

Week 3

# JSP: Scriptlet, Expression & Standard Actions

Web Programming 2

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PUSAT PENGAJIAN INFORMATIK DAN MATEMATIK GUNAAN  
(PPIMG), UNIVERSITI MALAYSIA TERENGGANU (UMT)

## 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.

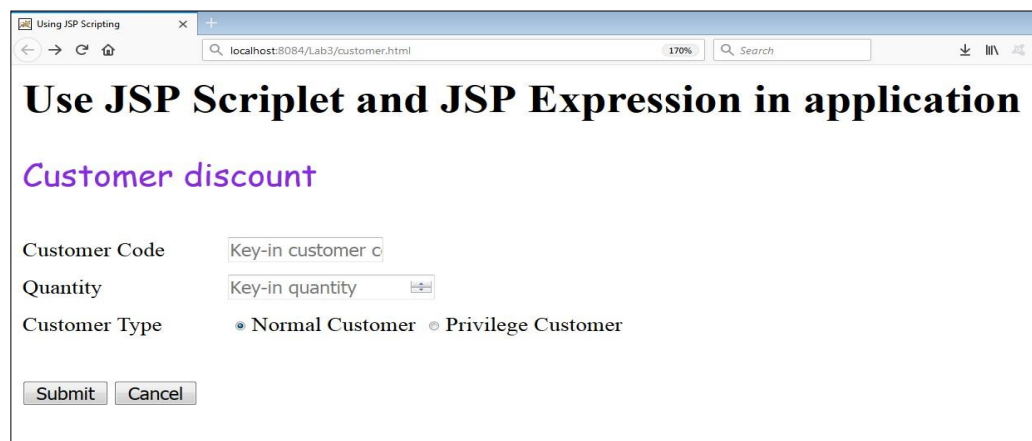
**Estimated time** : 40 minutes

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).



Using JSP Scripting

localhost:8084/Lab3/customer.html

## Use JSP Scriptlet and JSP Expression in application

### Customer discount

Customer Code

Quantity

Customer Type ☒ Normal Customer ☐ Privilege Customer

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.

## **Use JSP Scriptlet and JSP Expression in application**

You're entitle 10%  
Total amount is RM2250.0

### **Reflection**

1. What you have learnt from this exercise?  
= How to use JSP Scriptlet and JSP Expression in application.
  
2. Explain three (3) type of JSP scripting?  
= Expression, scriptlets and declarations.

## customer.html

```
1  <!DOCTYPE html>
2  <!--
3  Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
4  Click nbfs://nbhost/SystemFileSystem/Templates/JSP\_Servlet/Html.html to edit this template
5  -->
6  <html>
7  <head>
8      <title>Use JSP Scriplet and JSP Expression in application</title>
9      <meta charset="UTF-8">
10     <meta name="viewport" content="width=device-width, initial-scale=1.0">
11 </head>
12 <body>
13     <h1>Use JSP Scriplet and JSP Expression in application</h1>
14     <h2 style="color:purple;">Customer discount</h2>
15
16     <form action="processCustomer.jsp" method="post">
17         <label for="customer-code">Customer Code:</label>
18         <input type="text" id="customer-code" name="cust_no" placeholder="Key-in customer"><br>
19
20         <label for="quantity">Quantity:</label>
21         <input type="number" id="quantity" name="quantity" placeholder="Key-in quantity"><br>
22
23         <label for="cust_type">Customer Type:</label>
24         <input type="radio" id="normal-customer" name="cust_type" value="1">
25         <label for="normal-customer">Normal Customer</label>
26         <input type="radio" id="privilege-customer" name="cust_type" value="2">
27         <label for="privilege-customer">Privilege Customer</label><br><br>
28
29         <input type="submit" value="Submit">
30         <button type="button" onclick="cancelForm()">Cancel</button>
31     </form>
32
33     <script>
34         function cancelForm() {
35             document.getElementById("customer-code").value = "";
36             document.getElementById("quantity").value = "";
37             document.querySelector('input[name="cust_type"]:checked').checked = false;
38         }
39     </script>
40 </body>
41 </html>
42
```



## processCustomer.jsp

```
Source History
7 <%@page contentType="text/html" pageEncoding="UTF-8"%>
8 <%@page import="java.io.*, java.util.*"%>
9 <%@page import="javax.servlet.http.*, javax.servlet.*"%>
10 <title>Process Customer</title>
11
12 <h1>Use JSP Sripket and JSP Expression in application</h1>
13
14 <%
15     final int price = 10;
16
17     String cust_no1 = request.getParameter("cust_no");
18     int quantity1 = Integer.parseInt(request.getParameter("quantity"));
19     String cust_type1 = request.getParameter("cust_type");
20
21     if (cust_type1 != null && !cust_type1.isEmpty()) {
22         if (cust_type1.equals("1") && quantity1 > 100) {
23             %>
24                 You're entitled to a 10% discount. <br>
25                 Total amount is RM<%= quantity1 * price * 0.9 %>
26             <%
27         } else if (cust_type1.equals("2") && quantity1 > 100) {
28             %>
29                 You're entitled to a 25% discount. <br>
30                 Total amount is RM<%= quantity1 * price * 0.75 %>
31             <%
32         } else {
33             %>
34                 You're not entitled to a discount. <br>
35                 Total amount is RM<%= quantity1 * price %>
36             <%
37         }
38     }
39 }
```

