UNIVERSITI MALAYSIA TERENGGANU

Faculty Of Computer Sciences and Mathematics

Web Based Application Development

CSM3023

Lab Report 4

Prepared for:

Sir Mohd Arizal Shamsil bin Mat Rifin

Prepared by:

Muhammad Imran Bin Abd Hamid (S66803)

Bachelor of Computer Science (Mobile Computing) with Honors.

Sem 2 2023/2024

Task 1: Using JSP Scripting

Code:

```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">
  </head>
  <body>
    <h1>Use JSP Scriplet and JSP Expression in Application</h1>
    <h2 style="color: purple;">Customer Discount</h2>
    <div>
      <form action="processCustomer.jsp" method="POST">
        <div>
          <label>Customer Code</label>:
          <input type="text" name="cust_code" placeholder="Key-in customer code" required>
        </div><br>
        <div>
          <label>Quantity</label>:
          <input type="text" name="quantity" placeholder="Key-in quantity" required>
        </div><br>
        <div>
          <label>Customer type</label>:
          <input type="radio" name="cust_type" value="1" checked> Normal Customer  
          <input type="radio" name="cust_type" value="2"> Privilege Customer
        </div><br>
        <div>
          <button type="submit">Submit</button>
          <button type="reset">Cancel</button>
        </div>
      </form>
    </div><br>
    <footer>&copy; 2024-Muhd Imran</footer>
  </body>
</html>
```

```jsp
<%--
   Document   : processCustomer
   Created on : 24 Apr 2024, 2:49:19 pm
   Author     : MUHAMMAD IMRAN BIN ABD HAMID
--%>

<%@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_code = request.getParameter("cust_code"); // Corrected variable name
      int quantity = Integer.parseInt(request.getParameter("quantity")); // Corrected variable name
      String cust_type1 = request.getParameter("cust_type"); // Corrected variable name

      if (cust_type1.equals("1") && quantity > 100) {
         out.print("You're entitled to a 10% discount.");
         out.print("<br>Total amount is RM " + (quantity * price * 0.9)); // Corrected math and
variable
      } else if (cust_type1.equals("2") && quantity > 100) {
         out.print("You're entitled to a 25% discount.");
         out.print("<br>Total amount is RM " + (quantity * price * 0.75)); // Corrected math and
variable
      } else {
         out.print("You're not entitled to a discount.");
         out.print("<br>Total amount is RM " + (quantity * price)); // Corrected variable
      }
    %>
  </body>
</html>
```
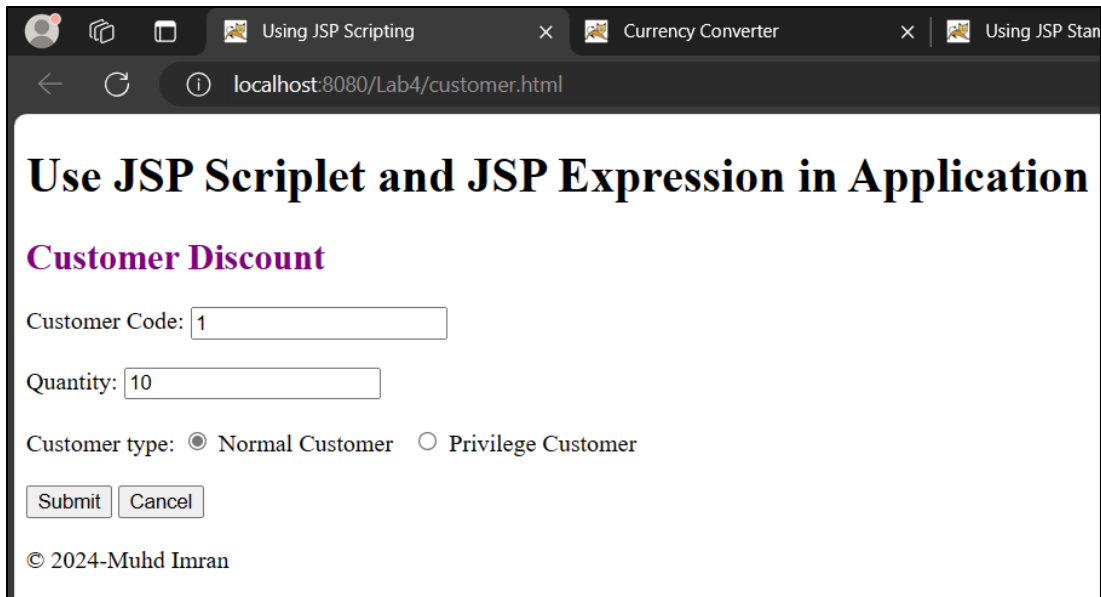
Output:

Use JSP Scriplet and JSP Expression in Application

Customer Discount

Customer Code: 1

Quantity: 10

Customer type: ● Normal Customer   ○ Privilege Customer

Submit Cancel

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Use JSP Scriplet and JSP Expression in Application

You're not entitled to a discount.
Total amount is RM 100

Use JSP Scriplet and JSP Expression in Application

Customer Discount

Customer Code: 1

Quantity: 1000

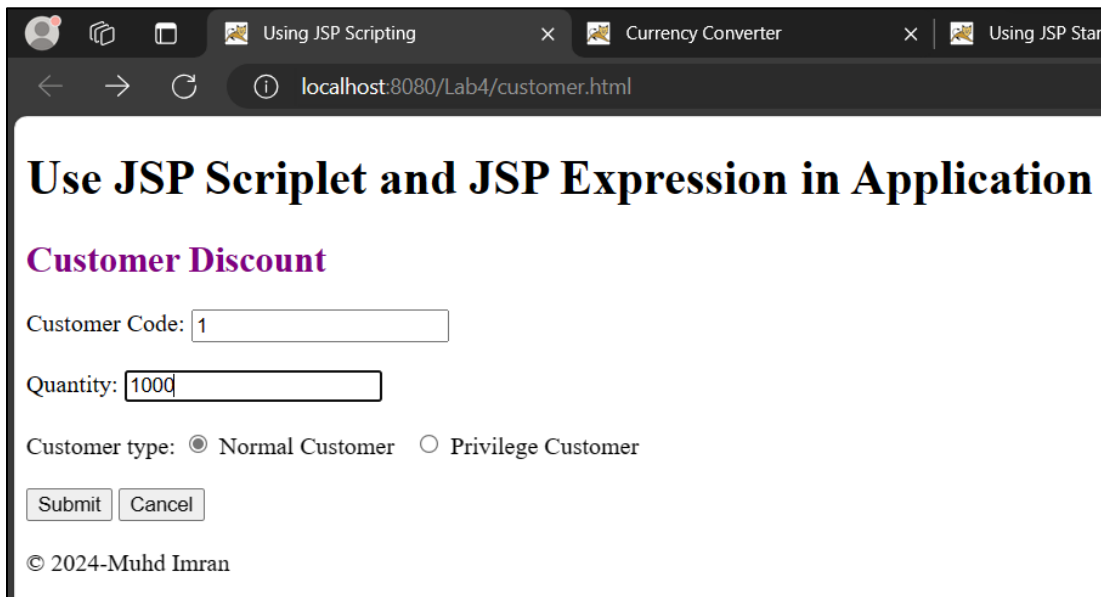Customer type: ● Normal Customer   ○ Privilege Customer

Submit Cancel

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Use JSP Scriplet and JSP Expression in Application

You're entitled to a 10% discount.
Total amount is RM 9000.0

Use JSP Scriplet and JSP Expression in Application

Customer Discount

Customer Code: 1

Quantity: 1000

Customer type: ○ Normal Customer ● Privilege Customer

Submit Cancel

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Use JSP Scriplet and JSP Expression in Application

You're entitled to a 25% discount.
Total amount is RM 7500.0

Reflection:

1. Learn how to use JSP Scriplet and JSP Expression in Application

2. Declaration – Use to define variables, methods, or other class-level constructs that can be reused across multiple requests

Scriplet - Code blocks that contain executable Java code.

