CSM3023 WEB BASED APPLICATION DEVELOPMENT (K1)

BACHELOR OF COMPUTER SCIENCE (MOBILE COMPUTING) WITH HONORS

SEMESTER 2 2023/2024

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

Prepared by:

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

Coding:

```jsp
<%--
    Document   : memberRegister
    Created on : Apr 17, 2024, 2:51:34 PM
    Author     : ACER
--%>

<%@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="memberFrm" action="memberProcessing.jsp" method="post" onsubmit="return checkICNo()">
            <fieldset>
                <legend>Member Registration</legend>
                    <label for="invoiceno">Ic No *</label>
                    <input for="text" id="icno" name="my_icno" size="15" placeholder="E.g 921012101245"><br/>

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

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

```jsp
<%--
    Document   : memberProcessing
    Created on : Apr 17, 2024, 3:04:42 PM
    Author     : ACER
--%>

<%@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 variables...
                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>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:

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

Member Registration

Ic No * 031121010866

Name Aiman Harith Zakwan

Submit Cancel

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

Thank you for registering in this event..!

This is your details;

Ic No : 031121010866

Name : Aiman Harith Zakwan

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 2: Using Mathematics Operations in JSP

Coding:

```jsp
<%--
    Document   : Calculator
    Created on : Apr 17, 2024, 3:14:46 PM
    Author     : ACER
--%>

<%@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;
                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 />

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

Output:

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.

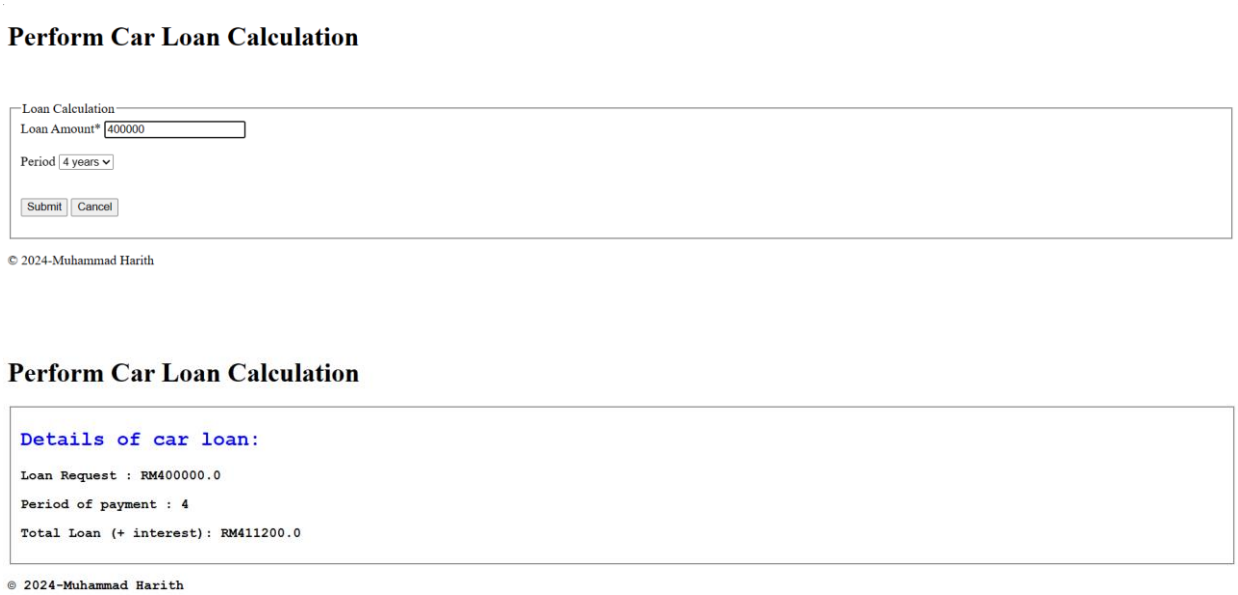
Task 4: Perform Calculation of Car Loan

Coding:

```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>
        <title>Loan Calculator MY</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
    </head>
    <body>
        <h1>Perform Car Loan Calculation</h1><br><br>
        <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>
                </select><br><br>

                <p><input type="submit" id="btnSubmit" value="Submit"/>
                    <input type="reset" id="btnCancel" value="Cancel"/>
                </p>
            </fieldset>
        </form>
        <p>&copy; 2024-Muhammad Haziq Aiman</p>
    </body>
</html>
```

```jsp
<%--
    Document   : calculateLoan
    Created on : 17 Apr 2024, 4:56:09 pm
    Author     : ACER
--%>

<%@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>

        <style>
            p{
                size: 24px;
                font-family: Courier New;
                font-weight: bold;
            }
            h2{
                color: blue;
                font-family: Courier New;
            }
        </style>
    </head>
    <body>
        <h1>Perform Car Loan Calculation</h1>
        <fieldset>
            <%
                String dAmount = request.getParameter("loan_amount");
                double amount = Double.parseDouble(dAmount);

                String dPeriod  = request.getParameter("period");
                int period = Integer.parseInt(dPeriod);

                double total = 0;

                if (period > 5){
                    total = amount * 1.045; //interest rate
                }
                else{
                    total = amount * 1.028;
                }
            %>

            <h2>Details of car loan: </h2>
            <p>Loan Request : RM<%=amount%> </p>
            <p>Period of payment : <%=period%> </p>
            <p>Total Loan (+ interest): RM<%=total%> </p>

        </fieldset>
            <p>&copy; 2024-Muhammad Harith </p>
    </body>
</html>
```

Output:



Reflection

1. How you want to retrieve data from previous page?
   By using request.getParameter method.
2. Where the construction of logic occur for calculating Total Loan (+ interest) ?
   After we received all the required datas from previous page.

Task 5: Using JSP Page Directive to Call Java API

Coding:

```
    Created on : 20 Apr 2024, 11:01:23 pm
    Author     : ACER
--%>

<%@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>
        <%
            //Create ArrayList object...
            ArrayList<String> studentList = new ArrayList<String>();
            //Store student name..
            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 Wen");
            studentList.add(5, "S. Nagarajan");

            //Display the number of records..
            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-Muhammad Harith</footer>
</html>
```

Output:

Use JSP Page Directive

The number of records in ArrayList are 6

Record 1 is Mohamad Azam

Record 2 is Peter Chong

Record 3 is Rahimah Mansor

Record 4 is Sri Devi

Record 5 is Ng Hue Wen

Record 6 is S. Nagarajan

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Reflection

1. What you have learnt from this 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

Coding:

```jsp
<%--
    Document   : headerPage
    Created on : 20 Apr 2024, 11:15:09 pm
    Author     : ACER
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    </head>
    <style>
            h1{
                padding: 40px;
                background-color: #FFBF00 ;
                font-family: Courier New;
            }
        </style>
    <body>
    <center>
        <h1>ABC Sdn Bhd</h1>
    </center>

    </body>
</html>
```

```jsp
<%--
    Document   : footerPage
    Created on : 20 Apr 2024, 11:15:22 pm
    Author     : ACER
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    </head>
    <style>
            h5{
                padding: 20px;
                background-color: #FFBF00 ;
                font-family: Courier New;
            }
        </style>
    <body>
    <center>
        <h5>&copy2024-Muhammad Harith </h5>
    </center>
</html>
```

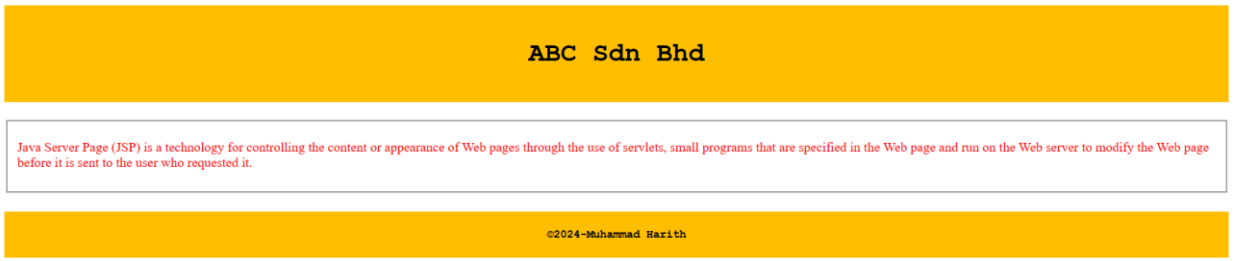
```jsp
<%--
    Document   : mainPage
    Created on : 20 Apr 2024, 11:14:56 pm
    Author     : ACER
--%>

