Week 3

JSP: Scriptlet, Expression & Standard Actions

Web Programming 2

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Revision History

Revision Date	Previous Revision Date	Summary of Changes	Changes Marked
		First Issue	Mohamad Nor Hassan
		Second Issue	Dr Rabiei Mamat Dr Faizah Aplop Dr Fouad Ts Dr Rosmayati Mohemad Fakhrul Adli Mohd Zaki
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Arahan:

Manual makmal ini adalah untuk kegunaan pelajar-pelajar Pusat Pengajian Informatik dan Matematik Gunaan (PPIMG), Universiti Malaysia Terengganu (UMT) sahaja. Tidak dibenarkan mencetak dan mengedar manual ini tanpa kebenaran rasmi daripada penulis.

Sila ikuti langkah demi langkah sebagaimana yang dinyatakan di dalam manual. Tandakan (√) setiap langkah yang telah selesai dibuat dan tulis kesimpulan bagi setiap aktiviti yang telah selesai dijalankan.

Instruction:

This laboratory manual is for use by the students of the School of Informatics and Applied Mathematics (PPIMG), Universiti Malaysia Terengganu (UMT) only. It is not permissible to print and distribute this manual without the official authorisation of the author.

Please follow step by step as described in the manual. Tick (√) each step completed and write the conclusions for each completed activity.

Task 1: Using JSP Scripting

Objective : JSP Scriptlet and JSP Expression in application.

Problem : Prepare a simple interface to perform the following payment process;

Description

i. If Customer Type is Normal Customer (assign value as "1") and Order Quantity > 100, customer entitle 10% discount.

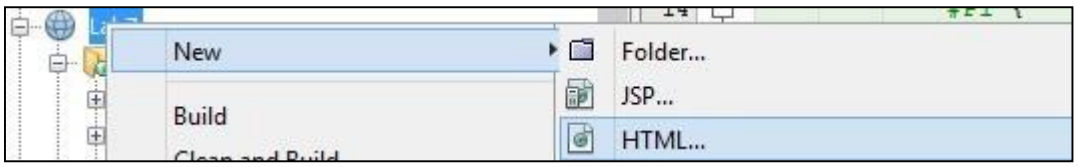
ii. If Customer Type is Privilege Customer (assign value as "2") and Order Quantity > 100, customer entitle 25% discount.

iii. Order Quantity must be in number.

iv. Finally, display the results.

Estimated time : 40 minutes

1. Create Project *Lab3*.
2. Create a new HTML's file.



3. Type file name as *customer*.

4. Prepare the following Graphical User Interface (GUI).

5. You must ensure the amount must be written as number.

6. The value for **Normal Customer** is "1" and **Privilege Customer** is "2"

7. Create a new file name known as *processCustomer.jsp*.

8. Define `related` variables and methods as below.

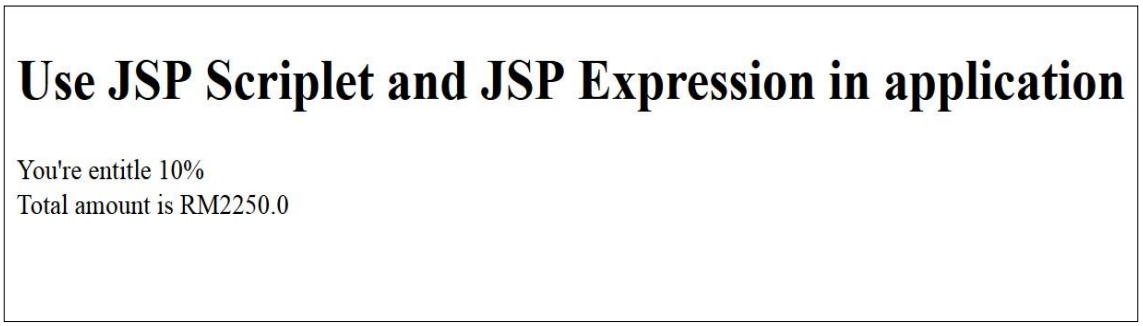
```
<%
    final int price = 10;

    //Using JSP Scriptlet...
    String cust_no1 = request.getParameter("cust_no");
    int quantity1 = Integer.parseInt(request.getParameter("quantity"));
    String cust_type1 = request.getParameter("cust_type");

    //Determine customer..
    if (cust_type1.equals("1") && quantity1 > 100) {
        out.print("You're entitle " + "10%");%> <br>  <%
            out.print("Total amount is RM" + quantity1 * price * 0.9);
        } else if (cust_type1.equals("2") && quantity1 > 100) {
            out.print("You're entitle " + "25%");%> <br>  <%
                out.print("Total amount is RM" + quantity1 * price * 0.75);
                    } else {
                        out.print("You're not entitle discount..!");%> <br>  <%
                                    out.print("Total amount is RM" + quantity1 * price);
                                }
%>
```

9. Compile *customer.html* and *processCustomer.jsp* file.

10. Run *customer.html*.

11. Enter information to the interface.

12. Output will appear in web browser.



Reflection

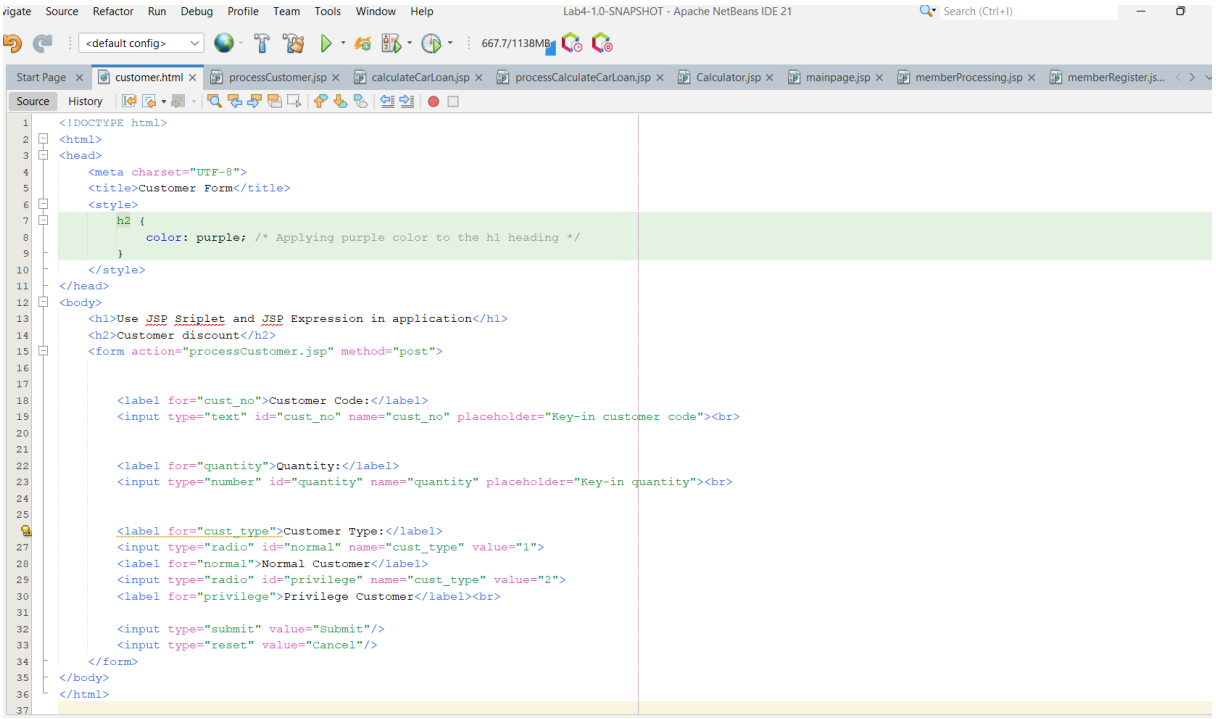
1. What you have learnt from this exercise?

   How to use JSP Scriplet and JSP Expression in application.