---

## Use JSP Scriptlet and JSP Expression in application

### Customer discount

Customer Code:

Quantity:

Customer Type: ☐ Normal Customer ☐ Privilege Customer

---

## Use JSP Sriptlet 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).

**Use JSP Declaration tag, JSP Scriptlet and JSP Expression in application**  
*Currency Conversion*  
Amount (in RM)   
Convert to   
   
©2016-Mohamad Nor

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.

```
17 <%!  
18 //Added by : 10 April 2016 - Mohamad Nor  
19 //Define constant....  
20 final double USD = 3.92;  
21 final double STG = 5.96;  
22 final double EURO = 4.47;  
23  
24 //Define method to perform currency exchange....  
25 private double calculateRate(String currency, int amount)  
26 {  
27     double currencyChange=0.00f;  
28  
29     if ( currency.equals("1") )  
30         currencyChange = (double) ( amount * USD);  
31     if ( currency.equals("2") )  
32         currencyChange = (double) ( amount * STG);  
33     if ( currency.equals("3") )  
34         currencyChange = (double) ( amount * EURO);  
35  
36     return currencyChange; //return the result....  
37 }  
38 %>
```

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

**Use JSP Declaration tag, JSP Scriptlet and JSP Expression in application**  
*Currency Conversion*  
Amount (in RM)   
Convert to   
   
©2016-Mohamad Nor

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

**Use JSP Declaration tag, JSP Scriptlet and JSP Expression in application**  
*Amount in Ringgit Malaysia is RM1000*  
*Amount in Euro is RM223.71*  
©2016-Mohamad Nor

## Reflection

1. What have you learn from this exercise?

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

## currencyConversion.html

```
1  <!DOCTYPE html>
2  <!--
3  Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
4  Click nbfs://nbhost/SystemFileSystem/Templates/JSP\_Servlet/Html.html to edit this template
5  -->
6  <html>
7  <head>
8      <title>Currency Conversion</title>
9  </head>
10 <body>
11     <h1>Use JSP Declaration tag, JSP Scriptlet and JSP Expression in application</h1>
12
13     <h3 style="color: purple">Currency Conversion</h3>
14     <form action="processCurrency.jsp" method="post">
15         <label for="amount">Amount (in RM):</label>
16         <input type="text" id="amount" name="amount" placeholder="in RM" required><br><br>
17
18         <label for="currency">Convert to:</label>
19         <select id="currency" name="currency" required>
20             <option value="1">USD</option>
21             <option value="2">Pound Sterling</option>
22             <option value="3">Euro</option>
23         </select><br><br>
24
25         <input type="submit" value="Convert">
26         <input type="button" value="Cancel" onclick="window.location.href='cancel.jsp'">
27     </form>
28 </body>
29 </html>
30
```

## processCurrency.jsp

```
Source History
7 <%@page contentType="text/html" pageEncoding="UTF-8"%>
8 <!DOCTYPE html>
9 <html>
10 <head>
11 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
12 <title>Currency Conversion</title>
13 </head>
14 <body>
15 <h1>Currency Conversion</h1>
16
17 <%!
18 // Define constant exchange rates
19 final double USD = 3.92;
20 final double STG = 5.96;
21 final double EURO = 4.47;
22
23 // Define method to perform currency exchange
24 private double calculateRate(String currency, int amount) {
25     double currencyChange = 0.00;
26
27     if (currency.equals("1")) {
28         currencyChange = amount * USD;
29     } else if (currency.equals("2")) {
30         currencyChange = amount * STG;
31     } else if (currency.equals("3")) {
32         currencyChange = amount * EURO;
33     }
34
35     return currencyChange;
36 }
37 %>
```

```
39 <%
40 // Get parameters from the request
41 String currency = request.getParameter("currency");
42 int amount = Integer.parseInt(request.getParameter("amount"));
43
44 // Calculate currency conversion
45 double currencyChange = calculateRate(currency, amount);
46 %>
47
48 <p>Amount in Ringgit Malaysia: <%= amount %></p>
49 <p>Amount in Euro: <%= currencyChange %></p>
50 </body>
51 </html>
52
```

# Use JSP Declaration tag, JSP Scriptlet and JSP Expression in application

## Currency Conversion

Amount (in RM):

Convert to:

## Currency Conversion

Amount in Ringgit Malaysia: 1000

Amount in Euro: 4470.0



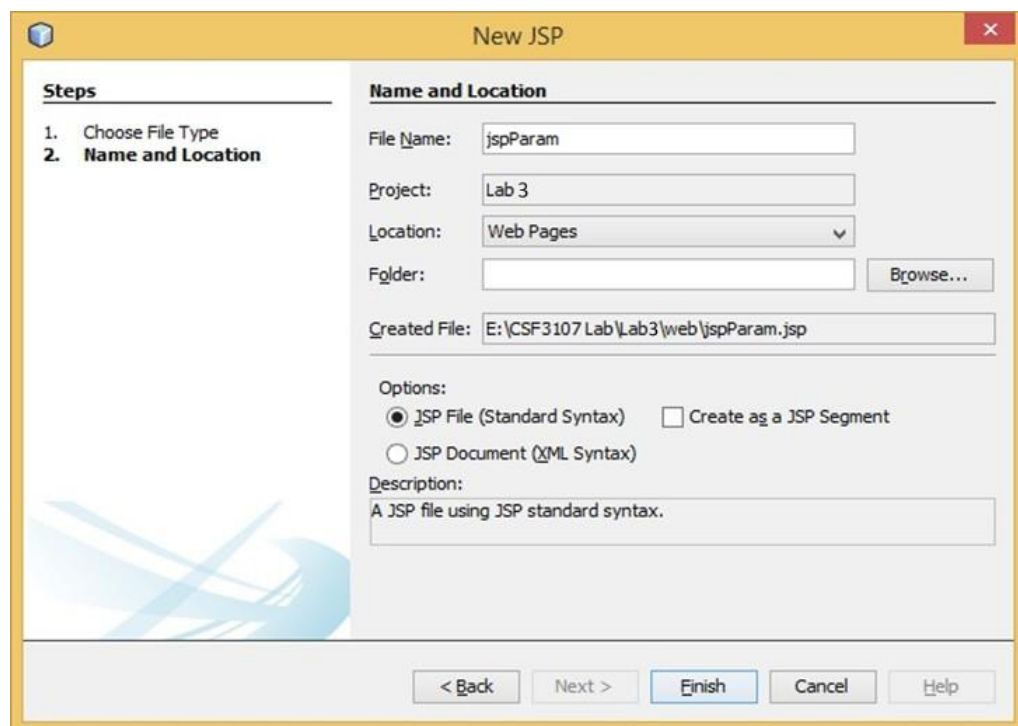
## Task 3: Using JSP Standard Action (Include and Param)

**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.

```
1 <%--
2     Document    : jspParam
3     Created on  : 11-Apr-2016, 14:06:19
4     Author     : Mohamad Nor Hasssan
5 --%>
6
7 <%@page contentType="text/html" pageEncoding="UTF-8"%>
8 <!DOCTYPE html>
9 <html>
10 <head>
11     <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
12     <title>Using JSP Standard Action </title>
13 </head>
14 <body>
15     <h1>Using jsp:include and jsp:param to display information on JSP page</h1>
16 </body>
17 </html>
```

4. Add Java scriptlet.

```
14 <body>
15     <h1>Using jsp:include and jsp:param to display information on JSP page</h1>
16 <%
17     String sCode = "CSF3107";
18     String sSubject = "Web Programming 2";
19     String sCredit = "3 (2+1)";
20 %>
21 </body>
```

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

```
21
22 <!-- Call subjectInfo.jsp page & passing course information
23      to respective parameters...-->
24 <jsp:include page="subjectInfo.jsp" flush="true">
25     <jsp:param name="code" value="<%=sCode%>"/>
26     <jsp:param name="subject" value="<%=sSubject%>"/>
27     <jsp:param name="credit" value="<%=sCredit%>"/>
28 </jsp:include>
29 </body>
```

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

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

8. Write the following HTML's syntax.

```

1  <%--
2      Document    : subjectInfo
3      Created on  : 11-Apr-2016, 14:45:36
4      Author     : Mohamad Nor
5  --%>
6
7  <%@page contentType="text/html" pageEncoding="UTF-8"%>
8  <!DOCTYPE html>
9  <html>
10     <head>
11         <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
12         <title>Using JSP Standard Action</title>
13     </head>
14     <body>
15         <h1>Calling subjectInfo.jsp page</h1>
16     </body>
17 </html>

```

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

```

14     <body>
15         <h1>Calling subjectInfo.jsp page</h1>
16         <p>Code = <%=request.getParameter("code")%></p>
17         <p>Subject = <%=request.getParameter("subject")%></p>
18         <p>Credit = <%=request.getParameter("credit")%></p>
19     </body>

