

# Advance Java Project

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BK 02

Title of the Project : BMI Calculator (Body Mass Index )

## Introduction

BMI is a simple calculation using person weight and height.

The body mass index is a measure that uses your height and weight to work out if your weight is healthy. The higher your BMI the higher your risk for certain diseases such as heart disease , high blood pressure and certain cancers.

## BMI Formula

$BMI = \text{weight} / \text{Height}$

Height is kg

Weight is m<sup>2</sup>

## Ranges for BMI

25.0 or more -> Over Weight

18.5 to 24.9 -> Normal Weight

Below 18.5 -> Under Weight

## Prerequisites

Knowledge of Java Servlets and Jsp

Integrated Development Environment (IDE) such as like eclipse

Apache Tomcat Server Installed

## Implementation Details

- 1) BMI JSP File
- 2) BMI Servlet File
- 3) BMI output JSP File

## Jsp Form

➔ Create Jsp form in the /Webcontent directory

```

1  <%@ page language="java" contentType="text/html; charset=ISO-8859-1"
2      pageEncoding="ISO-8859-1"%>
3  <!DOCTYPE html>
4  <html>
5  <head>
6      <meta charset="ISO-8859-1">
7      <title> BMI Calculator</title>
8      <style>
9          .demo{
10             text-align:center;
11             text-decoration:underline;
12             font-style: italic;
13             color:red;
14             padding:10px;
15         }
16         form{
17             text-align:center;
18             border:1px brown dashed;
19             padding:20px;
20             width:350px;
21             height:100px;
22             background-color:aliceblue;
23         }
24         input{
25             color:green;
26             font-style: italic;
27         }
28         body{
29             background-color: floralwhite;
30         }
31     </style>
32 </head>
33 <body>
34     <h1 class="demo">BMI Calculator ( Body Mass Index) </h1><br> <br>
35     <center>
36     <form action = "BMIServlet" method="post">
37         Enter Your Weight : <input type="number" name="weight" placeholder="Enter Your Weight" required /> <br><br>
38         Enter Your Height : <input type="number" name="height" placeholder="Enter Your Height" required /> <br><br>
39         <input type="submit" value="Submit" />
40     </form>
41     </center>
42 </body>
43 </html>

```

## Servlet

➔ Create BMIServlet.java file in the default or any given folder name package

```
BMI.jsp  BMIServlet.java X
12
13 /**
14  * Servlet implementation class BMIServlet
15  */
16 @WebServlet("/BMIServlet")
17 public class BMIServlet extends HttpServlet {
18     private static final long serialVersionUID = 1L;
19
20     /**
21      * @see HttpServlet#HttpServlet()
22      */
23     public BMIServlet() {
24         super();
25         // TODO Auto-generated constructor stub
26     }
27
28     /**
29      * @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)
30      */
31     protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
32         // TODO Auto-generated method stub
33         response.getWriter().append("Served at: ").append(request.getContextPath());
34     }
35
36     /**
37      * @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)
38      */
39     protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
40         double weight = Double.parseDouble(request.getParameter("weight"));
41         double height = Double.parseDouble(request.getParameter("height"));
42         PrintWriter pw=response.getWriter();
43
44         double bmi=(weight/(height*height)); // bmi formula
45
46         bmi=bmi*10000; // Converting cm to m square
47
48         pw.println(bmi + " " + "kg/MeterSquare");
49
50
51         request.setAttribute("height",height) ; //pass data from one servlet to another like servlet.jsp
52         request.setAttribute("weight",weight) ;
53         request.setAttribute("bmi",bmi) ;
54
55         RequestDispatcher rd=request.getRequestDispatcher("BMIOutput.jsp"); //Redirect one resource to another resource
56         rd.forward(request,response);
```

## JSP Output

- ➔ Create BMIOutput.jsp page .. Output page displayed output of the BMI calculator
- ➔

```
BMI.jsp  BMIServlet.java  BMIOutput.jsp X
7 <title> BMI Result</title>
8 <link href="css/bootstrap.css" rel="stylesheet" >
9 <style>
10 body{
11 background-color: bisque;
12 }
13 .demo1{
14 text-align:center;
15 width:150px;
16 color:violet;
17 font-size:20px;
18 }
19 .demo{
20 text-align:center;
21 text-decoration:underline;
22 font-style:italic;
23 color:blue;
24 padding:20px;
25 }
26 .demo2{
27 color:green;
28 font-size:40px;
29 }
30 .demo3{
31 color:white;
32 background-color:violet;
33 font-size:30px;
34 margin:10px;
35 }
36 </style>
37 </head>
38 <body>
39 <center>
40 <h1 class="demo"> Body Mass Index(BMI)</h1> <br>
41 <div class="demo1">
42 <p > Height : ${height}cm </p>
43 <p> Weight:  ${weight}kg </p>
44 </div>
45 <h3 class="demo2"> Body Mass Index  Result : ${bmi} kg/m^2 </h3>
46
47 <a href="BMI.jsp" class="btn btn-warning fw-semibold m-5">Back</a>
48
49 </center>
50 </body>
51 </html>
```

## Conclusion

In Summary the BMI calculator project employs Servlets and Jsp. CSS is used for styling. The higher a person's BMI, the greater their chances of developing certain serious conditions, such as heart disease, high blood pressure, and diabetes. A very low BMI can also cause health problems, including bone loss, decreased immune function, and anemia.

Thank You