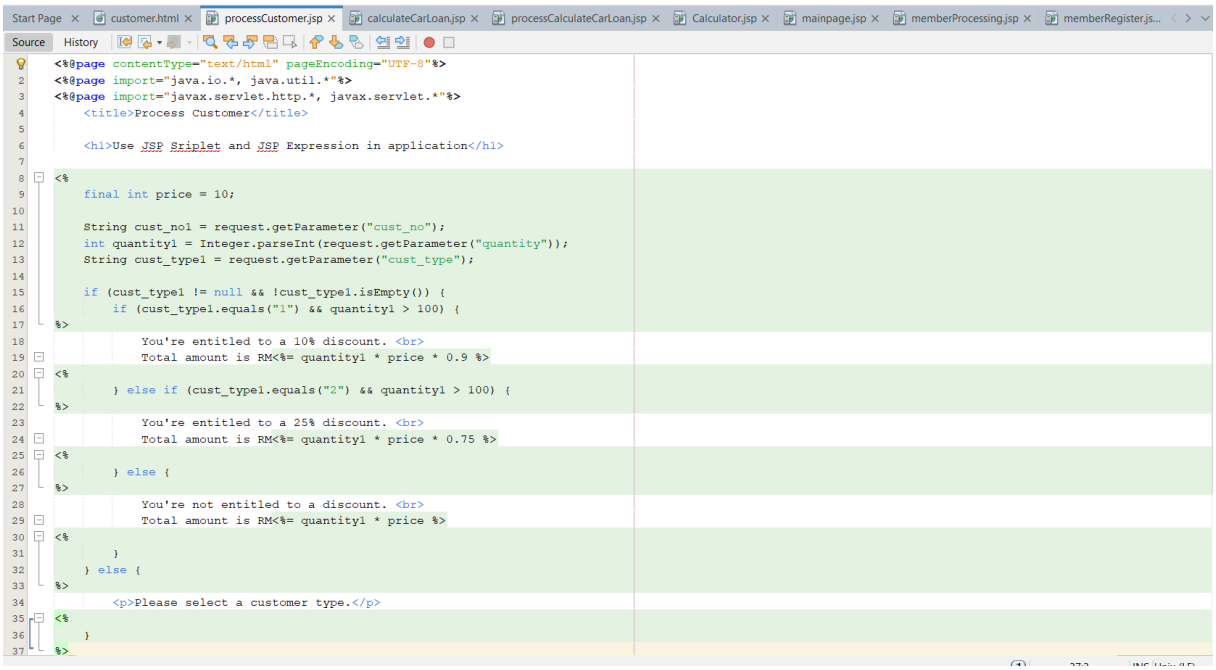
2. Explain three (3) type of JSP scripting?

   Expression, scriptlets and declarations.

THE CODE :

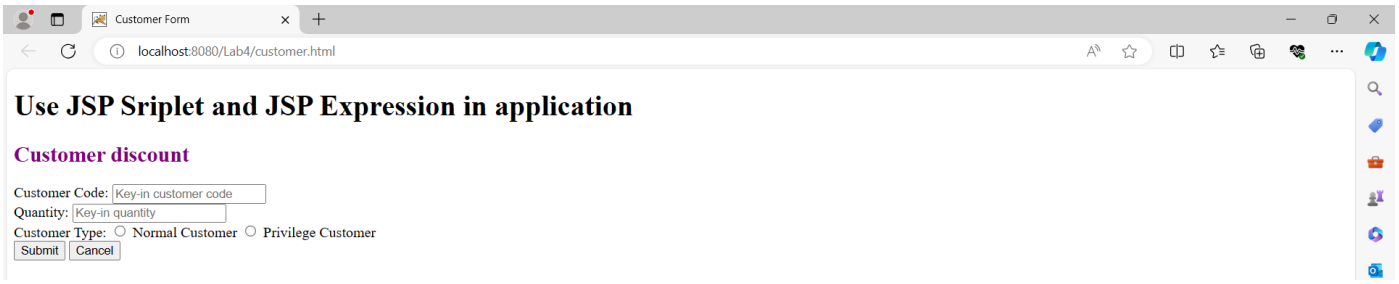


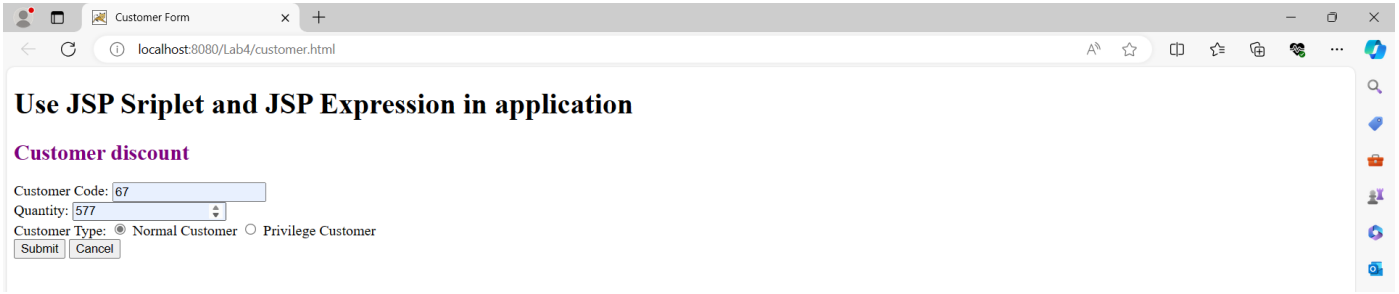
```
<!DOCTYPE html>
<html>
<head>
    <meta charset="UTF-8">
    <title>Customer Form</title>
    <style>
        h2 {
            color: purple; /* Applying purple color to the h1 heading */
        }
    </style>
</head>
<body>
    <h1>Use JSP Sriplet and JSP Expression in application</h1>
    <h2>Customer discount</h2>
    <form action="processCustomer.jsp" method="post">


        <label for="cust_no">Customer Code:</label>
        <input type="text" id="cust_no" name="cust_no" placeholder="Key-in customer code"><br>


        <label for="quantity">Quantity:</label>
        <input type="number" id="quantity" name="quantity" placeholder="Key-in quantity"><br>


        <label for="cust_type">Customer Type:</label>
        <input type="radio" id="normal" name="cust_type" value="1">
        <label for="normal">Normal Customer</label>
        <input type="radio" id="privilege" name="cust_type" value="2">
        <label for="privilege">Privilege Customer</label><br>

        <input type="submit" value="Submit"/>
        <input type="reset" value="Cancel"/>
    </form>
</body>
</html>
```



```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page import="java.io.*, java.util.*"%>
<%@page import="javax.servlet.http.*, javax.servlet.*"%>
    <title>Process Customer</title>

    <h1>Use JSP Sriplet and JSP Expression in application</h1>

<%
    final int price = 10;

    String cust_no1 = request.getParameter("cust_no");
    int quantity1 = Integer.parseInt(request.getParameter("quantity"));
    String cust_type1 = request.getParameter("cust_type");

    if (cust_type1 != null && !cust_type1.isEmpty()) {
        if (cust_type1.equals("1") && quantity1 > 100) {
%>
            You're entitled to a 10% discount. <br>
            Total amount is RM<%= quantity1 * price * 0.9 %>
<%
        } else if (cust_type1.equals("2") && quantity1 > 100) {
%>
            You're entitled to a 25% discount. <br>
            Total amount is RM<%= quantity1 * price * 0.75 %>
<%
        } else {
%>
            You're not entitled to a discount. <br>
            Total amount is RM<%= quantity1 * price %>
<%
        }
    } else {
%>
        <p>Please select a customer type.</p>
<%
    }
%>
```

THE OUTPUT:


Customer Form
localhost:8080/Lab4/customer.html
Use JSP Sriplet and JSP Expression in application
Customer discount
Customer Code: Key-in customer code
Quantity: Key-in quantity
Customer Type: Normal Customer Privilege Customer
Submit Cancel


Customer Form
localhost:8080/Lab4/customer.html
Use JSP Sriplet and JSP Expression in application
Customer discount
Customer Code: 67
Quantity: 577
Customer Type: Normal Customer Privilege Customer
Submit Cancel


Process Customer
localhost:8080/Lab4/processCustomer.jsp
Use JSP Sriplet and JSP Expression in application
You're entitled to a 10% discount.
Total amount is RM5193.0

Task 2: Using JSP (Scripting, Declaration and Expression)

Objective : Use JSP Declaration tag, JSP Scriptlet and JSP Expression in application.

Problem Description : Create currency conversion page to Malaysia Ringgit into US Dollar, Euro or Pound Sterling.

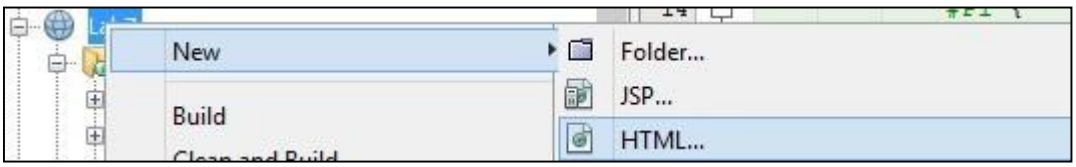
1 USD = RM3.92

1 Pound Sterling = RM5.96

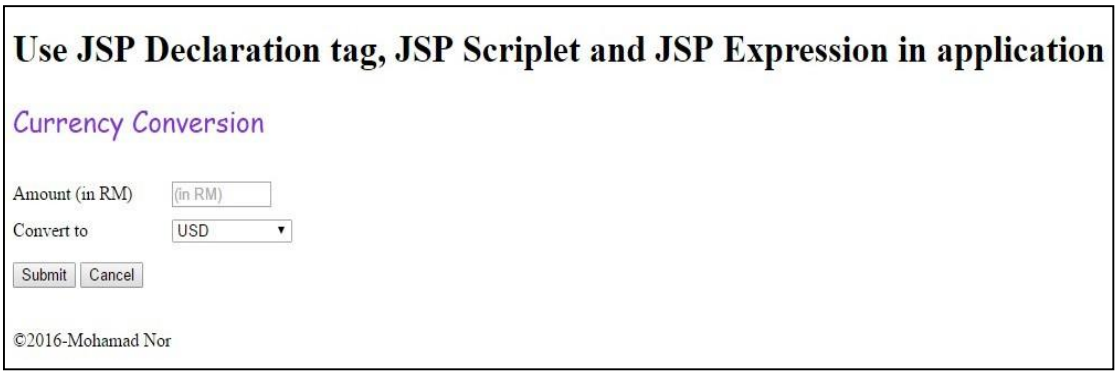
1 Euro = RM4.47;

