UNIVERSITI MALAYSIA TERENGGANU

CSM3023

BACHELOR OF COMPUTER SCIENCE (MOBILE COMPUTING) WITH HONORS

LAB 4

SEMESTER II 2023/2024

Prepared for:

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Week 3

JSP: Scriptlet, Expression & Standard Actions

Web Programming 2

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Semester: II
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Lecturers
PUSAT PENGAJIAN INFORMATIK DAN MATEMATIK GUNAAN
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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
21/02/2019		Addition of Revision History, Table of Contents, Formatting Cover Page	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.

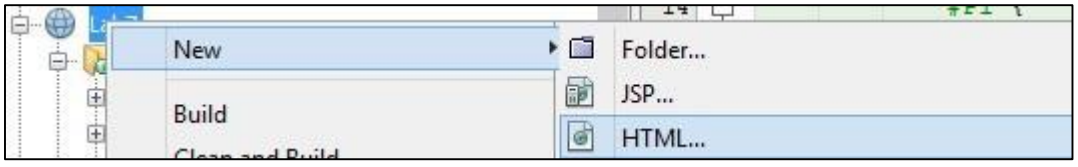
ii. If Customer Type is Privilege Customer (assign value as "2") and Order Quantity > 100, customer entitle 25% discount.

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.

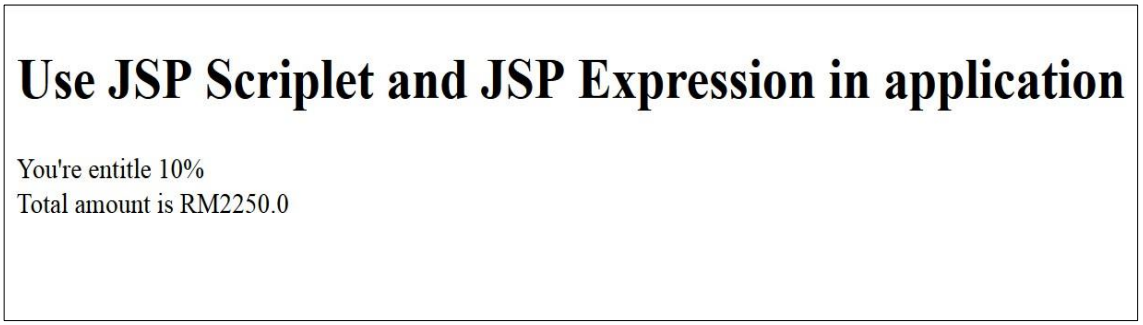
```
<%
    final int price = 10;

    //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?

   - Learn on how to prepare a simple interface to perform the following payment process;

2. Explain three (3) type of JSP scripting?
   -Scriplet tag
   -Expression tag
   -Declaration tag

Code:
Customer.html

```
Click nbfs://nbhost/SystemFileSystem/Templates/JSP_Servlet/Html.html to edit this template
-->
<html>
    <head>
        <title>Using JSP Scripting</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <style>
            h2{
                color: blueviolet;
                font-family: "Lucida Console", "Courier New", monospace;
            }
        </style>
    </head>
    <body>
        <h1>Use JSP Scriplet 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><br>

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

            <label>Customer Type:</label>
            <input type="radio" id="cust_type1" name="cust_type" value="1">
            <label for="cust_type1">Normal Customer</label>

            <input type="radio" id="cust_type2" name="cust_type" value="2">
            <label for="cust_type2">Privilege Customer</label><br><br>

            <input type="submit" value="Submit">
            <button type="button" value="Cancel" onclick="window.location.href='customer.html'">Cancel</button>
        </form>
    </body>
</html>
```

processCustomer.jsp

```jsp
<%--
    Document   : processCustomer
    Created on : May 7, 2024, 10:36:42 PM
    Author     : S67554
--%>

<%@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 Scripting</title>
    </head>
    <body>
        <h1>Use JSP Scriplet and JSP Expression in application</h1>

        <%
            final int price = 10;

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

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

Output:

Use JSP Scriplet and JSP Expression in application

Customer discount

Customer Code: 1234

Quantity: 120

Customer Type: (•) Normal Customer ( ) Privilege Customer

Submit Cancel

Use JSP Scriplet and JSP Expression in application

You're entitle 10%
Total amount is RM1080.0

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.