<%@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>
        p {
            color: red;
        }
    </style>
</head>
<body>
<%@ include file="headerPage.jsp" %>

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

<%@ include file="footerPage.jsp" %>
</body>
</html>
```

Output:



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 want to include common.html file that located at

a directory known as master.

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

Exercise

1.

Coding:

```jsp
<%--
    Document   : tempUnitConverter
    Created on : 20 Apr 2024, 11:29:47 pm
    Author     : Lenovo
--%>

<%@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: 24px;
            font-family: Courier New;
            font-weight: bold;
        }
    </style>
</head>
<body>
    <h1>Calculate Celsius to Fahrenheit</h1>
    <form id="CelsiusToFahrenheitForm" action="tempUnitConverter.jsp" method="post">
        <fieldset>
            <legend>Celsius to Fahrenheit Conversion</legend>
            <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>
              <%
        // Retrieve the temperature in Celsius from the form
        String celsiusStr = request.getParameter("celsius");
        if (celsiusStr != null && !celsiusStr.isEmpty()) {
            // Convert the temperature to Fahrenheit
            // 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>
```

Output:

Calculate Celsius to Fahrenheit

Celsius to Fahrenheit Conversion

Enter Temperature in Celsius: 44 °C

Convert Cancel

Calculate Celsius to Fahrenheit

Celsius to Fahrenheit Conversion

Enter Temperature in Celsius: temperature °C

Convert Cancel

44.0 °C = 111.2 °F

2.

Coding:

```jsp

<%@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.";
    }
%>
<h1>Rectangle Area Comparison Result</h1>
<p>Area of Rectangle 1: <%= String.format("%.2f", area1) %> square cm</p>
<p>Area of Rectangle 2: <%= String.format("%.2f", area2) %> square cm</p>
<p><%= result %></p>
</body>
</html>
```

```jsp
<%--
    Document   : rectangle
    Created on : 20 Apr 2024, 11:37:03 pm
    Author     : ACER
--%>

<%@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</title>
</head>
<body>
<h1>Comparing 2 Rectangle Areas</h1>
<form id="rectangleComparison" action="area.jsp" method="post">
    <fieldset>
        <legend>Length & Width Input</legend>
        <h3>Rectangle 1</h3>
        <label for="l1">Enter length: </label>
        <input type="text" id="l1" name="l1" size="10" placeholder="length 1"> cm<br/><br/>
        <label for="w1">Enter width: </label>
        <input type="text" id="w1" name="w1" size="10" placeholder="width 1"> cm<br/><br/>

        <h3>Rectangle 2</h3>
        <label for="l2">Enter length: </label>
        <input type="text" id="l2" name="l2" size="10" placeholder="length 2"> cm<br/><br/>
        <label for="w2">Enter width: </label>
        <input type="text" id="w2" name="w2" size="10" placeholder="width 2"> cm<br/><br/>

        <p><input type="submit" id="btnSubmit" value="Compare"/>
            <input type="reset" id="btnCancel" value="Cancel"/>
        </p>
    </fieldset>
</form>
</body>
</html>
```

Output:

Comparing 2 Rectangle Areas

Length & Width Input

Rectangle 1

Enter length: 40 cm

Enter width: 20 cm

Rectangle 2

Enter length: 10 cm

Enter width: 20 cm

Compare Cancel

Rectangle Area Comparison Result

Area of Rectangle 1: 800.00 square cm

Area of Rectangle 2: 200.00 square cm

Rectangle 1 has a greater area than Rectangle 2.