```

11. Save all files.

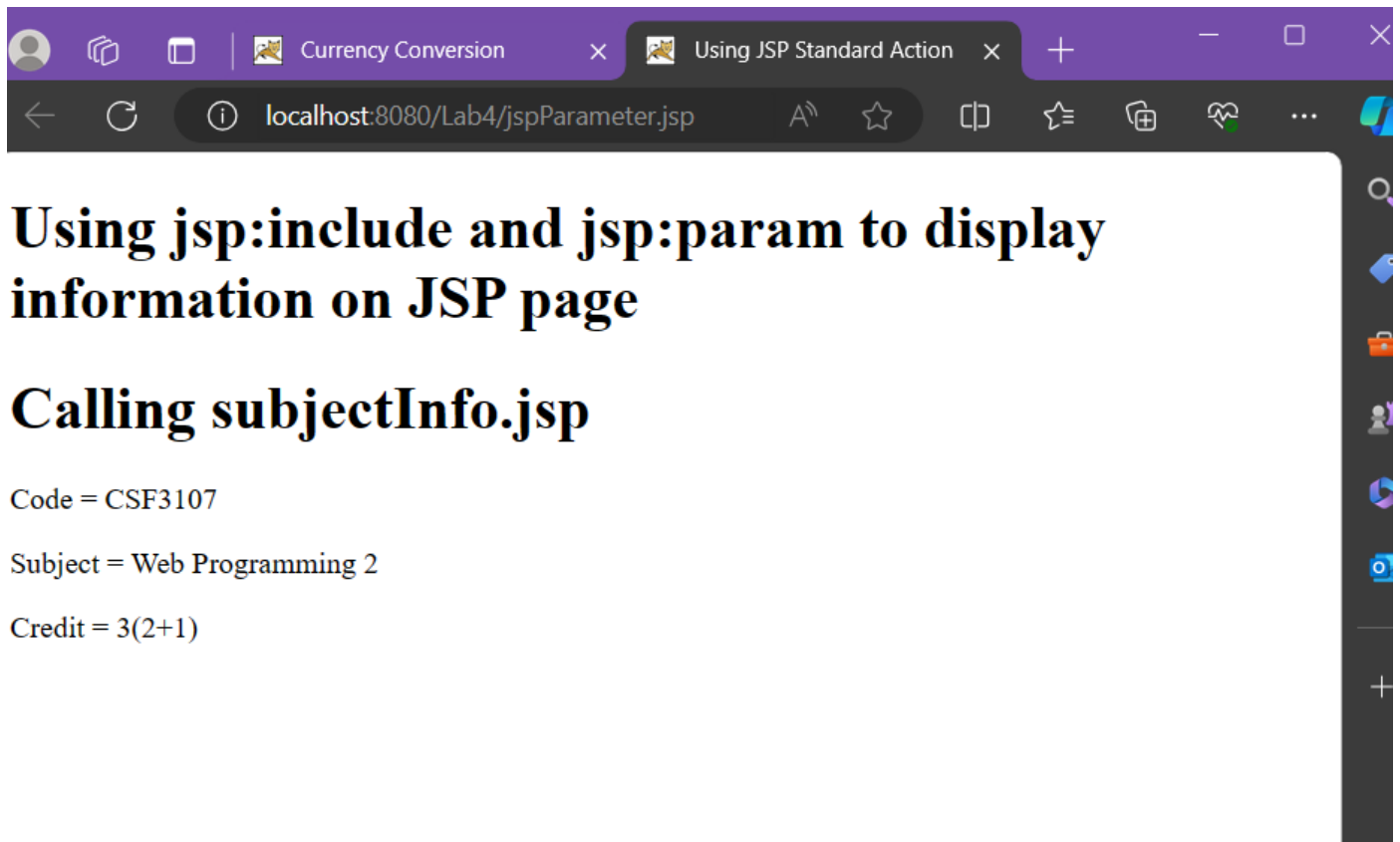
12. Compile and run *jspParameter.jsp*'s file.

13. Output will appear in web browser.

```
<%@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>
```

```
<%@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>
```



### Reflection

1. What you have learnt from this exercise?  
= How to use `<jsp:include>` and `<jsp:param>` to display information on JSP page
  
