



Web based Application Development (CSM3023)

Lab Report 3

JSP: Scriptlet, Page Directive & Include Directive

Programme

Computer Science (Software Engineering)

Prepared by

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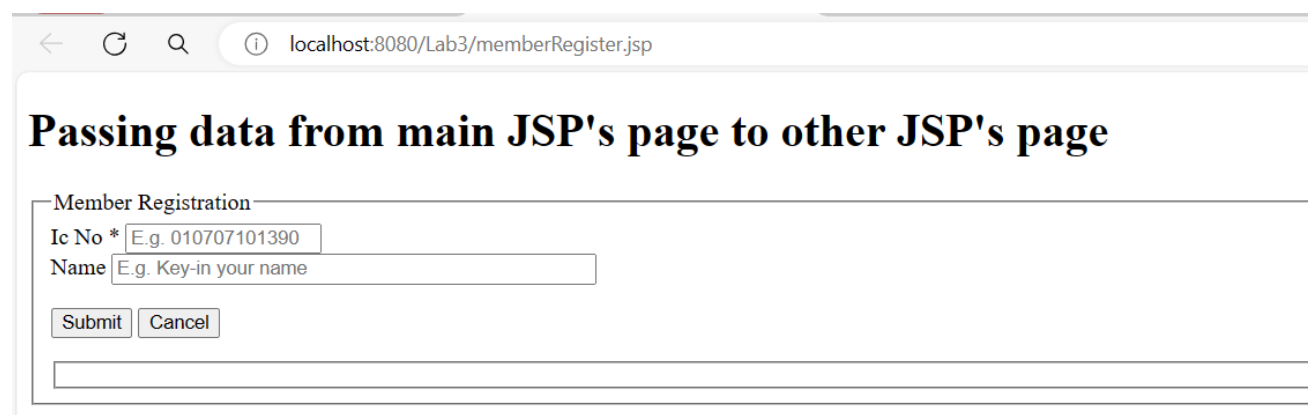
Task 1: Passing Data from Main JSP's Page to Other JSP's Page

memberRegister.jsp

```
<%@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 chechICNo()">
      <fieldset>
        <legend>Member Registration</legend>
        <label for="invoiceno">Ic No *</label>
        <input type="text" id="icno" name="my_icno" size="15" placeholder="E.g.
010707101390"><br/><!-- comment -->

        <label for="name">Name</label>
        <input type="text" id="name" name="my_name" size="45"
placeholder="E.g. 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>
```



The screenshot shows a web browser window with the address bar displaying 'localhost:8080/Lab3/memberRegister.jsp'. The page title is 'Passing data from main JSP's page to other JSP's page'. The main content area contains a form titled 'Member Registration'. The form has two text input fields: 'Ic No *' with a placeholder 'E.g. 010707101390' and 'Name' with a placeholder 'E.g. Key-in your name'. Below the input fields are two buttons: 'Submit' and 'Cancel'. There is an empty text box at the bottom of the form.

memberProcessing.jsp

```
<%@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>

    <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>
```



Reflection

1. 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?
 - I won't receive the output value that I expected. It will return 'null'

Task 2: Using Mathematic Operations in JSP

Calculator

```
<%@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>

      <form method="get" name="f1">
        <input type="text" size="20" name="operand1" value="" /><!-- comment -
->

        <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="" />
        <p><br><br><br><br><!-- comment -->
        <input type="submit" value="Calculate" />
      </form>
    </center>
  </body>
</html>
```

Basic calculator program in jsp

6 + ▾ 4

Calculate

Result = 24

Reflection

1. 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?
 - `request.getParameter("field_name")` does not match any parameter name passed from the first page, the method will return null.

Task 4: Perform Calculation of Car Loan

[calculateCarLoan.html](#)

Basic C<html>

<head>

<title>Basic Car Loan Calculation</title>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

</head>

<body>

<h1>Basic Car Loan Calculation</h1>

<h2>Loan Calculation</h2>

<form id="loanForm">

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

<input type="number" id="loanAmount" name="loanAmount"

required>

<label for="loanPeriod">Period:</label>

<select id="loanPeriod" name="loanPeriod" required>

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

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

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

<option value="6">6 years</option>

</select>

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

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

</p>

</form>

</body>

</html>

Basic Car Loan Calculation

Loan Calculation

Loan Amount*:

Period:

3 years

4 years

Submit 5 years

6 years

processCalculateCarLoan.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>Details Car Loan</title>
</head>
<body>
    <h1>Details of car loan:</h1>

    <fieldset>
        <%
            // Define variables
            double loanAmount = 0;
            int loanPeriod = 0;
            double interestRate = 0;
            double totalLoan = 0;

            // Use request.getParameter() method to retrieve data from form
            String loanAmountStr = request.getParameter("LoanAmount");
            String loanPeriodStr = request.getParameter("LoanPeriod");