Estimated time : 40 minutes

1. Choose Project *Lab3*.
2. Create a new HTML's file.



3. Type file name as *currencyConversion*.
4. Prepare the following Graphical User Interface (GUI).



5. You must ensure the amount must be written as number.

6. The value for USD is “1”, Pound Sterling is “2” and Euro is “3”

7. Create a new file name known as *processCurrency.jsp*.

8. Define related variables, currency rate as a constant and method *calculateRate(String code, int amount)* in JSP declaration tag as below.

```
<%!
      //Added by : 10 April 2016 - Mohamad Nor
      //Define constant....
      final double USD = 3.92;
      final double STG = 5.96;
      final double EURO = 4.47;

      //Define method to perform currency exchange....
      private double calculateRate(String currency, int amount)
      {
          double currencyChange=0.00f;

          if ( currency.equals("1") )
             currencyChange = (double)( amount * USD);
          if ( currency.equals("2") )
             currencyChange = (double)( amount * STG);
          if ( currency.equals("3") )
             currencyChange = (double)( amount * EURO);

          return currencyChange;  //return the resutt....
      }
%>
```

9. In your JSP scriptlet, retrieve the value for *Amount* and *Convert to* and assign to respective variables.

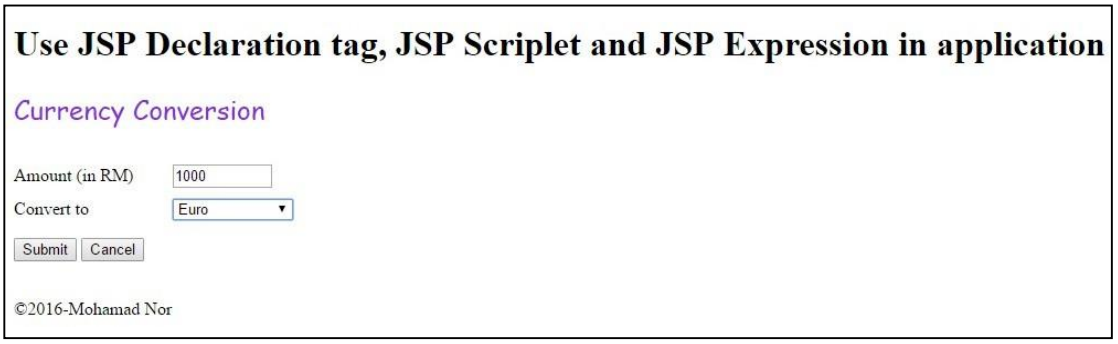
10. Call method *calculateRate(String code, int amount)* to perform currency conversion.

11. Finally, display the result using JSP Expression tag.

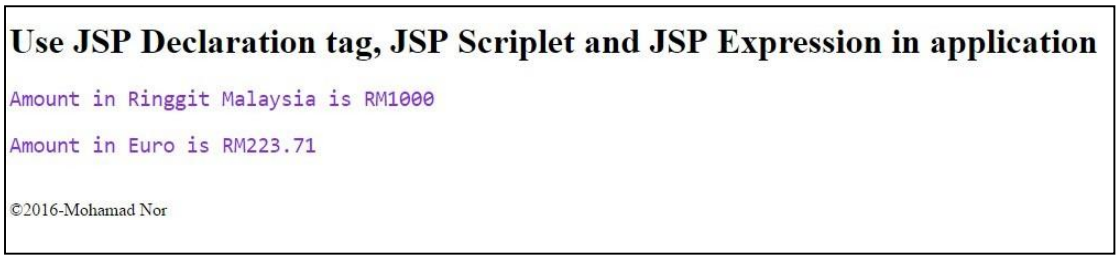
12. Compile *currencyConversion.html* and *processCurrency.jsp* file.

13. Run *currencyConversion.html*.

14. Enter the following information



15. Output will appear in web browser (*Note: Amount must be in 2 decimal places*).



Reflection

1. What have you learn from this exercise?

   how to use Use JSP Declaration tag, JSP Scriptlet and JSP Expression in application.

THE CODE:

```
<!DOCTYPE html>
<html>
<head>
  <meta charset="UTF-8">
  <title>Currency Converter</title>
  <style>
    h2 {
      color: purple;
    }
  </style>
</head>
<body>
  <h1>Currency Conversion</h1>

  <form action="processCurrency.jsp" method="post">
    <label for="amount">Amount (in RM):</label>
    <input type="number" id="amount" name="amount" placeholder="Enter amount"><br>

    <label for="currency">Convert to:</label>
    <select id="currency" name="currency">
      <option value="USD">USD</option>
      <option value="STG">STG</option>
      <option value="EURO">EURO</option>
    </select><br>

    <input type="submit" value="Submit">
    <input type="reset" value="Reset">
  </form>

</body>
</html>
```

```jsp
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>Currency Conversion</title>
</head>
<body>
    <h1>Currency Conversion</h1>

    <%!
        // Define constant exchange rates
        final double USD = 3.92;
        final double STG = 5.96;
        final double EURO = 4.47;

        // Define method to perform currency exchange
        private double calculateRate(String currency, int amount) {
            double currencyChange = 0.00;

            if (currency.equals("USD")) {
                currencyChange = amount * USD;
            } else if (currency.equals("STG")) {
                currencyChange = amount * STG;
            } else if (currency.equals("EURO")) {
                currencyChange = amount * EURO;
            }

            return currencyChange;
        }
```

```jsp
    %>

    <%
        // Get parameters from the request
        String currency = request.getParameter("currency");
        int amount = Integer.parseInt(request.getParameter("amount"));

        // Calculate currency conversion
        double currencyChange = calculateRate(currency, amount);
    %>

    <p>Amount in Ringgit Malaysia: <%= amount %></p>
    <p>Amount in <%= currency %>: <%= currencyChange %></p>
</body>
</html>
```

THE OUTPUT:


Currency Conversion
localhost:8080/Lab4/processCurrency.jsp
Currency Conversion
Amount in Ringgit Malaysia: 100
Amount in USD: 392.0

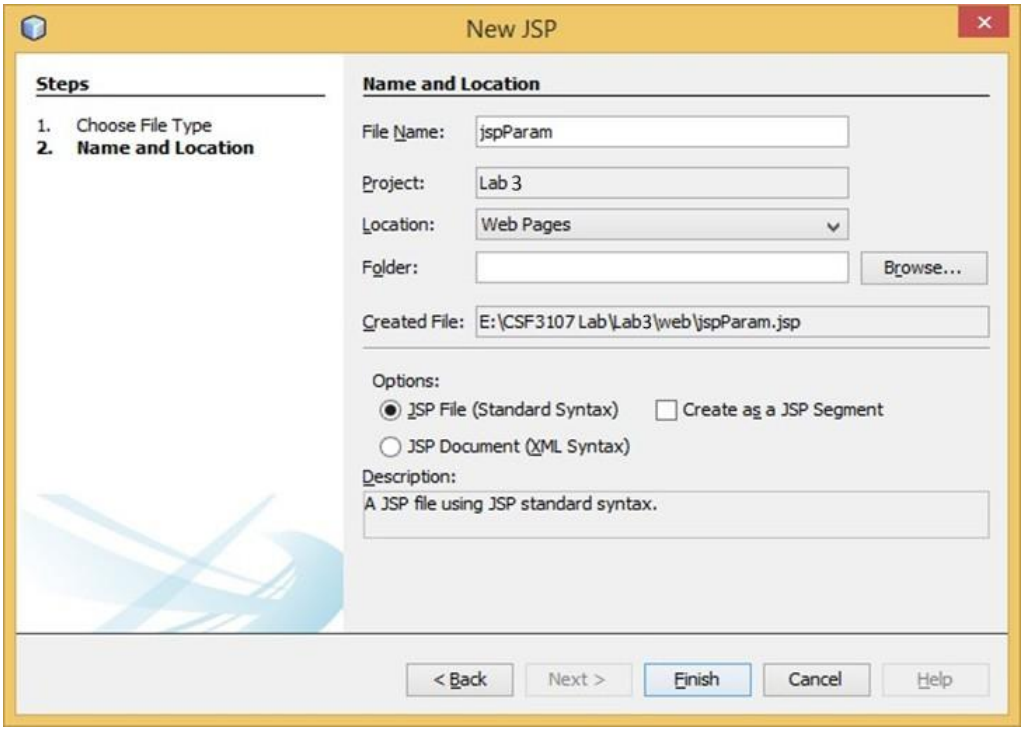
Task 3: Using JSP Standard Action (Include and Param)

Objective : Using <*jsp:include*> and <*jsp:param*> to display information on JSP page

Problem Description : Display the course information.