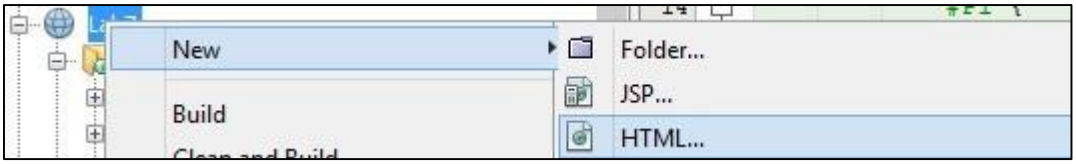
1 USD = RM3.92

1 Pound Sterling = RM5.96

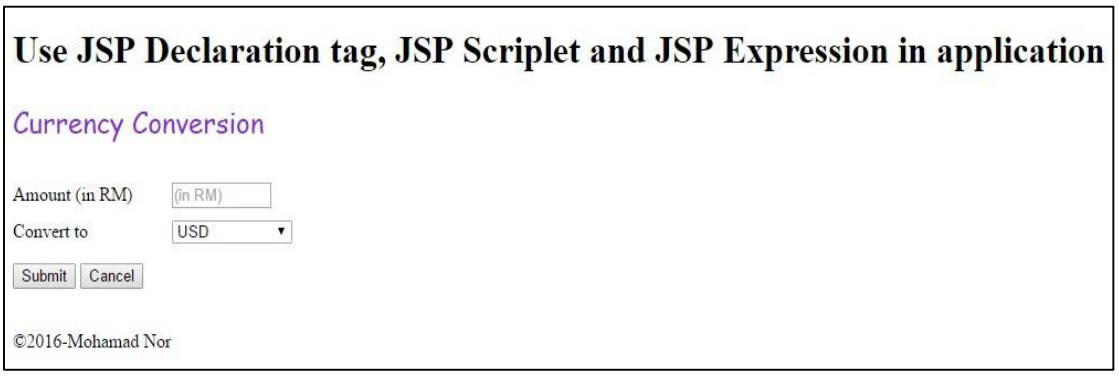
1 Euro = RM4.47;

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.

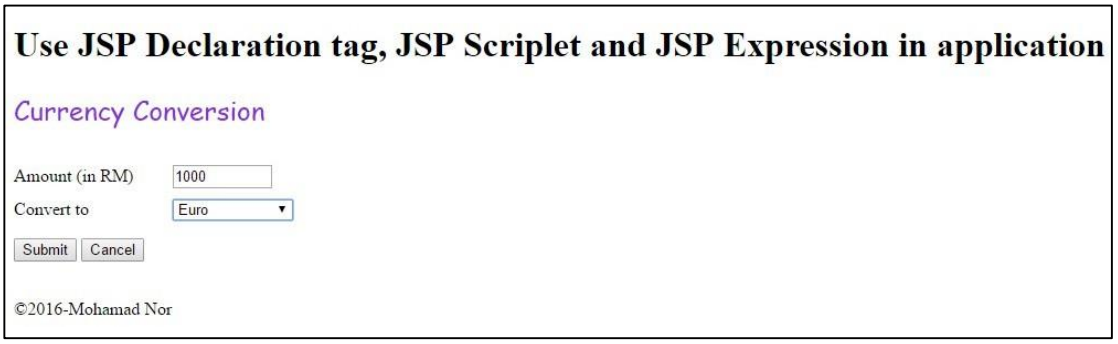
10. Call method *calculateRate(String code, int amount)* to perform currency conversion.

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

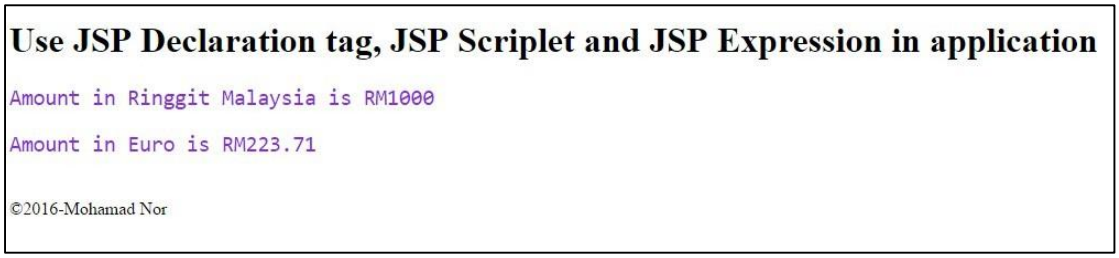
12. Compile *currencyConversion.html* and *processCurrency.jsp* file.

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?

Code:
currencyConversion.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>Using JSP Scripting</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <style>
            h2{
                color: blueviolet;
                font-family: "Lucida Console", "Courier New", monospace;
            }
        </style>
    </head>
    <body>
        <h1>Use JSP Declaration tag, JSP Scriplet and JSP Expression in application</h1>
        <h2>Currency Conversion</h2>
        <form action="processCurrency.jsp" method="post">
            <label for="amount">Amount (in RM):</label>
            <input type="text" id="amount" name="amount" placeholder="(in RM)"><br><br>

            <label for="currency">Convert to</label>
                        <select id="currency" name="currency">
                            <option value="1">USD</option>
                            <option value="2">Pound Sterling</option>
                            <option value="3">Euro</option>
                        </select><br><br>

