

Week 3

JSP: Scriptlet, Expression & Standard Actions

Web Programming 2

Name:
Matric #:
Semester:
Lab:
Demonstrator:

Lecturers

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

Table of Contents

Task 1: Using JSP Scripting	4
Task 2: Using JSP (Scripting, Declaration and Expression)	7
Task 3: Using JSP Standard Action (Include and Param).....	10
Task 4: Using JSP Standard Action (Forward)	14
Task 5: Use Java Scriptlet To Construct Business Logic	18

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: Key-in customer c

Quantity: Key-in 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?
2. Explain three (3) type of JSP scripting?

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

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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

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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
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Reflection

1. What have you learn from this exercise?

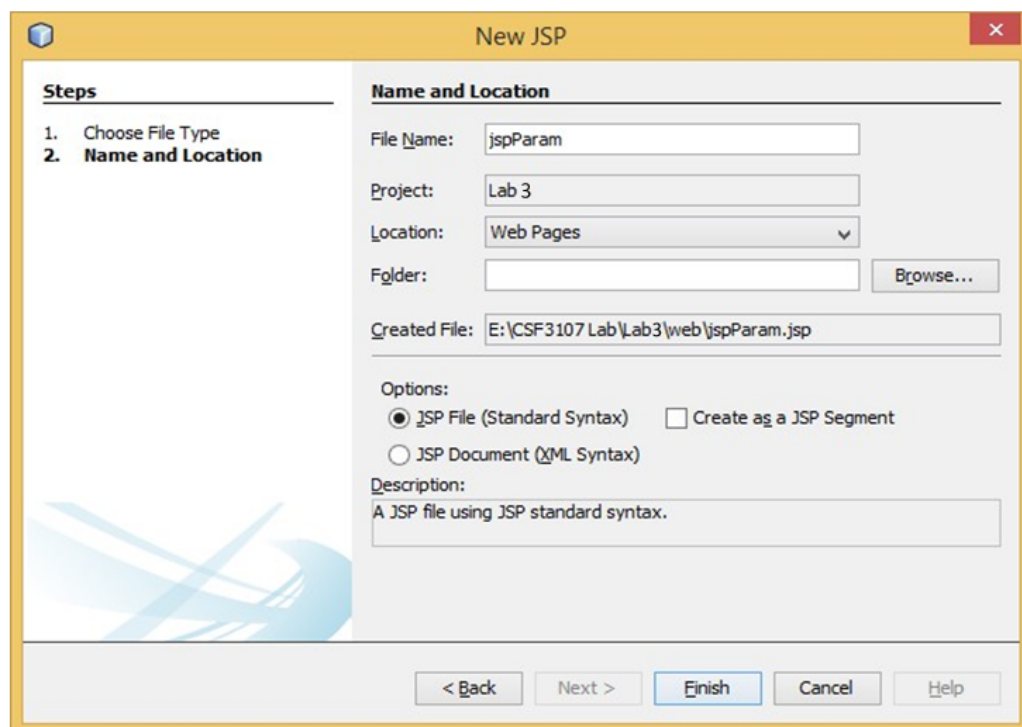
Task 3: Using JSP Standard Action (Include and Param)

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.