2. List **TWO (2)** other JSP Standard Action Tag.  
= `jsp:useBean`  
= `jsp:setProperty`

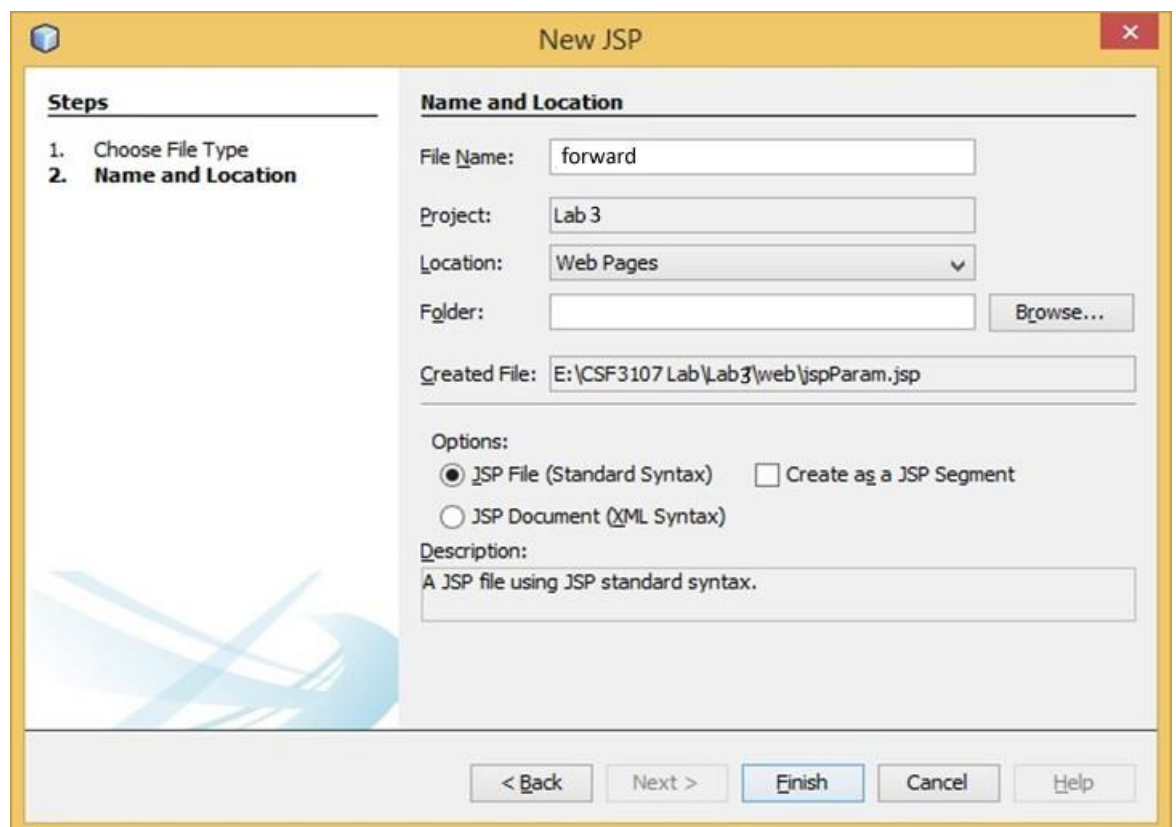
## Task 4: Using JSP Standard Action (Forward)