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

processCurrency.jsp

```
<%--
    Document   : processCurrency
    Created on : Jun 15, 2024, 4:42:00 AM
    Author     : S67554
--%>

<%@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>Use JSP Declaration tag, JSP Scriplet and JSP Expression in application</h1>
        <%!
            //Define constant...
            final double USD = 4.75;
            final double STG = 5.94;
            final double EURO = 5.09;

            //Define method to perform currency exchange..
            private double calculateRate(String currency, int amount){
                double currencyChange=0.00f;
                switch(currency){
                    case "1":
                        currencyChange = (double)(amount * USD);
                        break;
                    case "2":
                        currencyChange = (double)(amount * STG);
                        break;
                    case "3":
                        currencyChange = (double)(amount * EURO);
                        break;
                }
                return currencyChange;
            }
```

```
                switch(currency){
                    case "1":
                        currencyChange = (double)(amount * USD);
                        break;
                    case "2":
                        currencyChange = (double)(amount * STG);
                        break;
                    case "3":
                        currencyChange = (double)(amount * EURO);
                        break;
                }
                return currencyChange;
            }

        %>
        <%
            int amount1 = Integer.parseInt(request.getParameter("amount"));
            String currencyType = request.getParameter("currency");
            double result = calculateRate(currencyType, amount1);
            String currencyName = "";
            switch(currencyType){
                case "1":
                    currencyName = "USD";
                    break;
                case "2":
                    currencyName = "STG";
                    break;
                case "3":
                    currencyName = "EURO";
                    break;
            }
        %>
        <p>Amount in Ringgit Malaysia is <%=amount1%></p>
        <p>Amount in <%=currencyName%> is <%=String.format("%.2f", result)%></p>
    </body>
</html>
```

Output:

Use JSP Declaration tag, JSP Scriplet and JSP Expression in application

Currency Conversion

Amount (in RM): 50

Convert to USD

Submit Cancel

Use JSP Declaration tag, JSP Scriplet and JSP Expression in application

Amount in Ringgit Malaysia is 50

Amount in USD is 237.50

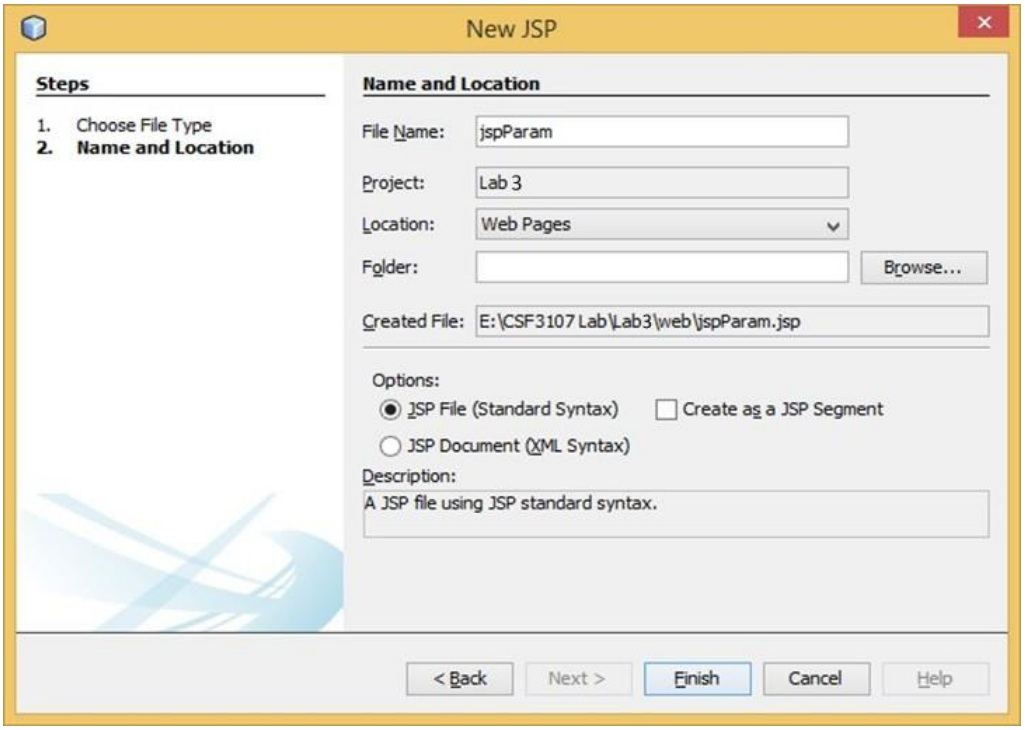
Task 3: Using JSP Standard Action (Include and Param)

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.