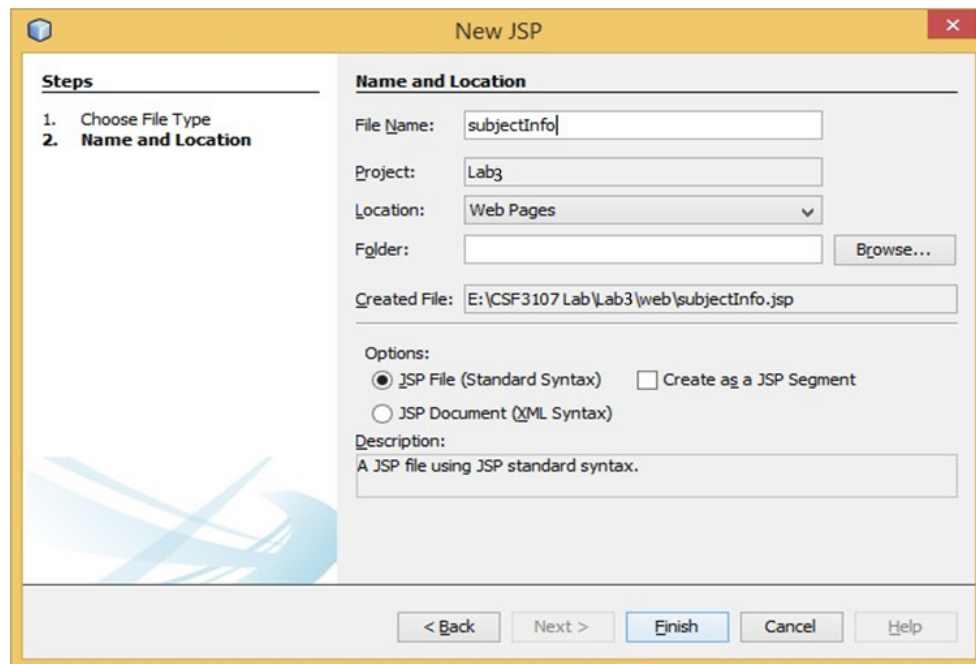
```
14     <body>
15         <h1>Using jsp:include and jsp:param to display information on JSP page</h1>
16     <%
17         String sCode = "CSF3107";
18         String sSubject = "Web Programming 2";
19         String sCredit = "3(2+1)";
20     %>
21 </body>
```

