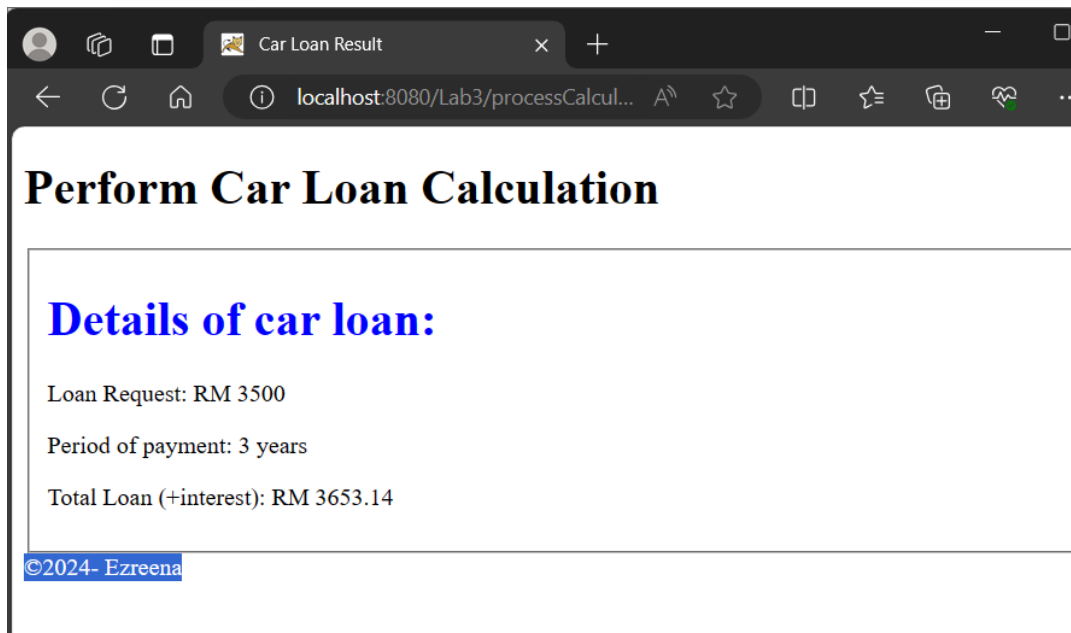
```
</html
```

## Output:



The screenshot shows a web browser window with multiple tabs. The active tab is titled 'Car Loa'. The address bar shows 'localhost:8080/Lab3/calculateCarL...'. The main content area displays a form titled 'Perform Car Loan Calculation'. The form is titled 'Loan Calculation' and contains a 'Loan Amount' input field, a 'Period' dropdown menu set to '3 year', and 'Submit' and 'Cancel' buttons. At the bottom of the form, there is a copyright notice: '©2024 - Ezreena'.





## Reflection

- 1) How you want to retrieve data from previous page?

The request object in JSP can be used to retrieve data from the previous page.

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

In a JSP (JavaServer Pages) application, the logic for calculating the total loan amount (interest included) is typically built in the Java code incorporated in the JSP file. This logic is implemented in the Java code section by doing calculations based on the loan amount, interest rate, and any other relevant data.