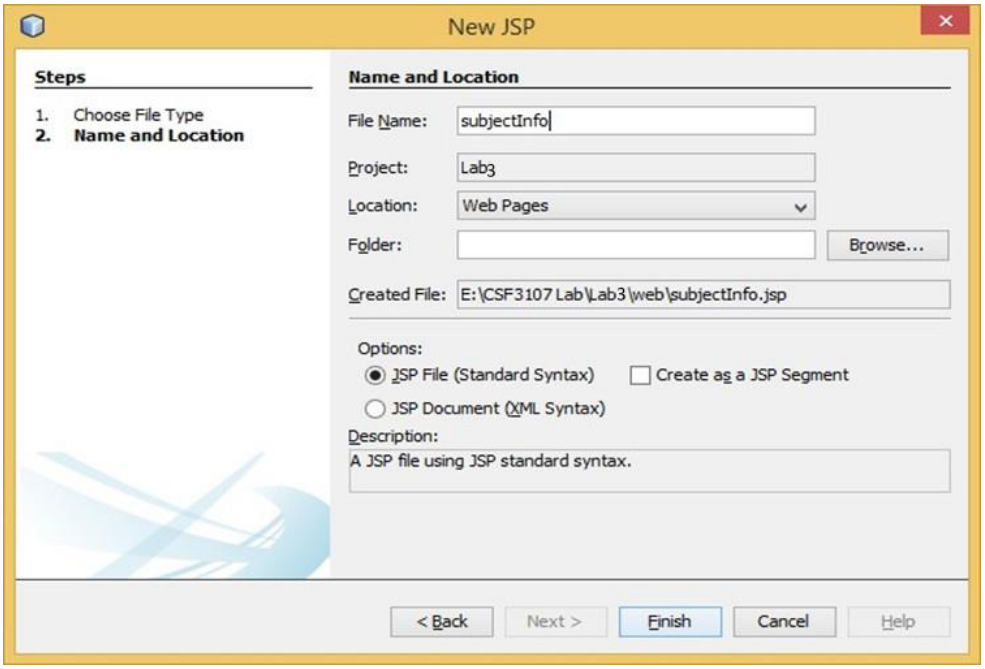
```
    <body>
        <h1>Using jsp:include and jsp:param to display information on JSP page</h1>
        <%
            String sCode = "CSF3107";
            String sSubject = "Web Programming 2";
            String sCredit = "3(2+1)";
        %>
    </body>
```

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?

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

Code:
jspParameter.jsp

```
<%--
    Document   : jspParameter
    Created on : Jun 15, 2024, 4:48:48 AM
    Author     : S67554
--%>

<%@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 = "CSM3023";
            String sSubject = "Web Programming 2";
            String sCredit = "3(2+1)";
        %>
        <!-- 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>
</html>
```

subjectInfo.jsp

```jsp
<%--
    Document   : subjectInfo
    Created on : Jun 15, 2024, 4:49:26 AM
    Author     : S67554
--%>

<%@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>
        <p>Code = <%=request.getParameter("code")%></p>
        <p>Subject = <%=request.getParameter("subject")%></p>
        <p>Credit = <%=request.getParameter("credit")%></p>
    </body>
</html>
```

Output:

Using jsp:include and jsp:param to display information on JSP page

Calling subjectInfo.jsp page

Code = CSM3023

Subject = Web Programming 2

Credit = 3(2+1)

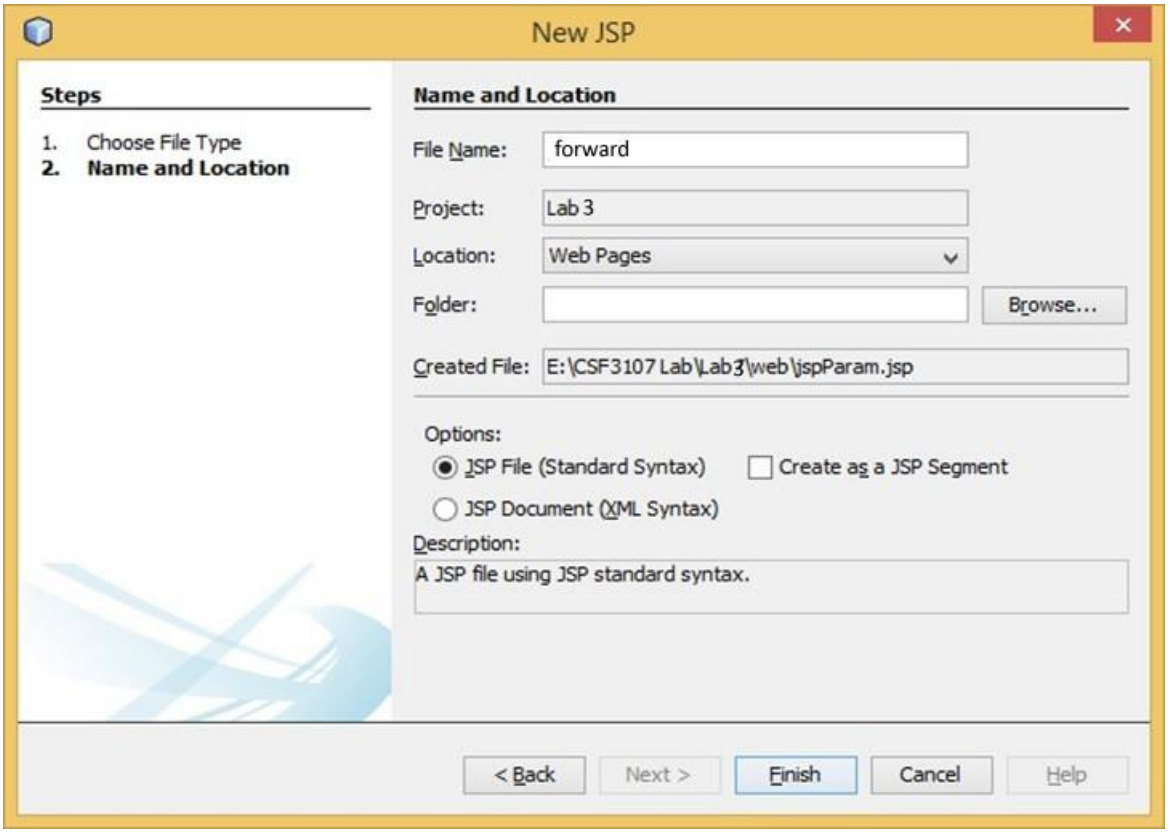
Task 4: Using JSP Standard Action (Forward)