Estimated time : 20 minutes

1. Go to Project *Lab3*.
2. Create a new JSP's file known as *jspParameter*.



3. Prepare the following HTML's syntax.

```
<%--
    Document   : jspParam
    Created on : 11-Apr-2016, 14:06:19
    Author     : Mohamad Nor Hasssan
--%>

<%@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 Standard Action </title>
    </head>
    <body>
        <h1>Using jsp:include and jsp:param to display information on JSP page</h1>
    </body>
</html>
```

4. Add Java scriptlet.

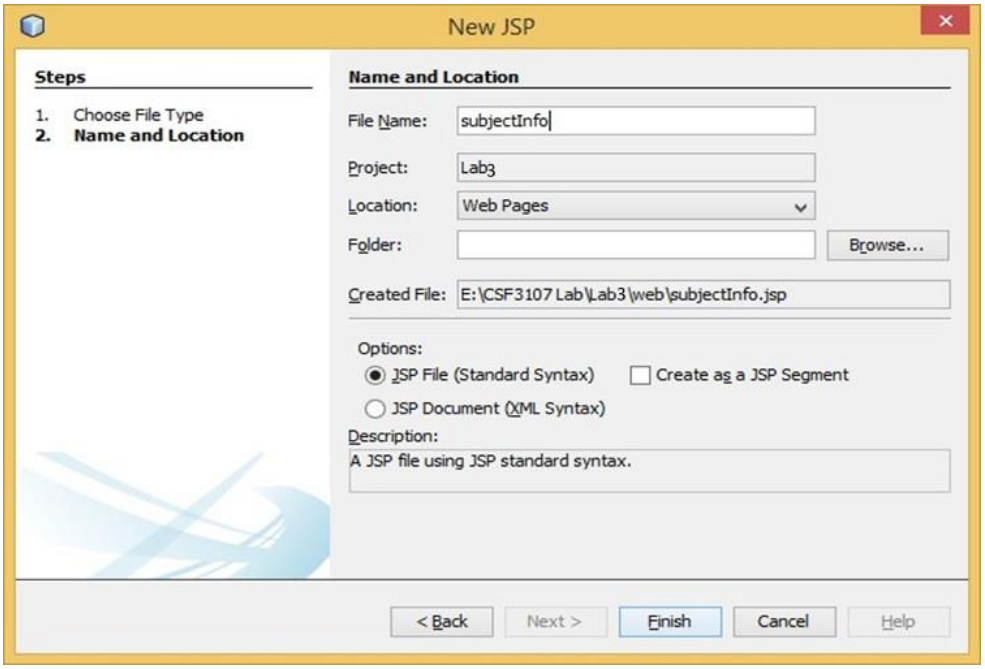
```
    <body>
        <h1>Using jsp:include and jsp:param to display information on JSP page</h1>
        <%
            String sCode = "CSF3107";
            String sSubject = "Web Programming 2";
            String sCredit = "3(2+1)";
        %>
    </body>
```

5. Add JSP Standard Action <*jsp:include*> to call *subjectInfo.jsp's* page and <*jsp:parameter*> to store the subject's information .

```
        <!-- Call subjectInfo.jsp page & passing course information
             to respective parameters...-->
        <jsp:include page="subjectInfo.jsp" flush="true">
            <jsp:param name="code" value="<%=sCode%>"/>
            <jsp:param name="subject" value="<%=sSubject%>"/>
            <jsp:param name="credit" value="<%=sCredit%>"/>
        </jsp:include>
    </body>
```

6. Save *jspParameter.jsp*'s file.

7. Create another JSP's file known as *subjectInfo*.



8. Write the following HTML's syntax.

```
<%--
    Document   : subjectInfo
    Created on : 11-Apr-2016, 14:45:36
    Author     : Mohamad Nor
--%>

<%@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 Standard Action</title>
    </head>
    <body>
        <h1>Calling subjectInfo.jsp page</h1>
    </body>
</html>
```

9. Add three (3) paragraphs and use JSP expression to retrieve and assign value to these paragraphs.

```
    <body>
        <h1>Calling subjectInfo.jsp page</h1>
        <p>Code = <%=request.getParameter("code")%></p>
        <p>Subject = <%=request.getParameter("subject")%></p>
        <p>Credit = <%=request.getParameter("credit")%></p>
    </body>
```

11. Save all files.

12. Compile and run *jspParameter.jsp*'s file.

13. Output will appear in web browser.

Reflection

1. What you have learnt from this exercise?

   How to use and to display information on JSP page

2. List **TWO (2)** other JSP Standard Action Tag.

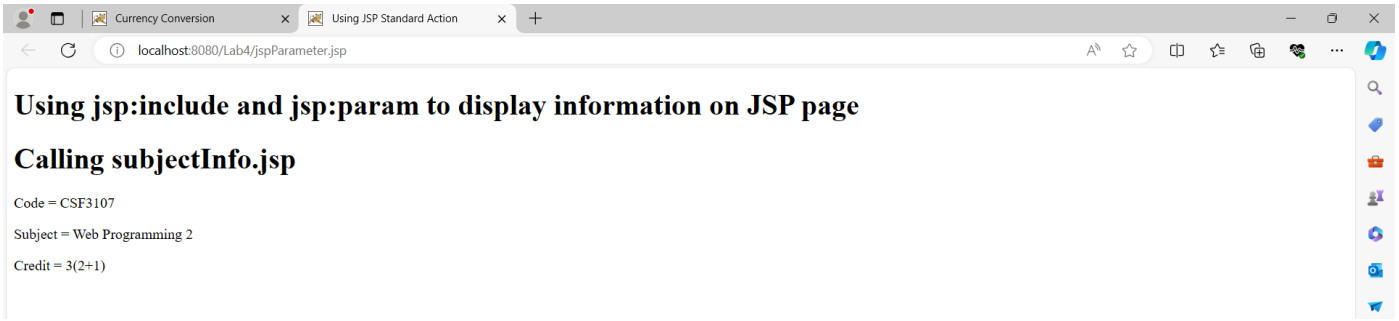
   jsp:useBean
   jsp:setProperty

THE CODE:

```jsp
<%--
    Document   : jspParameter
    Created on : 26 Apr 2024, 2:53:33 pm
    Author     : linda
--%>

<%@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 Standard Action</title>
    </head>
    <body>
        <h1>Using jsp:include and jsp:param to display information on JSP page</h1>
        <%
            String sCode = "CSF3107";
            String sSubject = "Web Programming 2";
            String sCredit = "3(2+1)";
        %>

        <!--Call subjectInfo.jsp page & passing information
        to repective parameters...-->
        <jsp:include page="subjectInfo.jsp" flush="true">
            <jsp:param name="code" value="<%=sCode%>"/>
            <jsp:param name="subject" value="<%=sSubject%>"/>
            <jsp:param name="credit" value="<%=sCredit%>"/>
        </jsp:include>
    </body>
</html>
```

```jsp
<%--
    Document   : subjectInfo
    Created on : 26 Apr 2024, 3:08:34 pm
    Author     : linda
--%>

<%@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 Standard Action</title>
    </head>
    <body>
        <h1>Calling subjectInfo.jsp</h1>
        <p>Code = <%=request.getParameter("code")%></p>
        <p>Subject = <%=request.getParameter("subject")%></p>
        <p>Credit = <%=request.getParameter("credit")%></p>
    </body>
</html>
```

THE OUTPUT:


Currency Conversion
Using JSP Standard Action
localhost:8080/Lab4/jspParameter.jsp
Using jsp:include and jsp:param to display information on JSP page
Calling subjectInfo.jsp
Code = CSF3107
Subject = Web Programming 2
Credit = 3(2+1)

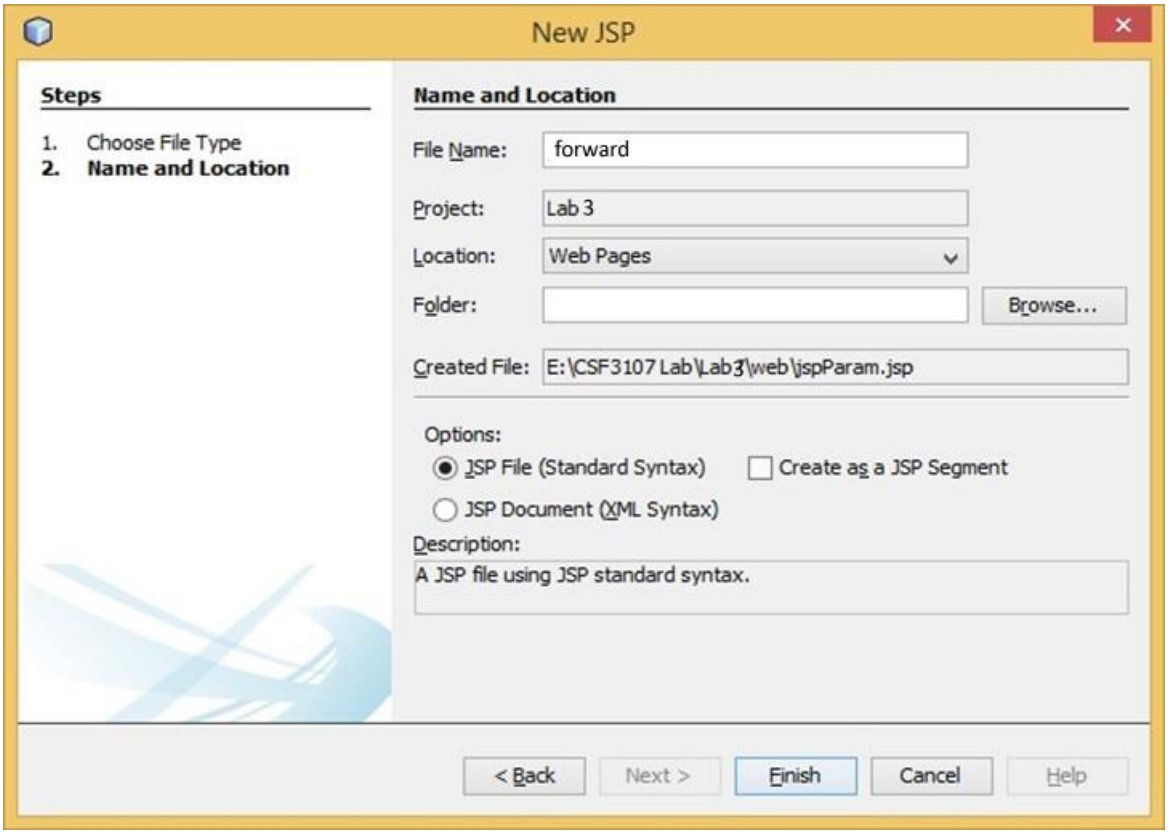
Task 4: Using JSP Standard Action (Forward)