            // Parse strings to appropriate data types
            if (loanAmountStr != null && !loanAmountStr.isEmpty()) {
                loanAmount = Double.parseDouble(loanAmountStr);
            }
            if (loanPeriodStr != null && !loanPeriodStr.isEmpty()) {
                loanPeriod = Integer.parseInt(loanPeriodStr);
            }

            // Calculate interest rate based on loan period
            if (loanPeriod < 5) {
                interestRate = 0.028; // 2.8% per year
            } else {
                interestRate = 0.045; // 4.5% per year
            }

            // Calculate total loan amount with interest
            totalLoan = loanAmount * Math.pow((1 + interestRate), loanPeriod);

            // Round totalLoan to two decimal places
            totalLoan = Math.round(totalLoan * 100.0) / 100.0;
        %>

        <!-- Display the output -->
        <p>Loan Request: <%= loanAmount %></p>
```



```

        <p>Period of Payment: <%= loanPeriod %> years</p>
        <p>Total Loan (+ interest): <%= totalLoan %></p>
    </fieldset>
</body>
</html>

```



Reflection

- How you want to retrieve data from previous page?
- Using `request.getParameter()`
- Where the construction of logic occur for calculating Total Loan (+ interest) ?
- `// Calculate interest rate based on loan period`
- `if (loanPeriod < 5) {`
- `interestRate = 0.028; // 2.8% per year`
- `} else {`
- `interestRate = 0.045; // 4.5% per year`
- `}`
- `// Calculate total loan amount with interest`
- `totalLoan = loanAmount * Math.pow((1 + interestRate), loanPeriod);`
- `// Round totalLoan to two decimal places`
- `totalLoan = Math.round(totalLoan * 100.0) / 100.0;`

Task 5: Using JSP Page Directive to Call Java API

ArrayList.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 Directive</h1>

    <%
      //create ArrayList object
      ArrayList<String> studentList = new ArrayList<String>(); // corrected variable
name
      //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 Ween");
      studentList.add(5, "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>
  <br/><!-- comment -->
  <footer>&copy;2024-NurSyaza Amira</footer>
</html>
```

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 Ween

Record 6 is S. Nagarajan

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Reflection

1. What you have learnt from this exercise?
 - I learnt how to use JSP page directive elements to call certain Java API
2. Write a sample syntax how you want to use java Math object in JSP?
 - `<p>Square Root: <%= squareRoot %></p>`
3. List and write a sample syntax for THREE (3) of JSP page directive.
 - Page Directive: page
 - `<% @page contentType="text/html; charset=UTF-8" language="java" errorPage="error.jsp" %>`
 - Include Directive: include
 - `<% @include file="header.jsp" %>`
 - Taglib Directive: taglib
 - `<% @taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>`

Task 6: Use JSP Include directive for JSP Page

Mainpage.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>Using JSP Include directive</title>
</head>
<body>
    <!-- Include headerPage.jsp -->
    <%@include file="headerPage.jsp" %>

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

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

headerPage.jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html lang="en">
<head>
<title>Page Title</title>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<style>
/* Style the body */
body {
    font-family: Arial;
    margin: 0;
}

/* Header/Logo Title */
.header {
    padding: 60px;
```

```

    text-align: center;
    background: orange;
    color: white;
    font-size: 25px;
}