Expression - Used to insert the value of a Java variable or method call directly into the output HTML.

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

Code:

```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>Currency Converter</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <h1>Use JSP Declaration tag, JSP Scriplet and JSP Expression in Application</h1>
    <h2 style="color: purple;">Currency Conversion</h2>
    <div>
      <form action="processCurrency.jsp" method="POST">
        <div>
          <label>Amount (RM)</label>:
          <input type="text" name="amount" placeholder="in RM" required>
        </div>
        <div>
          <label>Convert to</label>:
          <select name="currency">
            <option value="1">USD</option>
            <option value="2">STG</option>
            <option value="3">EURO</option>
          </select>
        </div>
        <div>
          <button type="submit">Submit</button>
          <button type="reset">Cancel</button>
        </div>
      </form>
    </div><br>
    <footer>&copy; 2024-Muhd Imran</footer>
  </body>
</html>
```

```jsp
<%--
   Document   : processCurrency
   Created on : 24 Apr 2024, 3:54:43 pm
   Author     : MUHAMMAD IMRAN BIN ABD HAMID
--%>

<%@page import="java.text.DecimalFormat"%>
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
   <head>
      <title>Process Currency - JSP</title>
      <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
   </head>
   <body>
      <h1>Use JSP Declaration tag, JSP Scriplet and JSP Expression in Application</h1>
      <h2>Currency Conversion</h2>
      <div>
         <%
            String currency = request.getParameter("currency");
            int amount = Integer.parseInt(request.getParameter("amount"));
         %>