Objective : Using <*jsp: forward*> to display user information and object on JSP page

Problem : Display user information.

Estimated time : 20 minutes

1. Go to Project *Lab3*.
2. Create a new JSP's file known as *forward*.



3. Prepare the following HTML's syntax.

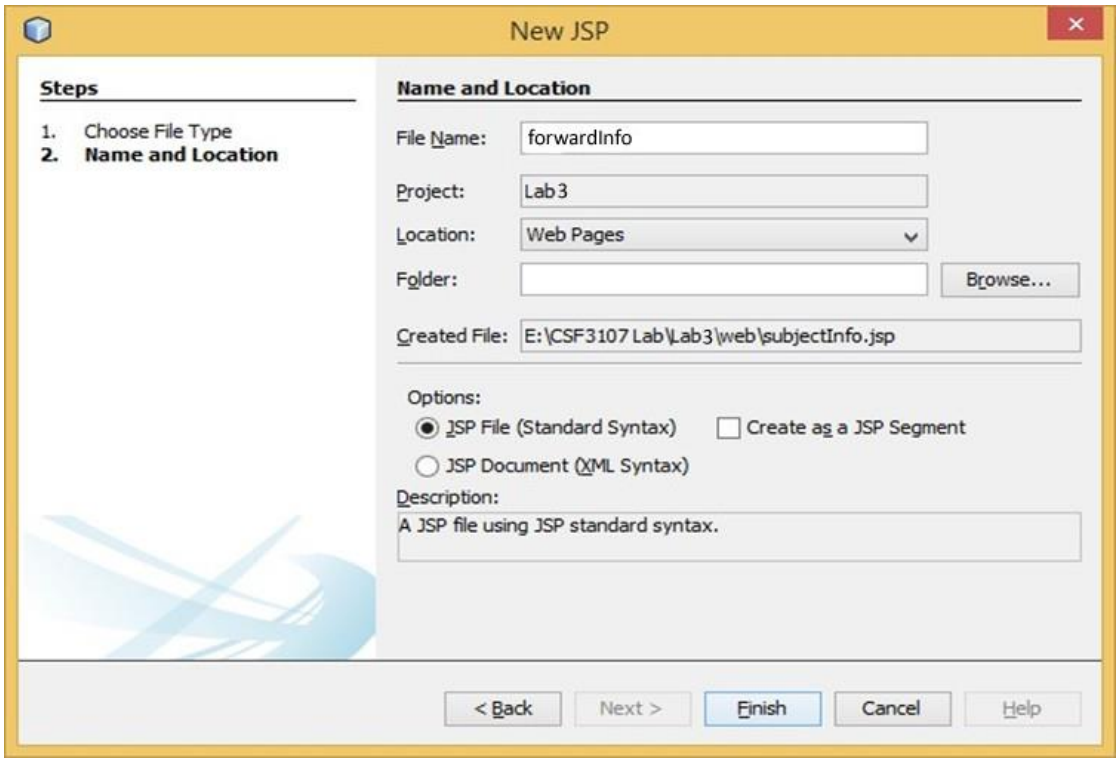
```
<html>

    <head>

        <title>Using JSP Standard Action(forward)</title>

    </head>

    <body>
        <h2>Using jsp:forward to display user info.</h2>

    </body>

</html>
```

4. Add JSP Standard Action <*jsp:forward*> to call *forwardInfo.jsp's* page and <*jsp:parameter*> to store the user's information.

```
<body>
    <h2>Using jsp:forward to display user info.</h2>
    <jsp:forward page="forwardInfo.jsp">
        <jsp:param name= "U_Name" value="Fouad Abdulameer"/>
        <jsp:param name= "Email" value="fouadaug@gmail.com"/>
        <jsp:param name= "Nationality" value="Iraqi"/>
        <jsp:param name= "Background" value="Developer"/>
    </jsp:forward>

</body>
```

5. Save *forward.jsp*'s file.

6. Create another JSP's file known as *forwardInfo*.



7. Write the following code.

```
<html>
    <head>
        <title>&lt;Forwarded_Action Example in JSP&gt;</title>
    </head>
    <body>

        <% String name = request.getParameter("U_Name"); %>
        <% String Email = request.getParameter("Email"); %>
        <% String Nationality = request.getParameter("Nationality"); %>
        <% String Background = request.getParameter("Background"); %>
        <%  if (name != null) {%>
        <b><br><br><h2 align="center">

                <%=name%><br>
                <%=Email%><br>
                <%=Nationality%><br>
                <%=Background%><br><br>

                <% out.print("Today is:" + java.util.Calendar.getInstance().getTime());%>
            </h2></b></br>
            <%}%>
    </body>
</html>
```

8. Save all files.

9. Compile and run *forward.jsp*'s file.

10. Output will appear in web browser.

Reflection

1. What you have learnt from this exercise?

   how to use to display user information and object on JSP page

2. List **TWO(2)** More JSP Standard Action Tag.

   jsp:fallback
   jsp:plugin

THE CODE:

```
<%--
    Document   : forward
    Created on : 24 April 2024, 12:59:45 am
    Author     : linda
--%>

<%@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 Standard Action (forward)</title>
    </head>
    <body>
        <h2>Using jsp:forwrd to display user info.</h2>
        <jsp:forward page="forwardInfo.jsp">
            <jsp:param name="U_Name" value="Fpuad Abdulameer"/>
            <jsp:param name="Email" value="fouadaug@gmail.com"/>
            <jsp:param name="Nationality" value="Iraqi"/>
            <jsp:param name="background" value="Developer"/>
        </jsp:forward>
    </body>
</html>
```

```jsp
<%--
    Document   : forwardInfo
    Created on : 24 April 2024, 1:28:35 am
    Author     : linda
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>&It;Forwarded_Action Example in JSP&gt;</title>
    </head>
    <body>
        <% String name = request.getParameter("U_Name"); %>
        <% String Email = request.getParameter("Email"); %>
        <% String Nationality = request.getParameter("Nationality"); %>
        <% String Background = request.getParameter("Background"); %>
        <% if (name != null) {%>
        <b><br><br><h2 align="center">

                <%=name%><br>
                <%=Email%><br>
                <%=Nationality%><br>
                <%=Background%><br><br>

                <% out.print("Today is:" + java.util.Calendar.getInstance().getTime());%>
            </h2></b></br>
            <%}%>
    </body>
</html>
```

THE OUTPUT:

Task 5: Use Java Scriptlet To Construct Business Logic

Objective : Use Java Scriplet to perform business logic.

Problem Description : Create a simple web based form to calculate the insurance quotation.