## Task 5: Using JSP Page Directive to Call Java API

### ArrayList.jsp

```
<%--  
  
    Document : ArrayList  
  
    Created on : 24 Apr 2024, 4:17:07 pm  
  
    Author   : Nur Ezreena  
  
--%>  
  
<%@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 ArrayList</title>  
  
    </head>  
  
    <body>  
  
        <h1>Use JSP Page Directive</h1>  
  
        <%  
  
            ArrayList<String> studentList = new ArrayList<String>();  
  
            studentList.add(0, "Mohamad 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><font color=\"blue\">The number of records in ArrayList are " +
studentList.size() + "</font></p>");


for (int i=0; i< studentList.size(); i++) {

out.println("<p><font color=\"blue\">Record " + (i+1) + " is " + studentList.get(i) +
"</font></p>");

}

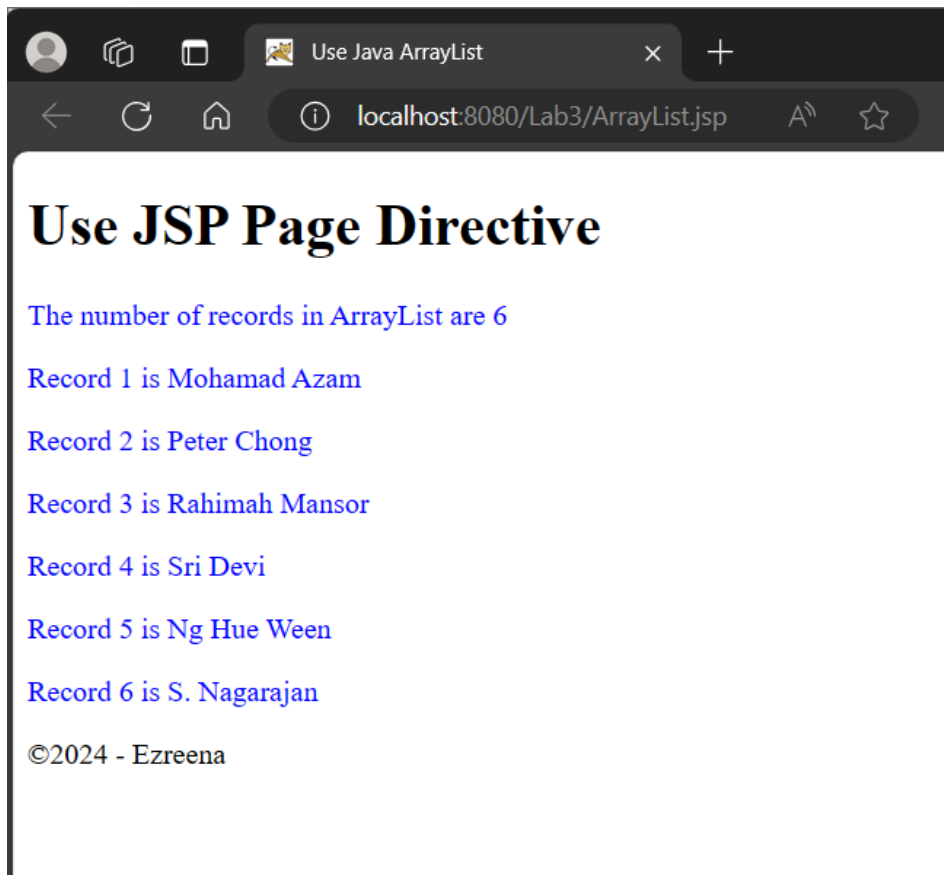
%>

</body>

<footer>&copy;2024 - Ezreena</footer>

</html>
```

**Output:**



## Reflection

1) What you have learnt from this exercise?

I learnt about utilize java ArrayList in JSP.

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

`%@page import="java.lang.Math"%`

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

`<%@page import="java.util.ArrayList"%>`

`<%@page contentType="text/html" pageEncoding="UTF-8"%>`

`<%@page language="java" %>`

## Task 6: Use JSP Include directive for JSP Page

### MainPage.jsp

```
<%--  
    Document   : MainPage  
    Created on : 24 Apr 2024, 4:24:46 pm  
    Author    : Nur Ezreena  
--%>  
  
<%@page contentType="text/html" pageEncoding="UTF-8"%>  
<%@ include file="HeaderPage.jsp" %>  
  
<!DOCTYPE html>  
  
<html>  
  
<head>  
  
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">  
  
    <title>Main Page</title>  
  
<style>  
    p {  
        color: red;  
    }  
</style>  
  
</head>  
  
    <body>  
  
        <p>Java Server Page (JSP) is a technology for controlling the content<br/>  
        or appearance of Web pages through the use of servlets, small<br/>  
        programs that are specified in the Web page and run on the Web server<br/>
```

to modify the Web page before it is sent to the user who requested it</p>

</body>

<%@ include file="FooterPage.jsp" %>

</html>

## HeaderPage.jsp

<%--

Document : HeaderPage

Created on : 24 Apr 2024, 4:29:27 pm

Author : Nur Ezreena

--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

<head>

<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

<title>Header Page</title>

<style>

header{

background-color: #FFD580;

text-align: right;

font-family: "Courier New", Courier, monospace;