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.

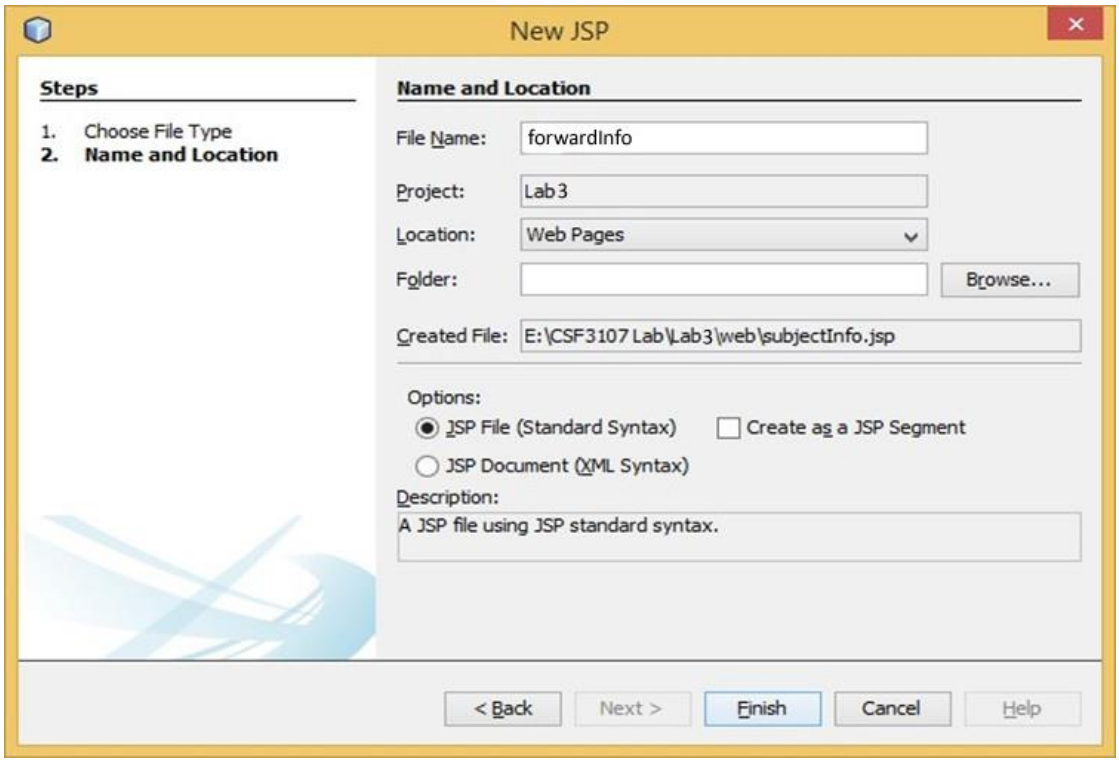
```
<html>

    <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?

   -Learn on how to display user information

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

Code:
Forward.jsp

```
<%--
    Document   : forward
    Created on : Jun 15, 2024, 4:56:35 AM
    Author     : S67554
--%>

<%@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: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>
</html>
```

forwardInfo.jsp

```jsp
<%--
    Document   : forwardInfo
    Created on : Jun 15, 2024, 4:57:25 AM
    Author     : S67554
--%>

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

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

Output:

Fouad Abdulameer
fouadaug@gmail.com
Iraqi
Developer
Today is:Sat Jun 15 05:02:24 MYT 2024