         <%!
            final double USD = 3.92;
            final double STG = 5.96;
            final double EURO = 4.47;

            private DecimalFormat df = new DecimalFormat("0.00");

            private double calculateRate(String currency, int amount)
            {
               double currencyChange = 0;

               if(currency.contains("1")) {
                  currencyChange = (amount / USD);
               }
               if(currency.contains("2")) {
                  currencyChange = (amount / STG);
               }
               if(currency.contains("3")) {
                  currencyChange = (amount / EURO);
               }
                  return Double.parseDouble(df.format(currencyChange));
            }

            private String currencyName(String currency)
            {
               String currName = "";
```
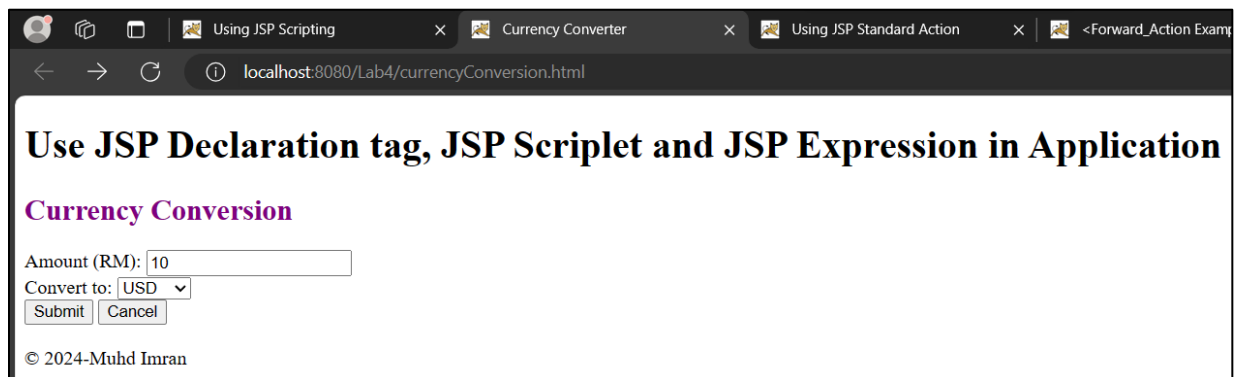
```jsp
                    if(currency.contains("1")) {
                        currName = "Amount in USD is $";
                    }
                    if(currency.contains("2")) {
                        currName = "Amount in Pound STG is &pound;";
                    }
                    if(currency.contains("3")) {
                        currName = "Amount in EURO is &euro;";
                    }
                        return currName;
                }
        %>
        <%
            out.print("Amount in Ringgit Malaysia is RM" + amount + "<br>");
            out.print(currencyName(currency) + calculateRate(currency, amount));
        %>
    </div><br>
    <footer>&copy; 2024-Muhd Imran</footer>
  </body>
</html>
```
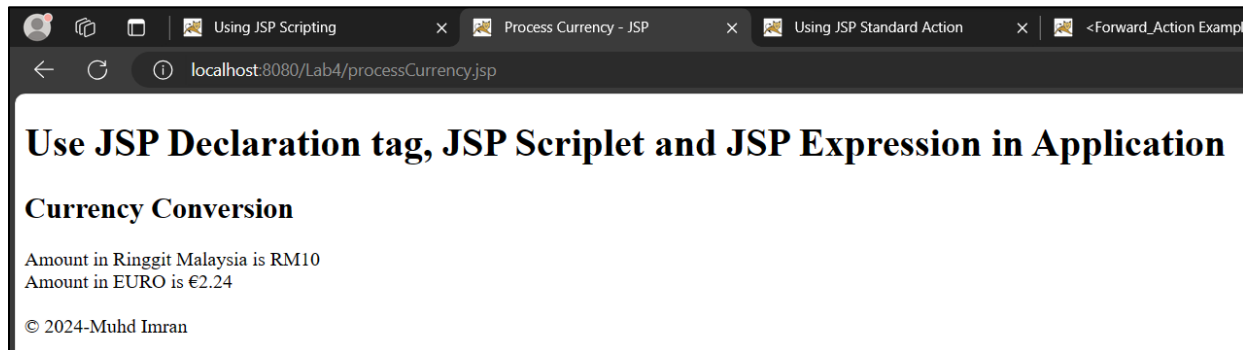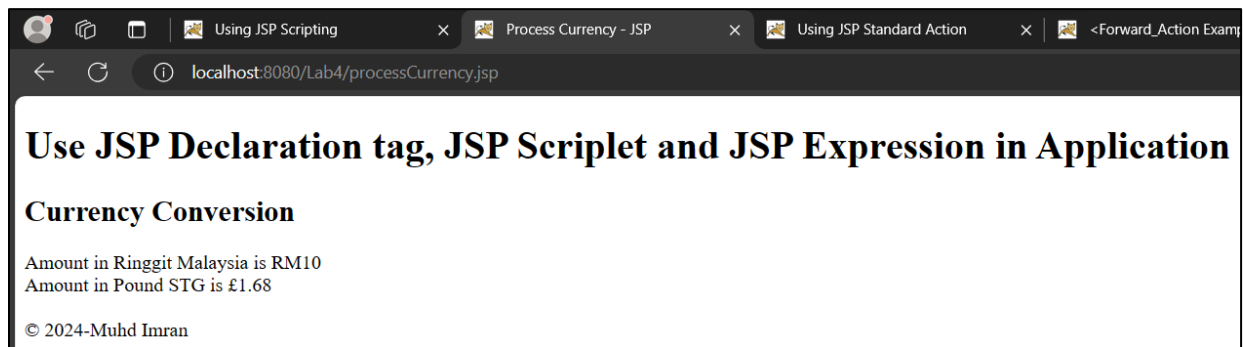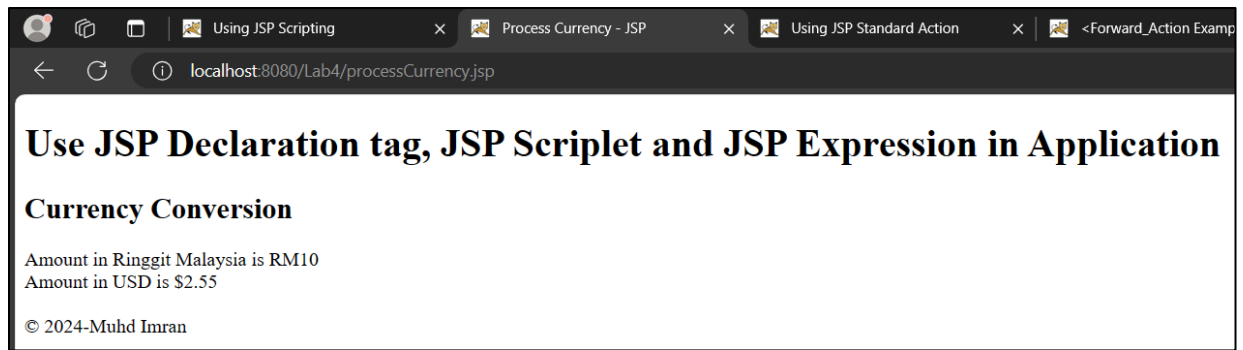
Output:

Reflection:

1. Use JSP Declaration tag, Scriplet and JSP Expression in Application for currency conversion.

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

Code:

```
<%--
   Document   : jspParameter
   Created on : 24 Apr 2024, 4:39:37 pm
   Author     : MUHAMMAD IMRAN BIN ABD HAMID
--%>

<%@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)";
      %>
      <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>
```
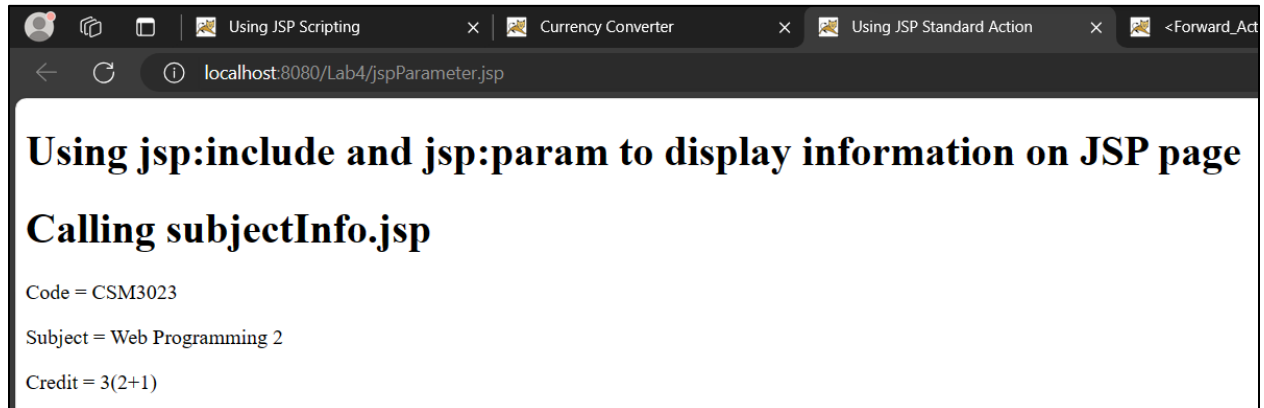
```
<%--
   Document   : subjectInfo
   Created on : 24 Apr 2024, 4:45:50 pm
   Author     : MUHAMMAD IMRAN BIN ABD HAMID
--%>

<%@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>
```

Output:

Reflection:

1. Using JSP Standard Action (Include and Param)

2. <jsp:useBean>

<jsp:setProperty>

Task 4: Using JSP Standard Action (Forward)