}

```
        </style>

</head>

<body>

    <header>

        <h1>ABC Sdn Bhd</h1>

    </header>

</body>

</html>
```

## FooterPage.jsp

```
<%--

    Document   : HeaderPage

    Created on : 24 Apr 2024, 4:29:27 pm

    Author    : Nur Ezreena

--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>

<!DOCTYPE html>

<html>

    <head>

        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

        <title>Header Page</title>
```

```
<style>

    header{

        background-color: #FFD580;

        text-align: right;

        font-family: "Courier New", Courier, monospace;

    }

</style>

</head>

<body>

    <header>

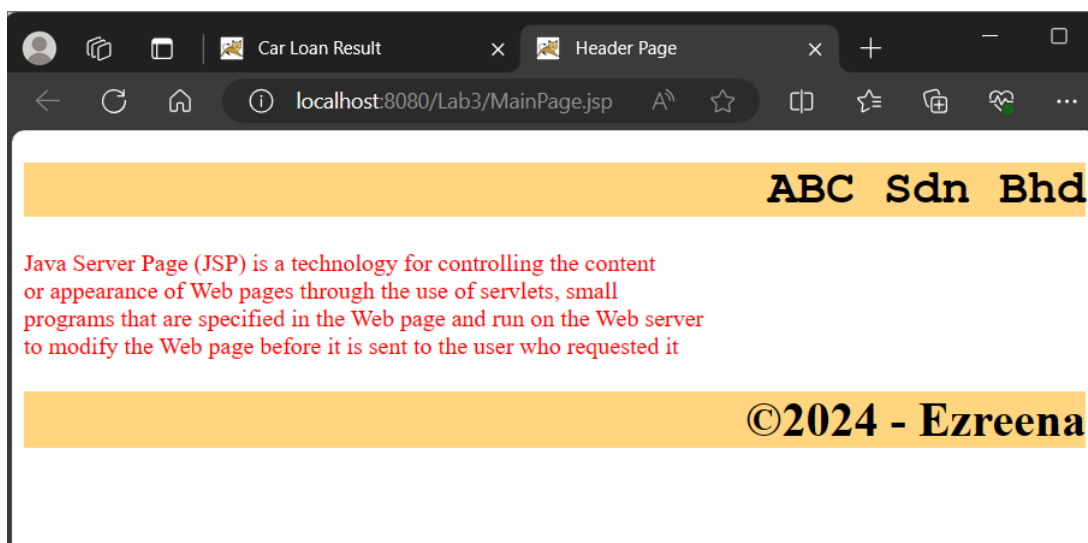
        <h1>ABC Sdn Bhd</h1>

    </header>

</body>

</html>
```

### Output:





## Reflection

- 1) What you have learnt from this exercise?

How to make header and footer using JSP.

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

```
<%@ include file="master/common.html" %>
```

## Exercise

### tempConvert.jsp

```
<%--  
    Document   : tempConvert  
    Created on : 24 Apr 2024, 4:47:06 pm  
    Author    : Nur Ezreena  
--%>  
  
<%@page contentType="text/html" pageEncoding="UTF-8"%>  
  
<!DOCTYPE html>  
  
<html>  
  
<head>  
  
<meta http-equiv="Content-Type" content="text/html; charset=UTF-
```

8">

<title>Temperature Convert</title>

</head>

<body>

<h2>Temperature Convert</h2>

<form action="<%= request.getContextPath()

%>/TemperatureConvert.jsp" method="post">

Enter temperature in Celsius: <input type="number" step="any"

name="celsius" required><br>

<input type="submit" value="Convert to Fahrenheit">

</form>

<%=

if (request.getMethod().equals("POST")) {

double celsius =

Double.parseDouble(request.getParameter("celsius"));

double fahrenheit = (9.0/5.0) \* celsius + 32;