Coverage type – Third Party (value as "1")

Comprehensive ((value as "2")

Formula for insurance comprehensive

NCD = 55%, 1.8% x market price

NCD = 35%, 2.4% x market price

NCD = 25%, 3.0% x market price

NCD = 10%, 3.8% x market price

Formula for third party

NCD = 55%, 1.2% x market price

NCD = 35%, 1.8% x market price

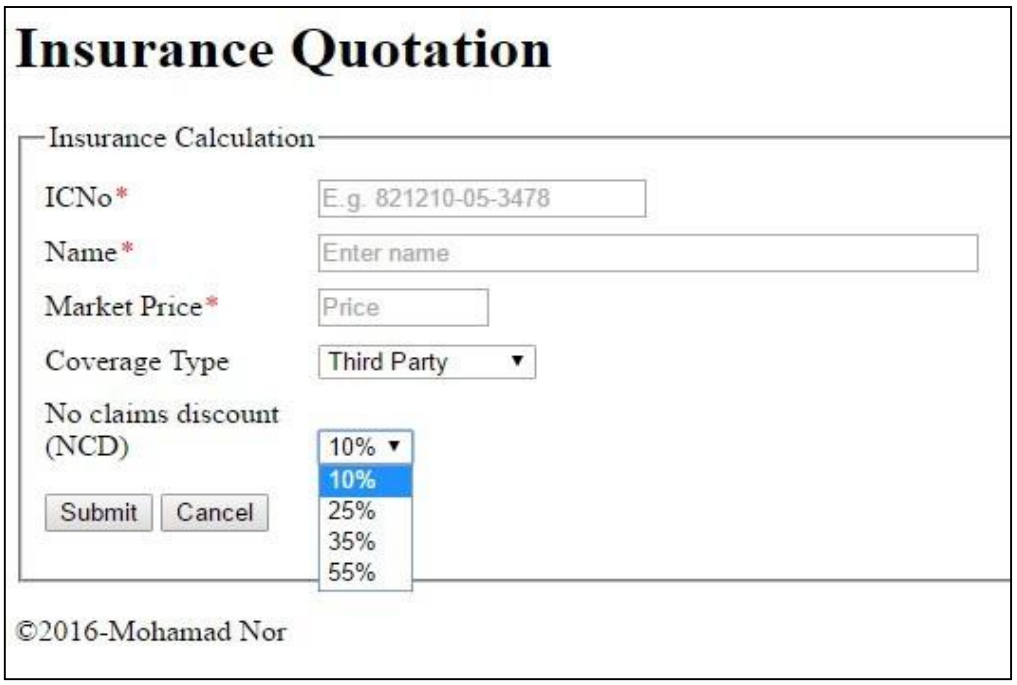
NCD = 25%, 2.5% x market price

NCD = 10%, 3.3% x marketprice

Estimated time : 50 minutes

1. Go to project *Lab3*.
2. Create a new JSP's file as *insuranceQuotation*.

3. Prepare the following Graphical User Interface (GUI).



4. You need to ensure all front-end validation take place.

5. Creating another JSP's file known as *processInsuranceQuo.jsp*.

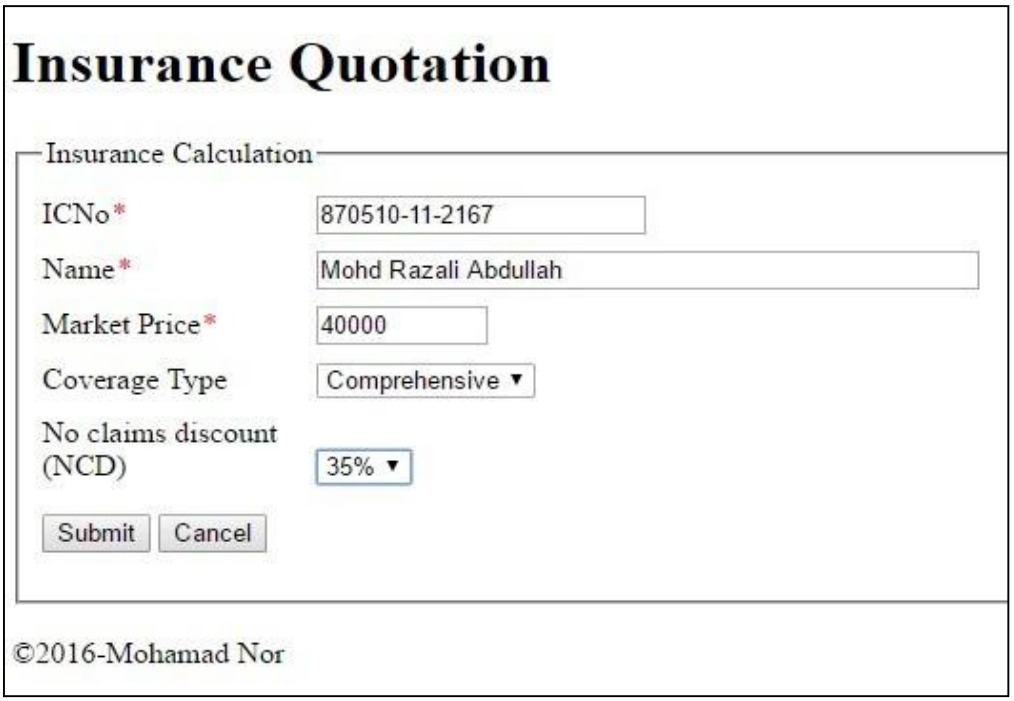
6. Use Java Scriplet to perform the business logic for the application in page *processInsuranceQuo.jsp*.

7. Final insurance amount must be added with 6% GST.

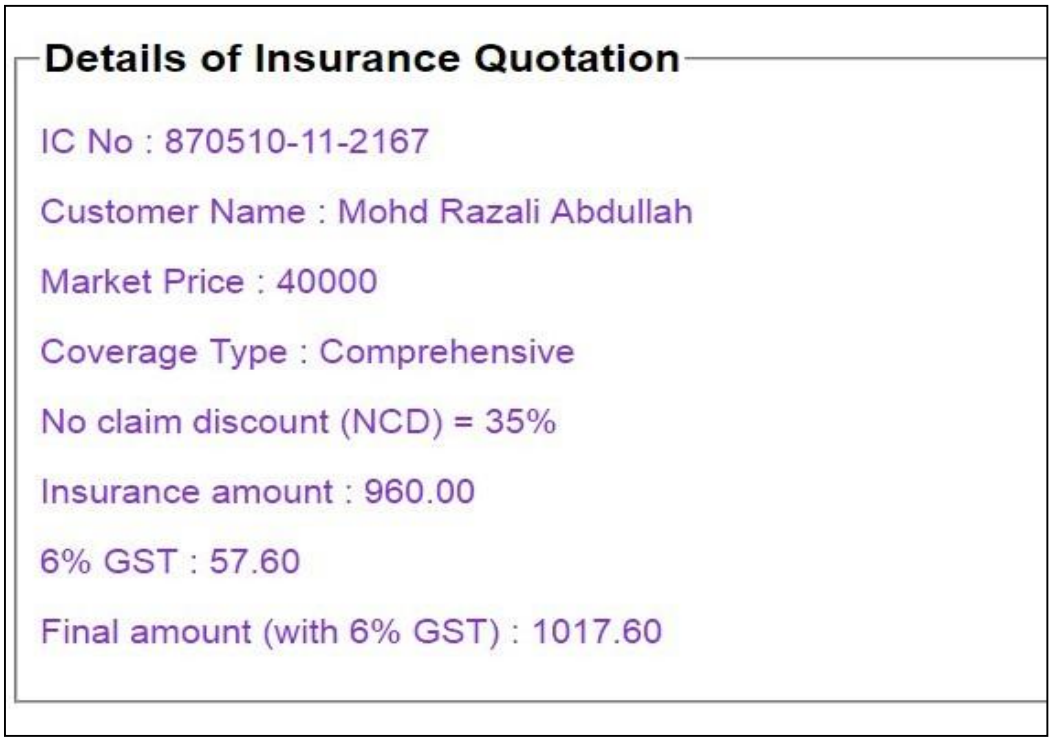
8. Save your file.

9. Right click *insuranceQuotation.jsp* and compile the program.

10. Test your application by key-in the following information.



11. You should get the following output.



Reflection

1. What you have learnt from this exercise?

   how to use Java Scriplet to perform business logic.

2. List all Java features you used in Java Scriptlet.

In the Java Server Pages (JSP) scriptlet, the following Java features are used:

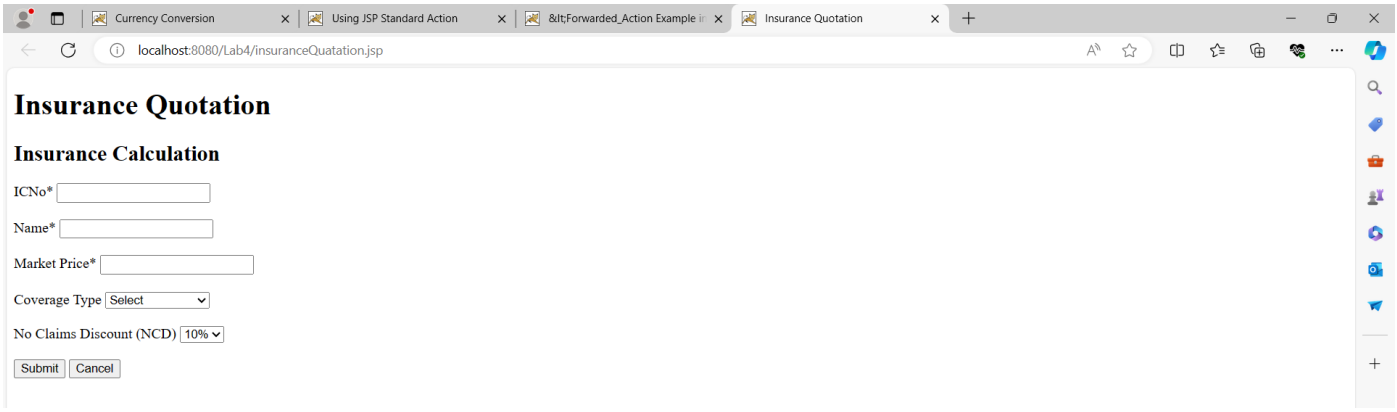
1. Declaration: `<%! ... %>` for variables and methods.
2. Conditional Statements: `if-else`.
3. Variable Declaration & Assignment.
4. Method Declaration & Invocation.
5. Request Handling: `request.getParameter()`.
6. Type Casting: `Integer.parseInt()`.
7. Arithmetic Operations: Multiplication.
8. Constants: Defined using `final`.