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

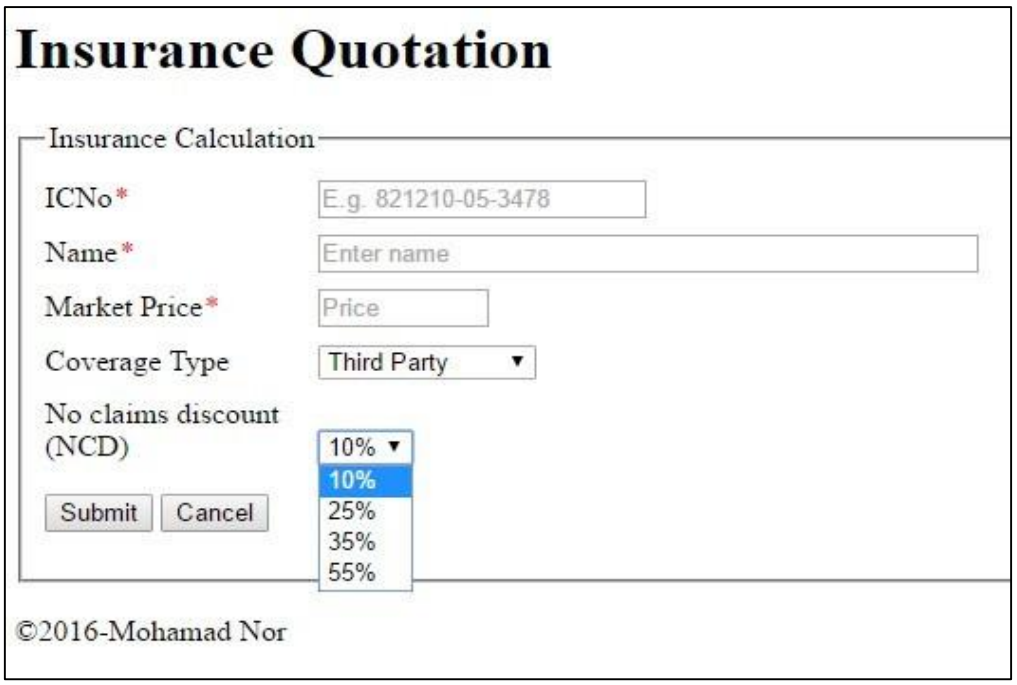
NCD = 25%, 2.5% x market price

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*.

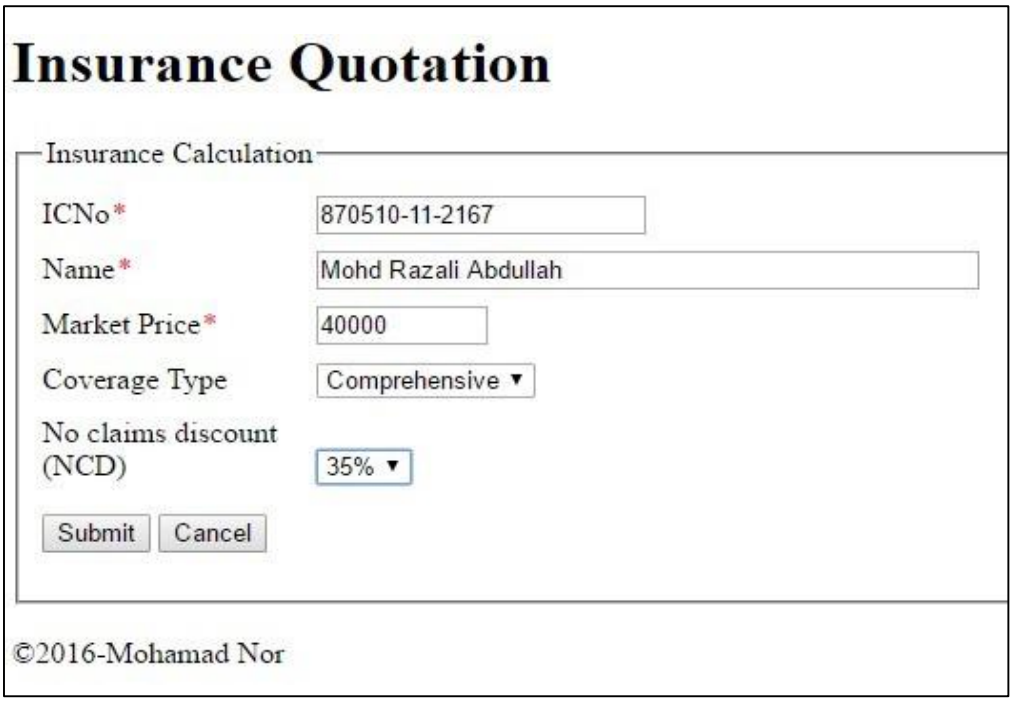
6. Use Java Scriplet to perform the business logic for the application in page *processInsuranceQuo.jsp*.