%>

<p><%= String.format("Temperature in Fahrenheit: %.2f", fahrenheit) %></p>

<%=

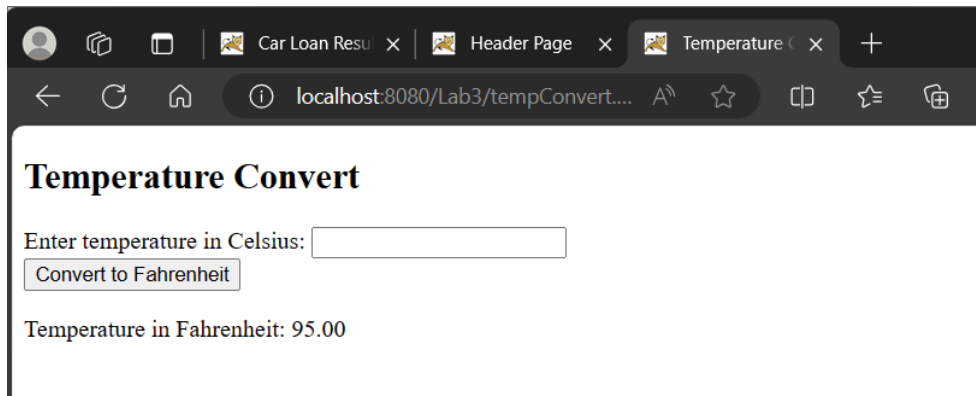
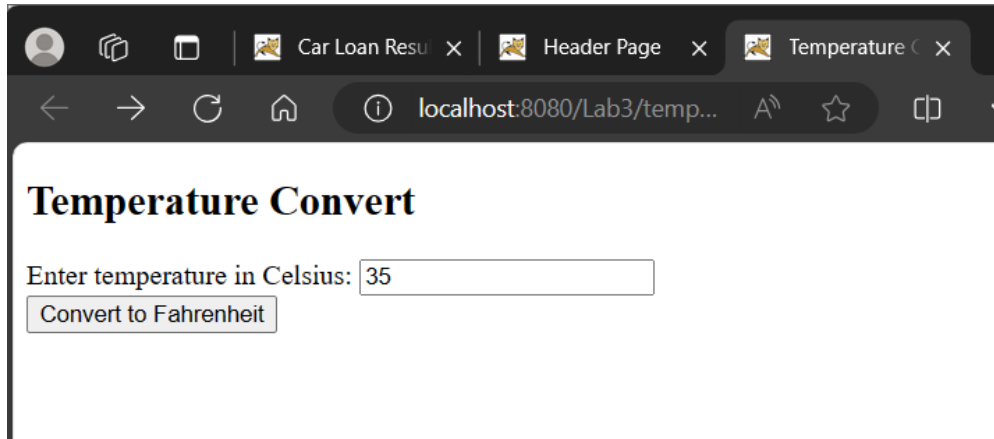
}

%>

</body>

```
</html>
```

## Output:



## Rectangle.jsp

```
<%--  
  
    Document    : Rectangle  
  
    Created on  : 24 Apr 2024, 4:51:21 pm  
  
    Author     : Nur Ezreena  
  
--%>  
  
<%@page contentType="text/html" pageEncoding="UTF-8"%>  
  
<!DOCTYPE html>  
  
<html>
```

```
<head>

<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">

  <title>Rectangle</title>

</head>

<body>

  <h2>Rectangle</h2>

  <form action="<%= request.getContextPath() %>/Rectangle.jsp"

    method="post">

    Rectangle 1:<br>

    Length: <input type="number" step="any" name="length1" required><br>

    Width: <input type="number" step="any" name="width1" required><br>

    <br>

    Rectangle 2:<br>

    Length: <input type="number" step="any" name="length2" required><br>

    Width: <input type="number" step="any" name="width2" required><br>

    <br>

    <input type="submit" value="Compare Areas">

  </form>

  <%-- Processing form submission and displaying result --%>

  <% if (request.getMethod().equals("POST")) {

    double length1 = Double.parseDouble(request.getParameter("length1"));

    double width1 = Double.parseDouble(request.getParameter("width1"));

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

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