**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>

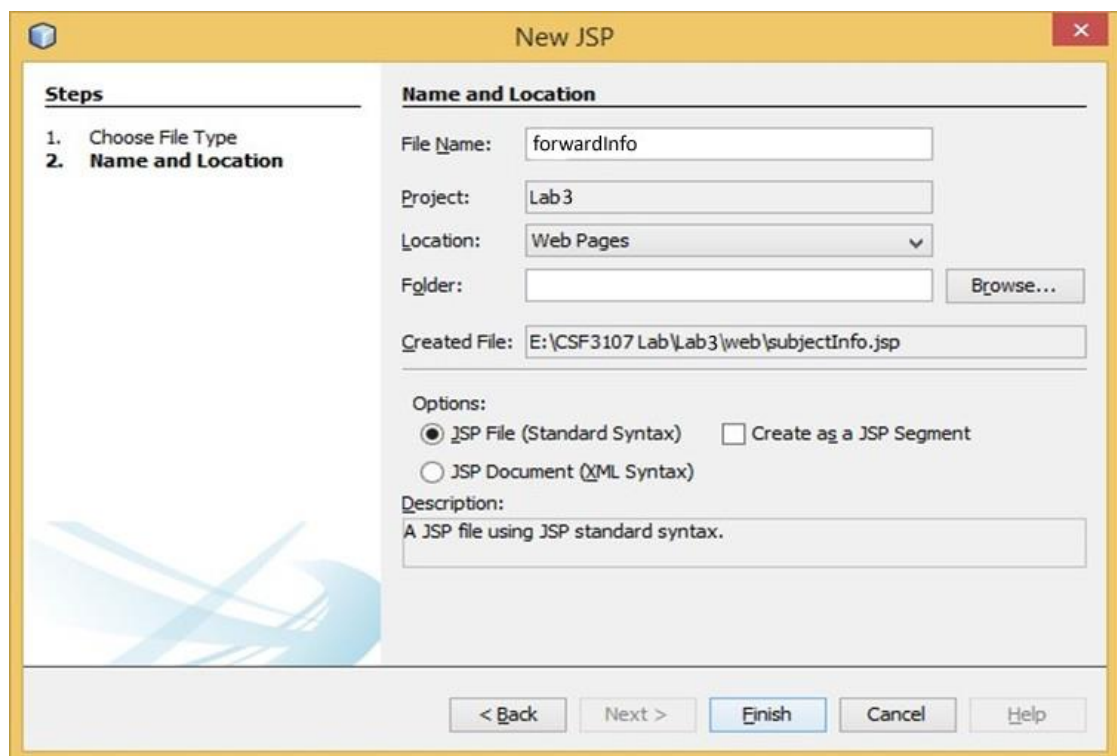
</html>
```

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 `<jsp: forward>` to display user information and object on JSP page

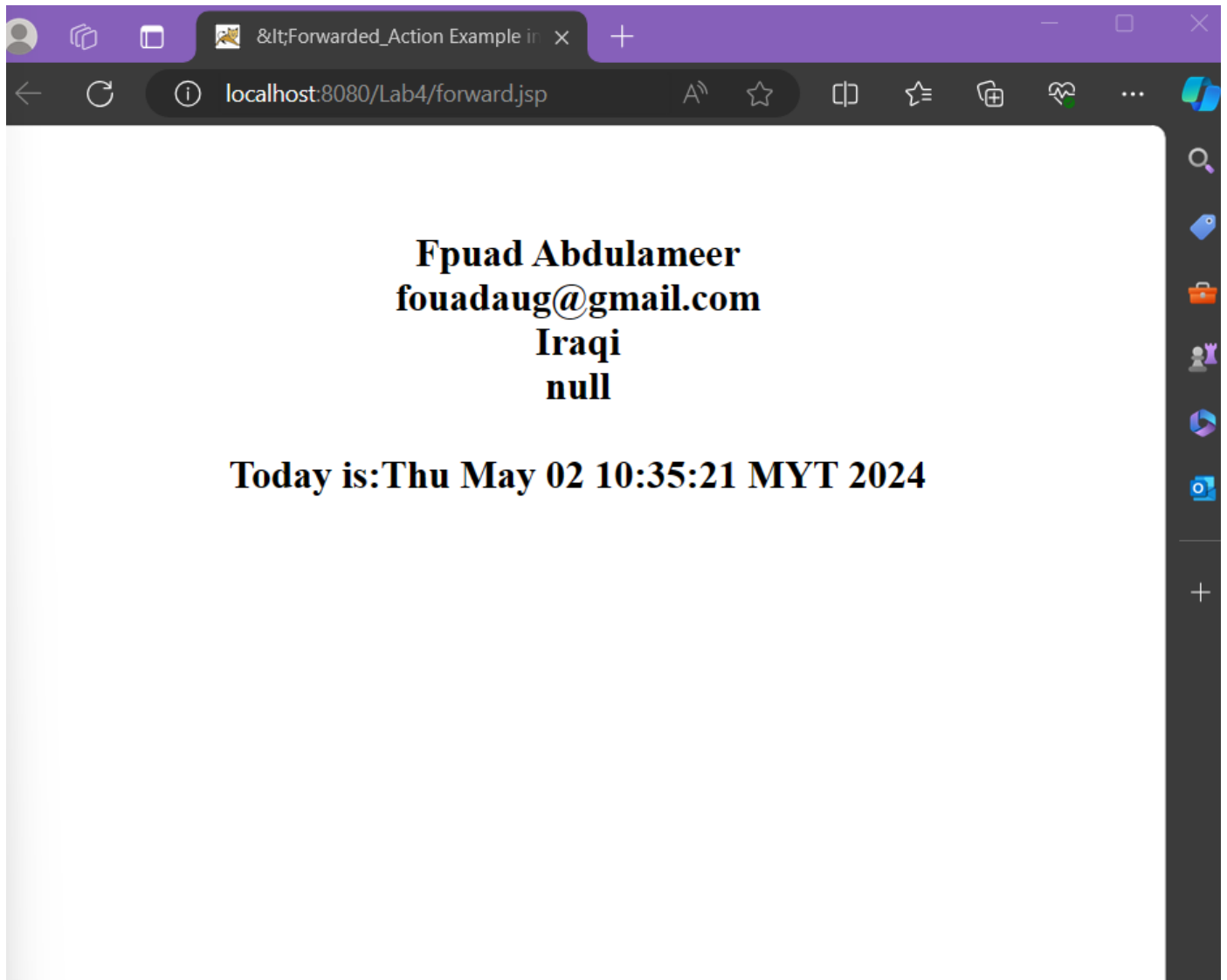
2. List **TWO(2)** More JSP Standard Action Tag.  
= `jsp:fallback`  
= `jsp:plugin`

## forward.jsp

```
Source History
1 <%--
2     Document    : forward
3     Created on  : 24 April 2024, 12:59:45 am
4     Author     : ryna
5 --%>
6
7 <%@page contentType="text/html" pageEncoding="UTF-8"%>
8 <!DOCTYPE html>
9 <html>
10 <head>
11     <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
12     <title>Using JSP Standard Action (forward)</title>
13 </head>
14 <body>
15     <h2>Using jsp:forwrd to display user info.</h2>
16     <jsp:forward page="forwardInfo.jsp">
17         <jsp:param name="U_Name" value="Fpuad Abdulameer"/>
18         <jsp:param name="Email" value="fouadaug@gmail.com"/>
19         <jsp:param name="Nationality" value="Iraqi"/>
20         <jsp:param name="background" value="Developer"/>
21     </jsp:forward>
22 </body>
23 </html>
24
```

## forwardInfo.jsp