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

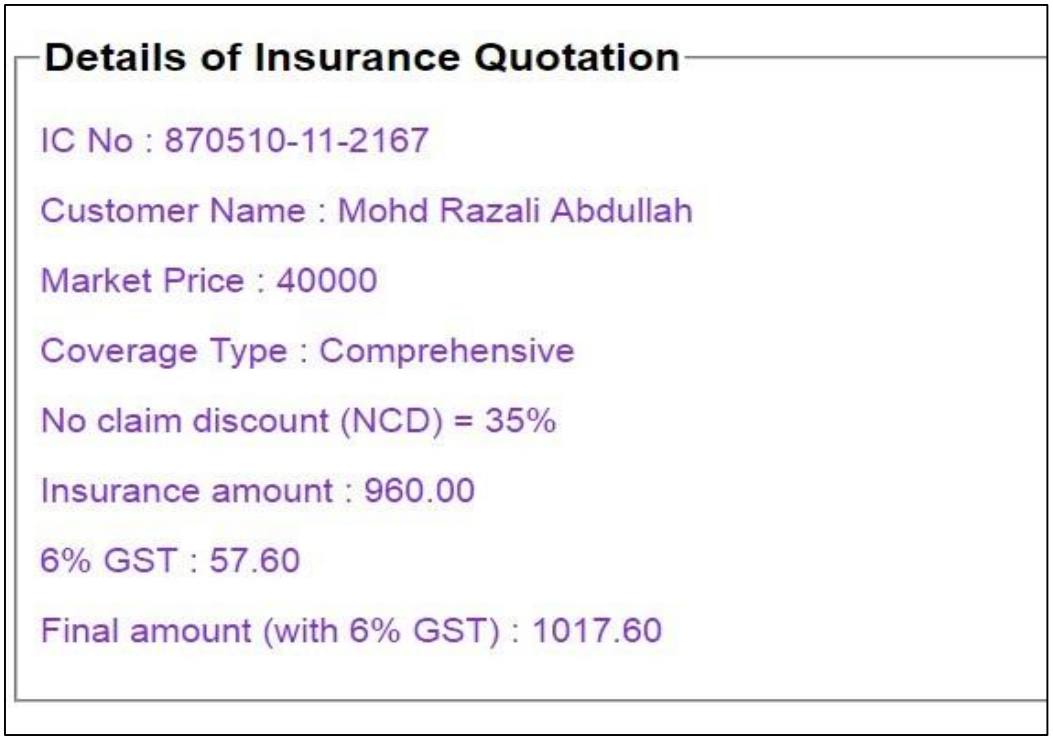
8. Save your file.

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?

   -Learn on how to create a simple web based form to calculate the insurance quotation.

2. List all Java features you used in Java Scriptlet.
   -simple
   -object-oriented
   -platform independent
   -secure langugae
   -robust
   -architecture-neutral
   -interpreted language
   -multithreaded language
   -distributed language
   -dynamic

Code:
insuranceQuotation.jsp

```
<%--
    Document   : insuranceQuotation
    Created on : Jun 15, 2024, 5:05:58 AM
    Author     : S67554
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <title>Using Quotation</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
    </head>
    <body>
        <h1>Insurance Quotation</h1>
        <fieldset>
            <legend>Insurance Calculation</legend>
            <form action="processInsuranceQuo.jsp" method="post">
                <label for="icno">IC No:</label>
                <input type="text" id="icno" name="icno" placeholder="E.g 821210-05-3478"><br><br>

                <label for="name">Name:</label>
                <input type="text" id="name" name="name" placeholder="Enter name"><br><br>

                <label for="market">Market Price:</label>
                <input type="text" id="market" name="market" placeholder="Price"><br><br>

                <label for="type">Coverage Type:</label>
                        <select id="type" name="type">
                            <option value="1">Third Party</option>
                            <option value="2">Comprehensive</option>
                        </select><br><br>
```

```
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
    </head>
    <body>
        <h1>Insurance Quotation</h1>
        <fieldset>
            <legend>Insurance Calculation</legend>
            <form action="processInsuranceQuo.jsp" method="post">
                <label for="icno">IC No:</label>
                <input type="text" id="icno" name="icno" placeholder="E.g 821210-05-3478"><br><br>

                <label for="name">Name:</label>
                <input type="text" id="name" name="name" placeholder="Enter name"><br><br>

                <label for="market">Market Price:</label>
                <input type="text" id="market" name="market" placeholder="Price"><br><br>

                <label for="type">Coverage Type:</label>
                        <select id="type" name="type">
                            <option value="1">Third Party</option>
                            <option value="2">Comprehensive</option>
                        </select><br><br>

                <label for="currency">No claims discount (NCD):</label>
                        <select id="ncd" name="ncd">
                            <option value="10%">10%</option>
                            <option value="25%">25%</option>
                            <option value="35%">35%</option>
                            <option value="55%">55%</option>
                        </select><br><br>

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

processInsuranceQuo.jsp

```
<%--
    Document   : processInsuranceQuo
    Created on : Jun 15, 2024, 5:08:06 AM
    Author     : S67554
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>Using Quotation</title>
    </head>
    <body>
        <%!
            final double gst = 0.06;

            private double calcInsurance(String cover, String NCD, int market){
                double insurance = 0.0;
                if(cover.equals("Comprehensive")){
                    switch(NCD){
                        case "55%":
                            insurance = 0.018 * market;
                            break;
                        case "35%":
                            insurance = 0.024 * market;
                            break;
                        case "25%":
                            insurance = 0.030 * market;
                            break;
                        case "10":
                            insurance = 0.038 * market;
                            break;
                        }
                }else{
                    switch(NCD){
```