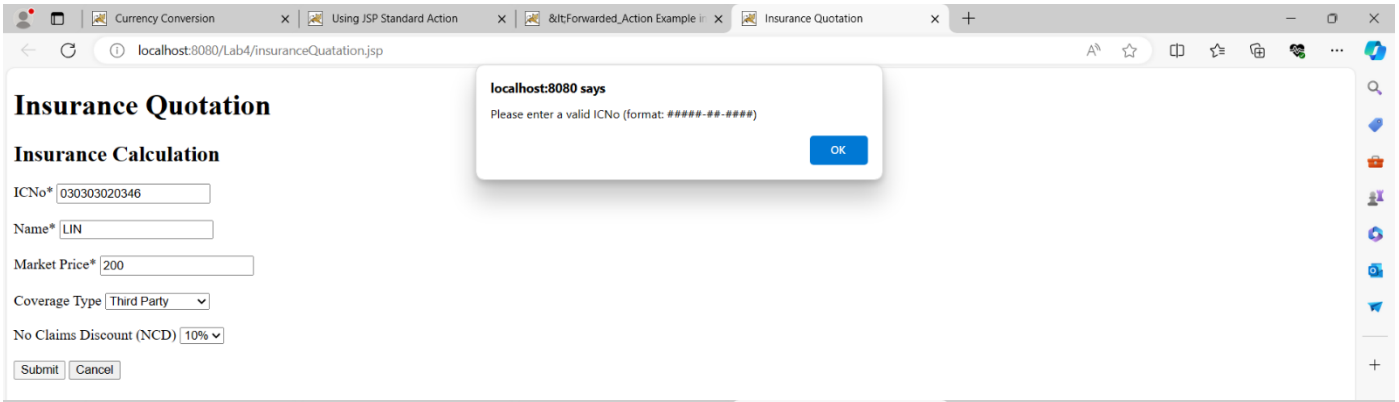
THE CODE:

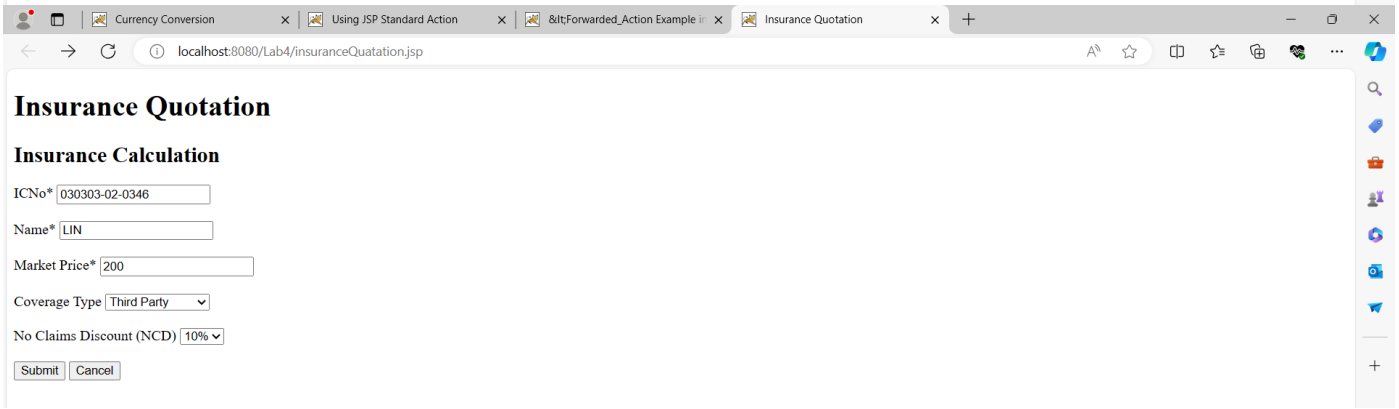
```
<%--
    Document   : insuranceQuotation
    Created on : 24 April 2024, 10:44:42 am
    Author     : LINDA
--%>

<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
    <meta charset="UTF-8">
    <title>Insurance Quotation</title>
    <script>
        function validateForm() {
            var icNo = document.getElementById("icNo").value;
            var name = document.getElementById("name").value;
            var marketPrice = document.getElementById("marketPrice").value;
            var coverageType = document.getElementById("coverageType").value;
            var ncd = document.getElementById("ncd").value;

            if (icNo === "" || !icNo.match(/^\d{6}-\d{2}-\d{4}$/)) {
                alert("Please enter a valid ICNo (format: #####-##-####)");
                return false;
            }

            if (name === "" || !/^[a-zA-Z ]+$/.test(name)) {
                alert("Please enter a valid name (alphabets and spaces only)");
                return false;
            }

            if (marketPrice === "" || isNaN(marketPrice) || parseFloat(marketPrice) <= 0) {
                alert("Please enter a valid market price (numeric and greater than 0)");
                return false;
            }
```

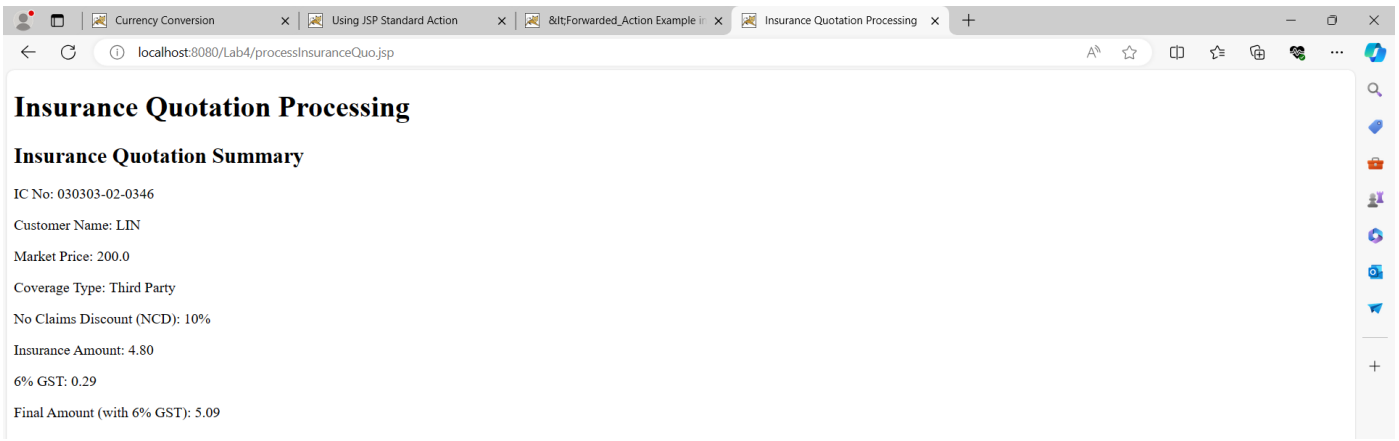
```
            if (coverageType === "") {
                alert("Please select a coverage type");
                return false;
            }

            if (ncd === "") {
                alert("Please select a No Claims Discount (NCD)");
                return false;
            }

            return true;
        }
    </script>
</head>
<body>
    <h1>Insurance Quotation</h1>

    <h2>Insurance Calculation</h2>
    <form action="processInsuranceQuo.jsp" method="post" onsubmit="return validateForm()">
        <label for="icNo">ICNo*</label>
        <input type="text" id="icNo" name="icNo" required><br><br>

        <label for="name">Name*</label>
        <input type="text" id="name" name="name" required><br><br>

        <label for="marketPrice">Market Price*</label>
        <input type="text" id="marketPrice" name="marketPrice" required><br><br>

        <label for="coverageType">Coverage Type</label>
        <select id="coverageType" name="coverageType">
            <option value="">Select</option>
            <option value="Comprehensive">Comprehensive</option>
            <option value="Third Party">Third Party</option>
        </select><br><br>

        <label for="ncd">No Claims Discount (NCD)</label>
        <select id="ncd" name="ncd">
            <option value="10%">10%</option>
            <option value="20%">20%</option>
            <option value="30%">35%</option>
        </select><br><br>

        <input type="submit" value="Submit">
        <input type="reset" value="Cancel">
    </form>
</body>
</html>
```

THE OUTPUT:




Currency Conversion
Using JSP Standard Action
<Forwarded_Action Example ir
Insurance Quotation
localhost:8080/Lab4/insuranceQuatation.jsp
Insurance Quotation
Insurance Calculation
ICNo* 030303020346
Name* LIN
Market Price* 200
Coverage Type Third Party
No Claims Discount (NCD) 10%
Submit
Cancel
localhost:8080 says
Please enter a valid ICNo (format: #####-##-####)
OK