Code:

```
<%--
   Document   : forward
   Created on : 26 Apr 2024, 7:24:02 pm
   Author     : MUHAMMAD IMRAN BIN ABD HAMID
--%>

<%@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'S forward to display user info.</h2>
      <jsp:forward page="forwardInfo.jsp">
         <jsp:param name = "U_name" value="Found Abdulameer"/>
         <jsp:param name = "Email" value="founddaug@gmail.com"/>
         <jsp:param name = "Nationality" value="Iraqi"/>
         <jsp:param name = "Background" value="Developer"/>
      </jsp:forward>
   </body>
</html>
```

```
<%--
   Document   : forwardInfo
   Created on : 26 Apr 2024, 7:32:53 pm
   Author     : MUHAMMAD IMRAN BIN ABD HAMID
--%>

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

Output:

Found Abdulameer
founddaug@gmail.com
Iraqi
Developer

Today is:Fri Apr 26 20:11:51 MYT 2024

Reflection:

1. Learn using JSP Standard Action (Forward)

2. <jsp:plugin>

<jsp:element>

Task 5: Use Java Scriptlet To Construct Business Logic

Code:

```jsp
<%--
    Document   : insuranceQuotation
    Created on : 26 Apr 2024, 9:11:23 pm
    Author     : MUHAMMAD IMRAN BIN ABD HAMID
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
    <head>
        <title>Insurance Quotation - JSP</title>
        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    </head>
    <body>
        <h1>Insurance Quotation</h1>
        <div>
            <fieldset>
                <legend>Insurance Calculation</legend>
                <form action="processInsuranceQuo.jsp" method="POST">
                    <div>
                        <label>IC No</label>:
                        <input type="text" name="icno" placeholder="E.g. 821210-05-3478" required>
                    </div>
                    <div>
                        <label>Name</label>:
                        <input type="text" name="name" placeholder="enter name" required>
                    </div>
                    <div>
                        <label>Market price</label>:
                        <input type="number" name="price" placeholder="price" required>
                    </div>
                    <div>
                        <label>Coverage type</label>:
                        <select name="coverageType">
                            <option value="1">Third Party</option>
                            <option value="2">Comprehensive</option>
                        </select>
                    </div>
                    <div>
                        <label>No claims discount (NCD)</label>:
                        <select name="discount">
                            <option value="1">10%</option>
                            <option value="2">25%</option>
                            <option value="3">35%</option>
```

```html
              <option value="4">55%</option>
            </select>
          </div>
          <div>
            <button type="submit">Submit</button>
            <button type="reset">Cancel</button>
          </div>
        </form>
      </fieldset>
    </div>
    <footer>&copy; 2024-Muhd Imran</footer>
  </body>
</html>
```

```jsp
<%--
  Document   : processInsuranceQuo
  Created on : 26 Apr 2024, 9:30:21 pm
  Author     : MUHAMMAD IMRAN BIN ABD HAMID
--%>

<%@page import="java.text.DecimalFormat"%>
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <title>Insurance Quotation - JSP</title>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
  </head>
  <body>
    <%
      String icno = request.getParameter("icno");
      String name = request.getParameter("name");
      int price = Integer.parseInt(request.getParameter("price"));
      String ct = request.getParameter("coverageType");
      String dc = request.getParameter("discount");
      double insurance = 0;
      double gst = 0;
      double total = 0;

      DecimalFormat df = new DecimalFormat("0.00");

      //Third Party
      if(ct.equals("1") && dc.equals("1"))
        insurance = (3.3/100) * price;
      if(ct.equals("1") && dc.equals("2"))
        insurance = (2.5/100) * price;
      if(ct.equals("1") && dc.equals("3"))
```

```
      insurance = (1.8/100) * price;
    if(ct.equals("1") && dc.equals("4"))
      insurance = (1.2/100) * price;

    //Comprehensive
    if(ct.equals("2") && dc.equals("1"))
      insurance = (3.8/100) * price;
    if(ct.equals("2") && dc.equals("2"))
      insurance = (3.0/100) * price;
    if(ct.equals("2") && dc.equals("3"))
      insurance = (2.4/100) * price;
    if(ct.equals("2") && dc.equals("4"))
      insurance = (1.8/100) * price;