```
                    }
                }else{
                    switch(NCD){
                        case "55%":
                            insurance = 0.012 * market;
                            break;
                        case "35%":
                            insurance = 0.018 * market;
                            break;
                        case "25%":
                            insurance = 0.025 * market;
                            break;
                        case "10%":
                            insurance = 0.033 * market;
                            break;
                        }
                }
                return insurance;
            }
        %>
        <%
            String icNo = request.getParameter("icno");
            String custName = request.getParameter("name");
            int market_price = Integer.parseInt(request.getParameter("market"));
            String cover_type = request.getParameter("type");

            String coverage = "";
            switch(cover_type){
                case "1":
                    coverage = "Third Party";
                    break;
                case "2":
                    coverage = "Comprehensive";
                    break;
            }
```

```
            String Ncd = request.getParameter("ncd");
            double ins_amount = calcInsurance(coverage, Ncd, market_price);
            double gst_charge = ins_amount * gst;
            double final_amount = ins_amount + gst_charge;
        %>
        <fieldset>
            <legend>Details of Insurance Quotation</legend>
            <p>IC No: <%=icNo%></p>
            <p>Customer Name: <%=custName%></p>
            <p>Market Price: <%=market_price%></p>
            <p>Coverage Type: <%=coverage%></p>
            <p>No claim discount (NCD) = <%=Ncd%></p>
            <p>Insurance amount: <%=String.format("%.2f", ins_amount)%></p>
            <p>6% GST: <%=String.format("%.2f", gst_charge)%></p>
            <p>Final amount(with 6% GST): <%=String.format("%.2f", final_amount)%></p>
        </fieldset>
    </body>
</html>
```

Output:

Insurance Quotation

Insurance Calculation

IC No: E.g 821210-05-3478

Name: Enter name

Market Price: Price

Coverage Type: Third Party

No claims discount (NCD): 10%

Submit Cancel

Details of Insurance Quotation

IC No: 030405-11-0387

Customer Name: Hazwan

Market Price: 50

Coverage Type: Third Party

No claim discount (NCD) = 10%

Insurance amount: 1.65

6% GST: 0.10

Final amount(with 6% GST): 1.75

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:

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

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.

Code:

bmiCalulator.jsp

```
<%--
    Document   : bmiCalculator
    Created on : Jun 15, 2024, 5:31:32 AM
    Author     : S67554
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <title>BMI Analyzer</title>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
    </head>
    <body>
        <fieldset>
            <legend>BMI Analyzer</legend>
            <form action="processBmiCalculator.jsp" method="post">
                <label for="height">Enter you height in(m):</label>
                <input type="text" id="height" name="height" placeholder="e.g. 1.7"><br><br>

                <label for="weight">Enter your weight in(kg):</label>
                <input type="text" id="weight" name="weight" placeholder="e.g 60"><br><br>

                <button type="submit" value="Submit">Submit</button>
                <button type="reset" value="Reset">Cancel</button>
            </form>
        </fieldset>
    </body>
</html>
```

processBmiCalculator.jsp

```jsp
<%--
    Document   : processBmiCalculator
    Created on : Jun 15, 2024, 5:32:06 AM
    Author     : S67554
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
        <title>BMI Analyzer</title>
    </head>
    <body>
        <%
            double u_height = Double.parseDouble(request.getParameter("height"));
            double u_weight = Double.parseDouble(request.getParameter("weight"));
            double bmi = u_weight / (u_height * u_height);

            String category = "";
            if(bmi > 25){
                category = "overweight";
            }
            else if(bmi > 18.5 && bmi <= 25){
                category = "optimal";
            }
            else{
                category = "underweight";
            }
        %>
        <fieldset>
            <legend>Your BMI result</legend>
            <p>Height: <%=u_height%></p>
            <p>Weight: <%=u_weight%></p>
            <p>BMI: <%=String.format("%.2f", bmi)%></p>
            <p>Your bmi is <%=category%>!</p>
        </fieldset>
```

```jsp
            String category = "";
            if(bmi > 25){
                category = "overweight";
            }
            else if(bmi > 18.5 && bmi <= 25){
                category = "optimal";
            }
            else{
                category = "underweight";
            }
        %>
        <fieldset>
            <legend>Your BMI result</legend>
            <p>Height: <%=u_height%></p>
            <p>Weight: <%=u_weight%></p>
            <p>BMI: <%=String.format("%.2f", bmi)%></p>
            <p>Your bmi is <%=category%>!</p>
        </fieldset>
    </body>
</html>
```

Output:

BMI Analyzer

Enter you height in(m): 178

Enter your weight in(kg): 55

Submit Cancel

Your BMI result

Height: 178.0

Weight: 55.0

BMI: 0.00

Your bmi is underweight!