```
0-SNAPSHOT Source History
1 <%--
2     Document    : forwardInfo
3     Created on  : 24 April 2024, 1:28:35 am
4     Author     : ryna
5 --%>
6
7 <%@page contentType="text/html" pageEncoding="UTF-8"%>
8 <!DOCTYPE html>
9 <html>
10 <head>
11     <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
12     <title>&lt;It;Forwarded_Action Example in JSP&gt;</title>
13 </head>
14 <body>
15     <% String name = request.getParameter("U_Name"); %>
16     <% String Email = request.getParameter("Email"); %>
17     <% String Nationality = request.getParameter("Nationality"); %>
18     <% String Background = request.getParameter("Background"); %>
19     <% if (name != null) {%>
20     <b><br><br><h2 align="center">
21
22         <%=name%><br>
23         <%=Email%><br>
24         <%=Nationality%><br>
25         <%=Background%><br><br>
26
27         <% out.print("Today is:" + java.util.Calendar.getInstance().getTime());%>
28     </h2></b></br>
29     <%}%>
30 </body>
31 </html>
```



## Task 5: Use Java Scriptlet To Construct Business Logic

**Objective** : Use Java Scriptlet 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).

## Insurance Quotation

Insurance Calculation

ICNo\*

E.g. 821210-05-3478

Name\*

Enter name

Market Price\*

Price

Coverage Type

Third Party ▼

No claims discount (NCD)

10% ▼

10%

25%

35%

55%

Submit

Cancel

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4. You need to ensure all front-end validation take place.
5. Creating another JSP's file known as *processInsuranceQuo.jsp*.
6. Use Java Scriptlet 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.

## Insurance Quotation

Insurance Calculation

ICNo \*

870510-11-2167

Name \*

Mohd Razali Abdullah

Market Price \*

40000

Coverage Type

Comprehensive ▼

No claims discount (NCD)

35% ▼

Submit

Cancel

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11. You should get the following output.

## Details of Insurance Quotation

IC No : 870510-11-2167

Customer Name : Mohd Razali Abdullah

Market Price : 40000

Coverage Type : Comprehensive

No claim discount (NCD) = 35%

Insurance amount : 960.00

6% GST : 57.60

Final amount (with 6% GST) : 1017.60

## **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.

## insuranceQuotation.jsp

```

7  <%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
8  <!DOCTYPE html>
9  <html>
10 <head>
11     <meta charset="UTF-8">
12     <title>Insurance Quotation</title>
13     <script>
14         function validateForm() {
15             var icNo = document.getElementById("icNo").value;
16             var name = document.getElementById("name").value;
17             var marketPrice = document.getElementById("marketPrice").value;
18             var coverageType = document.getElementById("coverageType").value;
19             var ncd = document.getElementById("ncd").value;
20
21             if (icNo === "" || !icNo.match(/^\d{6}-\d{2}-\d{4}$/)) {
22                 alert("Please enter a valid ICNo (Format: #####-##-####)");
23                 return false;
24             }
25
26             if (name === "" || !/^[a-zA-Z ]+$/.test(name)) {
27                 alert("Please enter a valid name (alphabets and spaces only)");
28                 return false;
29             }
30
31             if (marketPrice === "" || isNaN(marketPrice) || parseFloat(marketPrice) <= 0) {
32                 alert("Please enter a valid market price (numeric and greater than 0)");
33                 return false;
34             }
35
36             if (coverageType === "") {
37                 alert("Please select a coverage type");
38                 return false;
39             }
40
41             if (ncd === "") {
42                 alert("Please select a No Claims Discount (NCD)");
43                 return false;
44             }
45
46             return true;
47         }
48     </script>
49 </head>
50 <body>
51     <h1>Insurance Quotation</h1>
52
53     <h2>Insurance Calculation</h2>
54
55     <form action="processInsuranceQuo.jsp" method="post" onsubmit="return validateForm()">
56         <label for="icNo">ICNo*</label>
57         <input type="text" id="icNo" name="icNo" required><br><br>
58
59         <label for="name">Name*</label>
60         <input type="text" id="name" name="name" required><br><br>
61
62         <label for="marketPrice">Market Price*</label>
63         <input type="text" id="marketPrice" name="marketPrice" required><br><br>
64
65         <label for="coverageType">Coverage Type</label>
66         <select id="coverageType" name="coverageType">
67             <option value="">Select</option>

```

● validateForm