</style>
</head>
<body>

<div class="header">
  <h1>Megah Holding Sdn Bhd</h1>
</div>

</body>
</html>

```

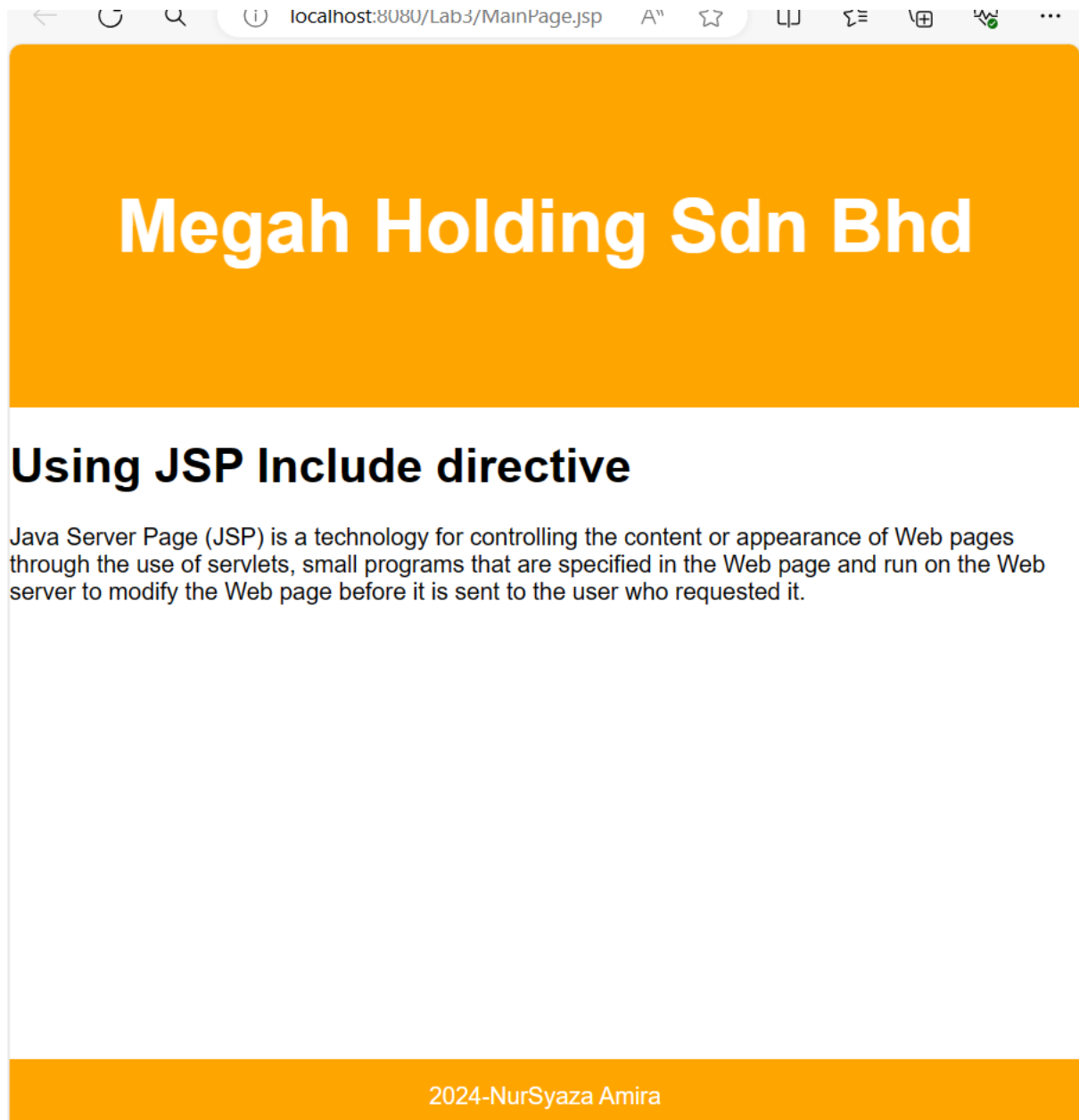
footerPage.jsp

```

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<style>
.footer {
  position: fixed;
  left: 0;
  bottom: 0;
  width: 100%;
  background-color: orange;
  color: white;
  text-align: center;
}
</style>
</head>
<body>

<div class="footer">
  <p>2024-NurSyaza Amira</p>
</div>
</body>
</html>

```



Reflection

1. What you have learnt from this exercise?
 - I learnt how to display header and footer in main page using JSP Include directive for JSP page
2. Write a syntax how you want to include common.html file that located at a directory known as master.
 - Write a syntax how you want to include common.html file that located at a directory known as master.

Exercise1

Exercise1.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
    <meta charset="UTF-8">
    <title>Temperature Converter</title>
</head>
<body>
    <h1>Temperature Converter</h1>

    <form method="post" action="">
        <label for="celsius">Enter Temperature in Celsius:</label>
        <input type="text" id="celsius" name="celsius" required>
        <input type="submit" value="Convert to Fahrenheit">
    </form>

    <%
        // Check if form is submitted
        if (request.getMethod().equalsIgnoreCase("POST")) {
            // Get temperature in Celsius from form input
            double celsius = Double.parseDouble(request.getParameter("celsius"));
            // Convert Celsius to Fahrenheit
            double fahrenheit = (9.0 / 5.0) * celsius + 32;
        %>

        <h2>Result:</h2>
        <p><%= celsius %> degrees Celsius is equal to <%= fahrenheit %> degrees
        Fahrenheit.</p>

        <%
        }
    %>
</body>
</html>
```

Temperature Converter

Enter Temperature in Celsius:

Result:

870.0 degrees Celsius is equal to 1598.0 degrees Fahrenheit.

Exercise2

Exercise2.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
    <meta charset="UTF-8">
    <title>Rectangle Area Comparison</title>
</head>
<body>
    <h1>Rectangle Area Comparison</h1>

    <form method="post" action="">
        <label for="length1">Rectangle 1 Length:</label>
        <input type="text" id="length1" name="length1" required><br>
        <label for="width1">Rectangle 1 Width:</label>
        <input type="text" id="width1" name="width1" required><br><br>

        <label for="length2">Rectangle 2 Length:</label>
        <input type="text" id="length2" name="length2" required><br>
        <label for="width2">Rectangle 2 Width:</label>
        <input type="text" id="width2" name="width2" required><br><br>

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

    <%
        if (request.getMethod().equalsIgnoreCase("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.";  
        }  
    %>  
  
<h2>Result:</h2>  
<p><%= result %></p>  
  
<%  
    }  
%>  
</body>  
</html>
```

Rectangle Area Comparison

Rectangle 1 Length:

Rectangle 1 Width:

Rectangle 2 Length:

Rectangle 2 Width:

Result:

Rectangle 1 has a greater area.