```
double area1 = length1 * width1;
```

```
double area2 = length2 * width2;
```

```
String result;
```

```
    if (area1 > area2) {
```

```
        result = "Rectangle 1 has a greater area.";
```

```
    } else if (area1 < area2) {
```

```
        result = "Rectangle 2 has a greater area.";
```

```
    } else {
```

```
        result = "Both rectangles have the same area.";
```

```
    }
```

```
%>
```

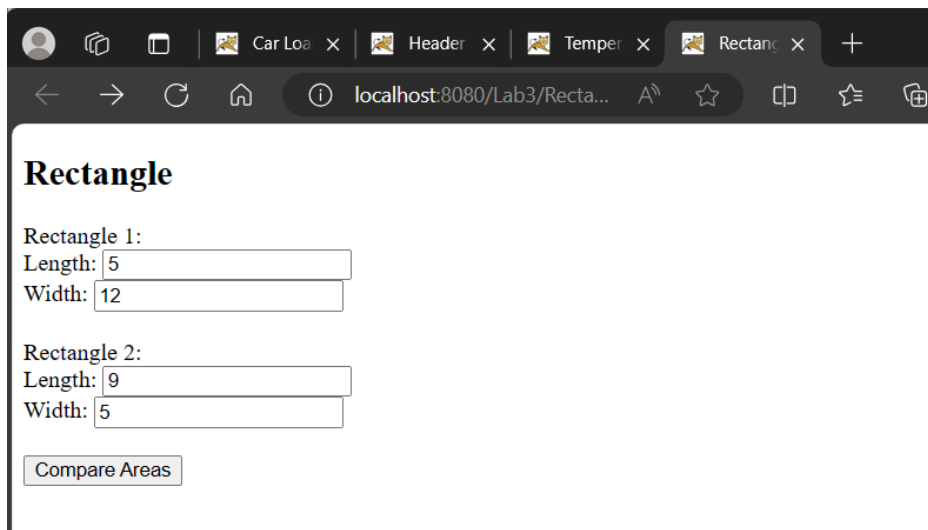
```
<p><%= result %></p>
```

```
<% } %>
```

```
</body>
```

```
</html>
```

## Output:

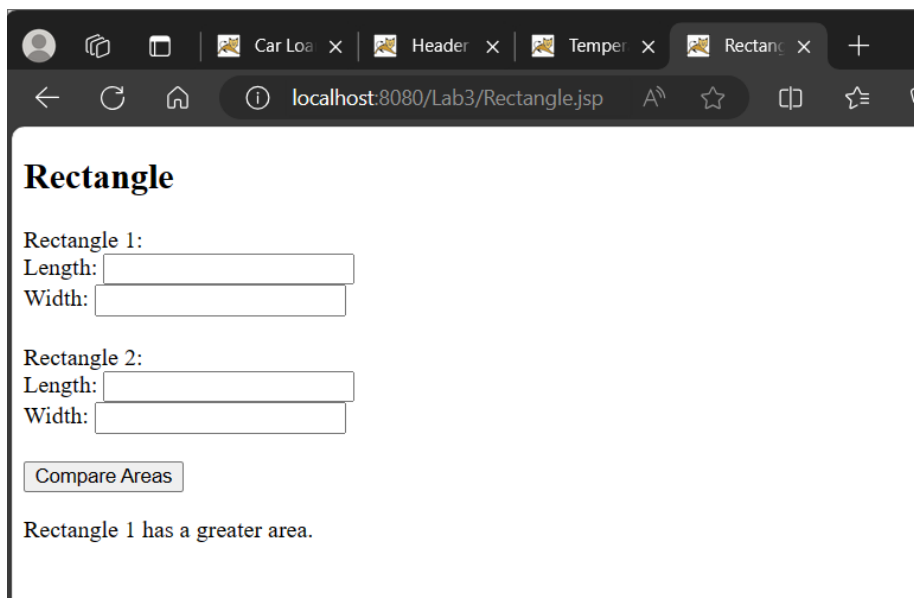


A screenshot of a web browser window. The address bar shows 'localhost:8080/Lab3/Recta...'. The page title is 'Rectangle'. The form contains two sections: 'Rectangle 1:' with 'Length: 5' and 'Width: 12', and 'Rectangle 2:' with 'Length: 9' and 'Width: 5'. A 'Compare Areas' button is at the bottom.

**Rectangle**

Rectangle 1:  
Length:   
Width:

Rectangle 2:  
Length:   
Width:



A screenshot of the same web browser window after clicking the 'Compare Areas' button. The form fields are now empty. Below the 'Compare Areas' button, the text 'Rectangle 1 has a greater area.' is displayed.

**Rectangle**

Rectangle 1:  
Length:   
Width:

Rectangle 2:  
Length:   
Width:

Rectangle 1 has a greater area.