```

63
64     <label for="coverageType">Coverage Type</label>
65     <select id="coverageType" name="coverageType">
66         <option value="">Select</option>
67         <option value="Comprehensive">Comprehensive</option>
68         <option value="Third Party">Third Party</option>
69     </select><br><br>
70
71     <label for="ncd">No Claims Discount (NCD)</label>
72     <select id="ncd" name="ncd">
73         <option value="10%">10%</option>
74         <option value="20%">20%</option>
75         <option value="30%">35%</option>
76     </select><br><br>
77
78     <input type="submit" value="Submit">
79     <input type="reset" value="Cancel">
80 </form>
81 </body>
82 </html>
83

```

## processInsuranceQuo.jsp

```

7  <%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
8  <!DOCTYPE html>
9  <html>
10 <head>
11     <meta charset="UTF-8">
12     <title>Insurance Quotation Processing</title>
13 </head>
14 <body>
15     <h1>Insurance Quotation Processing</h1>
16     <!-- Retrieve form parameters using Scriptlets -->
17     <% String icNo = request.getParameter("icNo");
18         String name = request.getParameter("name");
19         double marketPrice = Double.parseDouble(request.getParameter("marketPrice"));
20         String coverageType = request.getParameter("coverageType");
21         String ncd = request.getParameter("ncd");
22
23         double baseAmount = calculateBaseAmount(marketPrice, coverageType, ncd);
24         double gstAmount = calculateGST(baseAmount);
25         double totalAmount = baseAmount + gstAmount;
26     %>
27
28
29     <h2>Insurance Quotation Summary</h2>
30     <p>IC No: <%= icNo %></p>
31     <p>Customer Name: <%= name %></p>
32     <p>Market Price: <%= marketPrice %></p>
33     <p>Coverage Type: <%= coverageType %></p>
34     <p>No Claims Discount (NCD): <%= ncd %></p>
35     <p>Insurance Amount: <%= String.format("%.2f", baseAmount) %></p>
36     <p>6% GST: <%= String.format("%.2f", gstAmount) %></p>
37     <p>Final Amount (with 6% GST): <%= String.format("%.2f", totalAmount) %></p>

```

```
38     </body>
39 </html>
40
41 <%!
42     public double calculateBaseAmount(double marketPrice, String coverageType, String ncd) {
43         double baseAmount = marketPrice * 0.024;
44         return baseAmount;
45     }
46
47     public double calculateGST(double baseAmount) {
48         double gstAmount = baseAmount * 0.06;
49         return gstAmount;
50     }
51 %>
52
```

# Insurance Quotation Processing

## Insurance Quotation Summary

IC No: 870510-11-2167

Customer Name: Mohd Razali Abdullah

Market Price: 40000.0

Coverage Type: Comprehensive

No Claims Discount (NCD): 30%

Insurance Amount: 960.00

6% GST: 57.60

Final Amount (with 6% GST): 1017.60

## 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:

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

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.

## bmi.html

```
1 <!DOCTYPE html>
2 <!--
3 Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
4 Click nbfs://nbhost/SystemFileSystem/Templates/JSP\_Servlet/Html.html to edit this template
5 -->
6 <html lang="en">
7 <head>
8   <meta charset="UTF-8">
9   <meta name="viewport" content="width=device-width, initial-scale=1.0">
10  <title>BMI Calculator</title>
11 </head>
12 <body>
13   <h1>BMI Calculator</h1>
14   <form action="calculateBMI.jsp" method="post">
15     <label for="weight">Weight (kg):</label>
16     <input type="number" id="weight" name="weight" required><br><br>
17
18     <label for="height">Height (m):</label>
19     <input type="number" id="height" name="height" step="0.01" required><br><br>
20
21     <button type="submit">Calculate BMI</button>
22   </form>
23 </body>
24 </html>
```

## calculateBMI.jsp

```
7 <%@page contentType="text/html" pageEncoding="UTF-8"%>
8 <!DOCTYPE html>
9 <html>
10   <head>
11     <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
12     <title>BMI Result</title>
13   </head>
14   <body>
15     <h1>Your BMI Result</h1>
16     <%
17       double weight = Double.parseDouble(request.getParameter("weight"));
18       double height = Double.parseDouble(request.getParameter("height"));
19
20       double bmi = weight / (height*height);
21       String bmiMessage;
22
23       if (bmi < 18.5){
24         bmiMessage = "Underweight";
25       } else if (bmi <= 25){
26         bmiMessage = "Optimal weight";
27       } else {
28         bmiMessage = "Overweight";
29       }
30     %>
31
32     <p>Your BMI is: <%= bmi %></p>
33     <p>Weight Category: <%= bmiMessage %></p>
34
35   </body>
36 </html>
```

# BMI Calculator

Weight (kg):

Height (m):

Calculate BMI

---

## Your BMI Result

Your BMI is: 0.0021484375

Weight Category: Underweight