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>

```

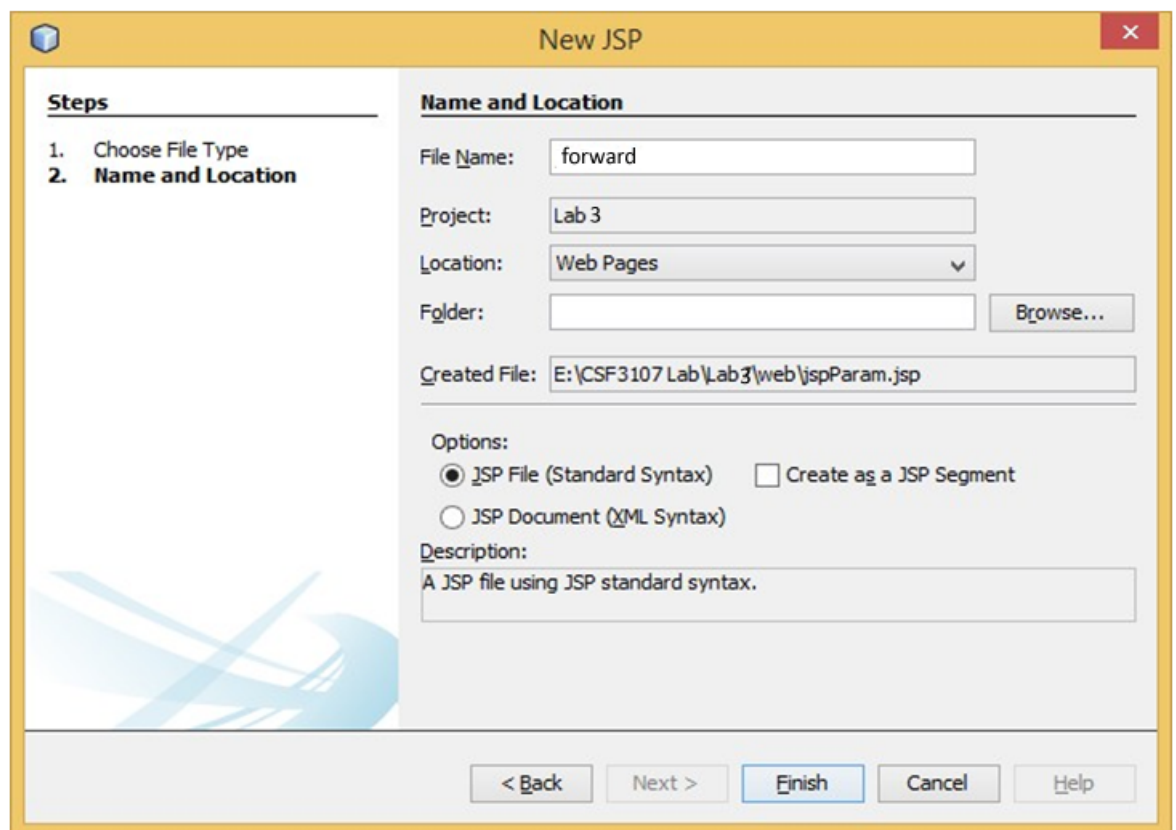

Task 4: Using JSP Standard Action (Forward)

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>

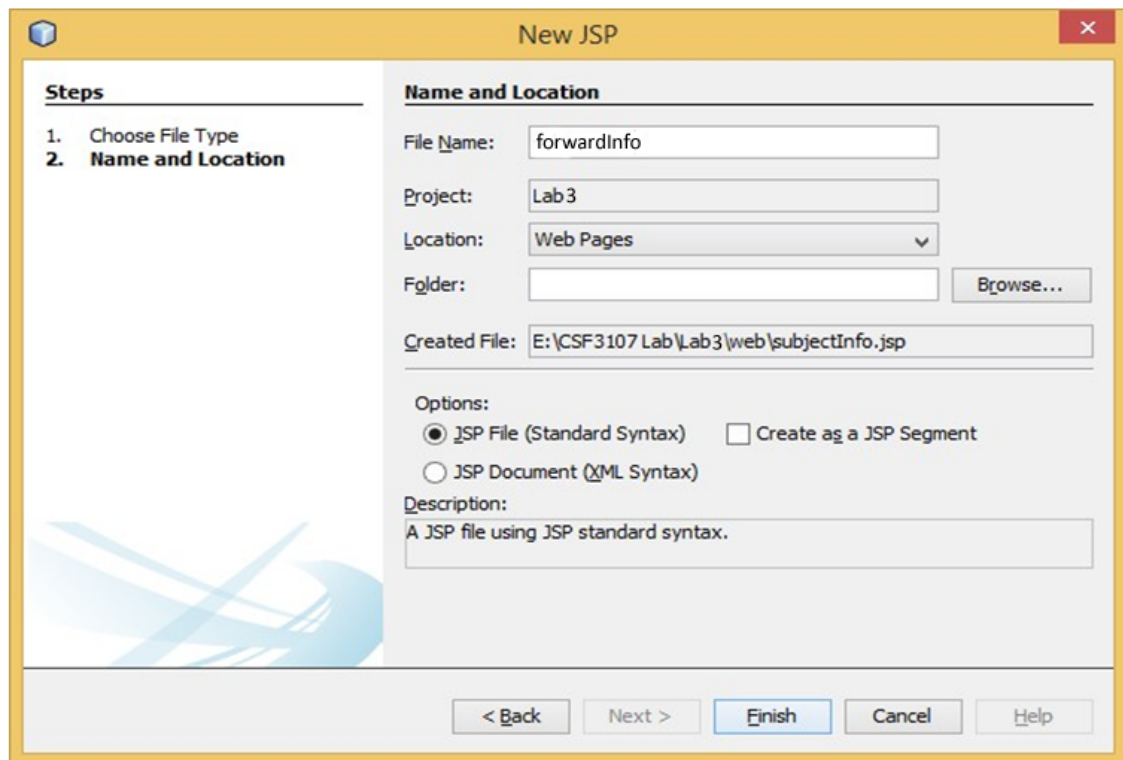
</html>
```

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

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 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.

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

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.