Currency Conversion
Using JSP Standard Action
<Forwarded_Action Example ir
Insurance Quotation
localhost:8080/Lab4/insuranceQuatation.jsp
Insurance Quotation
Insurance Calculation
ICNo* 030303-02-0346
Name* LIN
Market Price* 200
Coverage Type Third Party
No Claims Discount (NCD) 10%
Submit
Cancel


Currency Conversion
Using JSP Standard Action
<Forwarded_Action Example ir
Insurance Quotation Processing
localhost:8080/Lab4/processInsuranceQuo.jsp
Insurance Quotation Processing
Insurance Quotation Summary
IC No: 030303-02-0346
Customer Name: LIN
Market Price: 200.0
Coverage Type: Third Party
No Claims Discount (NCD): 10%
Insurance Amount: 4.80
6% GST: 0.29
Final Amount (with 6% GST): 5.09

Exercise

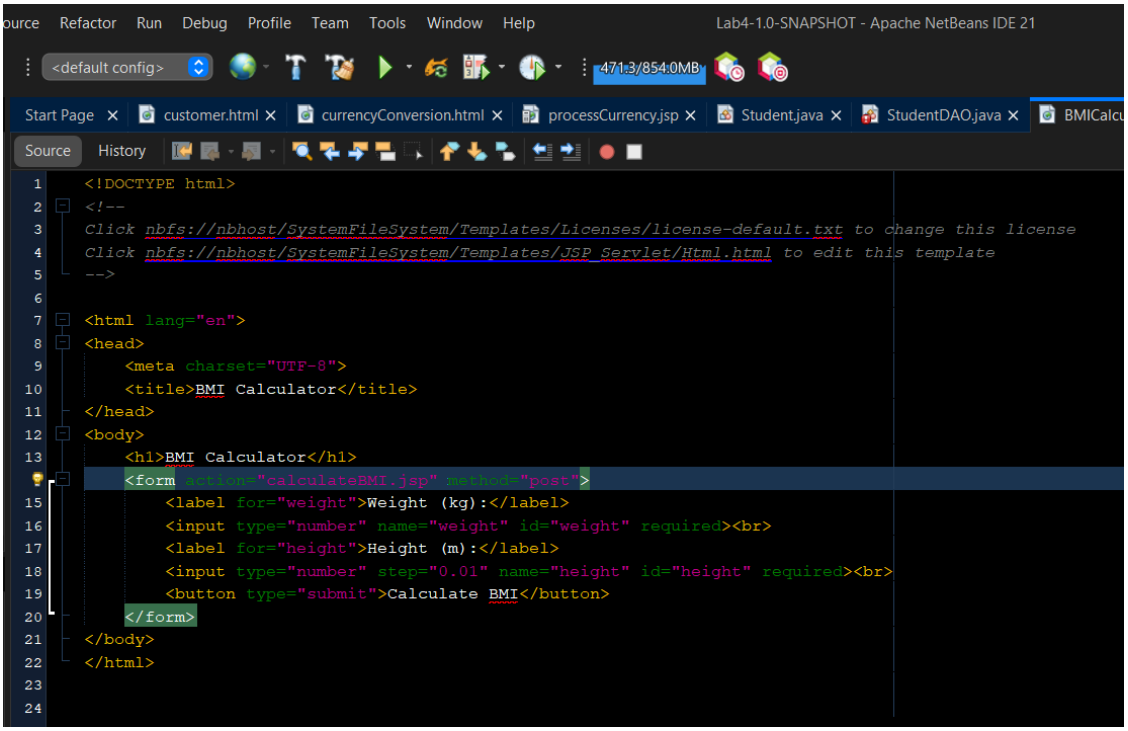
1. Write a simple application to calculate and display a person's body mass index (BMI). The BMI is often used to determine whether a person is overweight or underweight for his or her height. A person's BMI is calculated with the following formula:

$$\textbf{BMI = weight /height}^2$$

where weight is measured in kilogram and height is measured in meter. User should enter his or her weight and height and then display the user's BMI.

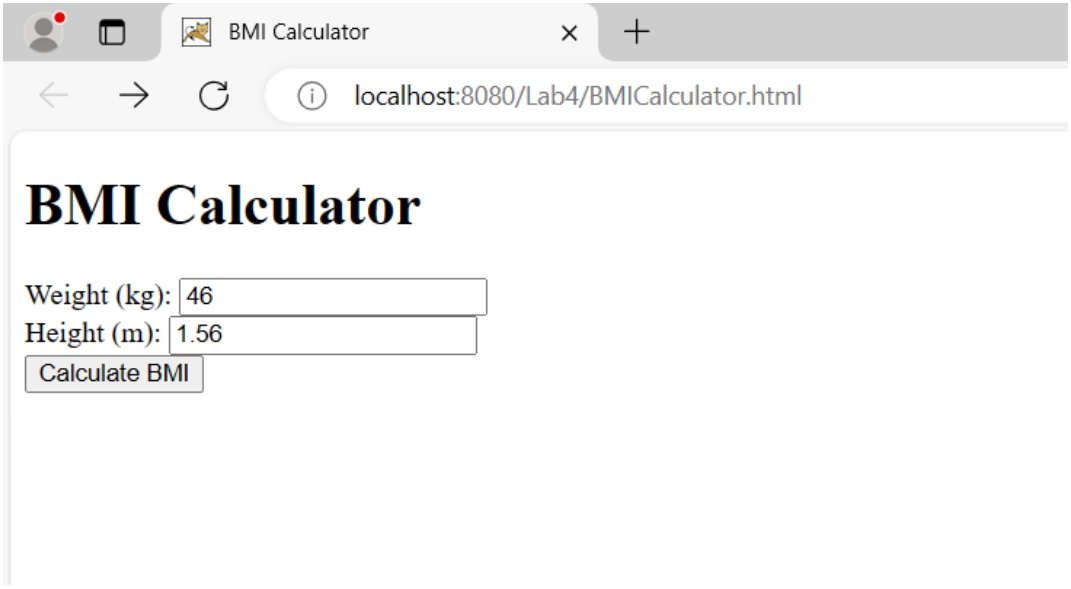
The program should also display a message indicating whether the person has optimal weight, is underweight, or is overweight. A person's weight is considered to be optimal if his or her BMI is between 18.5 and 25. If the BMI is less than 18.5, the person is considered to be underweight. If the BMI value is greater than 25, the person is considered to be overweight.

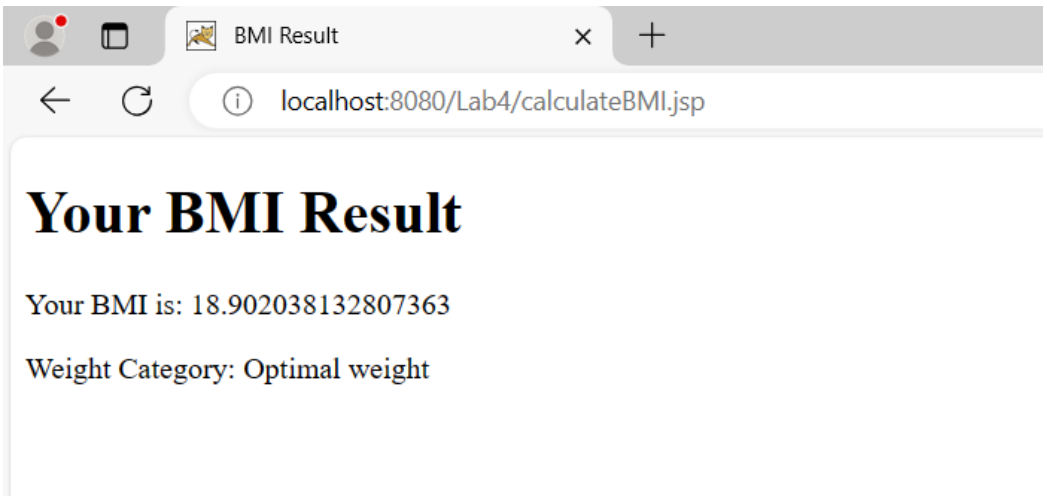
THE CODE:



```jsp
<%--
    Document   : calculateBMI
    Created on : 28 Apr 2024, 10:36:18 pm
    Author     : ASUS
--%>

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


<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>BMI Result</title>
</head>
<body>
    <h1>Your BMI Result</h1>
    <%
        double weight = Double.parseDouble(request.getParameter("weight"));
        double height = Double.parseDouble(request.getParameter("height"));

        double bmi = weight / (height * height);
        String bmiMessage;

        if (bmi < 18.5) {
            bmiMessage = "Underweight";
        } else if (bmi <= 25) {
            bmiMessage = "Optimal weight";
        } else {
            bmiMessage = "Overweight";
        }
    %>
    <p>Your BMI is: <%= bmi %></p>
    <p>Weight Category: <%= bmiMessage %></p>
</body>
</html>
```

THE OUTPUT:


BMI Calculator
localhost:8080/Lab4/BMICalculator.html
BMI Calculator
Weight (kg): 46
Height (m): 1.56
Calculate BMI


BMI Result
localhost:8080/Lab4/calculateBMI.jsp
Your BMI Result
Your BMI is: 18.902038132807363
Weight Category: Optimal weight