    //GST
    gst = 0.06 * insurance;
    //Total
    total = gst + insurance;
%>
<h1>Insurance Quotation</h1>
<div>
  <fieldset>
    <legend>Details of Insurance Quotation</legend>
    <div>
      <label>IC No</label>: <label><%= icno %></label>
    </div>
    <div>
      <label>Customer name</label>: <label><%= name %></label>
    </div>
    <div>
      <label>Market price</label>: <label><%= price %></label>
    </div>
    <div>
      <label>Coverage type</label>: <label><%= ct %></label>
    </div>
    <div>
      <label>No claim discount (NCD)</label>: <label><%= dc %></label>
    </div>
    <div>
      <label>Insurance amount</label>:
      <label><%= df.format(insurance) %></label>
    </div>
    <div>
      <label>6% GST</label>:
      <label><%= df.format(gst) %></label>
    </div>
    <div>
      <label>Final amount (+ 6% GST)</label>:
```

```
                <label><%= df.format(total) %></label>
              </div>
           </fieldset>
         </div>
         <footer>&copy; 2024-Muhd Imran</footer>
    </body>
</html>
```

Output:

Insurance Quotation

┌─Insurance Calculation──────────────────────────┐
│ IC No: 870510-11-2167   │
│ Name: Mohd Razali Abdullah   │
│ Market price: 40000   │
│ Coverage type: Comprehensive ∨   │
│ No claims discount (NCD): 35% ∨   │
│ Submit   Cancel   │
└──┘
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Insurance Quotation

┌─Details of Insurance Quotation─────────────────┐
│ IC No: 870510-11-2167   │
│ Customer name: Mohd Razali Abdullah   │
│ Market price: 40000   │
│ Coverage type: 2   │
│ No claim discount (NCD): 3   │
│ Insurance amount: 960.00   │
│ 6% GST: 57.60   │
│ Final amount (+ 6% GST): 1017.60   │
└──┘
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Reflection:

1. Learn to use Java Scriptlet to Construct Business Logic

2. Java variable, java type conversion, java conditional statement, mathematical operation, java object and libraries, java expression in JSP.

Exercise:

Code:

```jsp
<%--
    Document   : bmi
    Created on : 26 Apr 2024, 10:28:31 pm
    Author     : MUHAMMAD IMRAN BIN ABD HAMID
--%>

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <title>Calculate BMI</title>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
  </head>
  <body>
    <h1>Calculate BMI</h1>
    <div>
      <form action="calculateBMI.jsp" method="POST">
        <div>
          <label>Weight (kg)</label>:
          <input type="text" name="weight" placeholder="Enter weight" required>
        </div>
        <div>
          <label>Height (m)</label>:
          <input type="text" name="height" placeholder="Enter height" required>
        </div>
        <div>
          <button type="submit">Calculate</button>
        </div>
      </form>
    </div>
    <footer>&copy; 2024-Muhd Imran</footer>
  </body>
</html>
```

```jsp
<%@ page import="java.text.DecimalFormat" %>
<%@ page contentType="text/html" pageEncoding="UTF-8" %>
<!DOCTYPE html>
<html>
  <head>
    <title>Calculate BMI</title>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
  </head>
  <body>
    <%
```

```jsp
            double weight = Double.parseDouble(request.getParameter("weight"));
            double height = Double.parseDouble(request.getParameter("height"));
            double bmi = 0.00;
            String msg = "";

            bmi = weight / (height * height);  // Corrected formula

            if (bmi < 18.5) {
               msg = "Underweight";
            } else if (bmi < 25) {
               msg = "Optimal";
            } else {
               msg = "Overweight";
            }

            DecimalFormat df = new DecimalFormat("0.00");
        %>
        <h1>Result</h1>
        <div>
           Your BMI is <%= df.format(bmi) %>. You are <%= msg %>.
        </div>
        <% request.getRequestDispatcher("bmi.jsp").include(request, response); %> <!-- Optional, if
needed -->
   </body>
</html>
```

Output: