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| **Instructor** |  | **Due Date** |  |

**PROJECT Selection Program Control : BMI Calculator 50 points**

**Objective** To write a program that will generate a person’s BMI result based on the persons weight and height.

***PROJECT DESCRIPTION***

Write a program that calculates and displays a persons’ 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:

BMI = [ weight × 703 / height 2 ]

where *weight* is measured in pounds and *height* is measured in inches. The program should ask the user to enter his or her weight and height and then display the user’s BMI value.

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 their BMI is between 18.5 and 25 . If the BMI is less than 18.5 the person is considered underweight. If the BMI value is greater than 25 , the person is considered to be overweight.

When completed, copy your program source code as well as include a snapshot of your running program input / output results along with your name and course number, etc. into an MS Word doc. Submit your file to the appropriate course submittal Drop Box when complete.

***Information about This Project***

**[ Selection Program Control ]**

The three types of program control include sequential, selection and repetition. Selection program control arises when the execution of the programming statements occurs in a step by step fashion but with decisions or branches appearing along the way.

**[ Body Mass Index ]**

An example of computing a BMI value is:

*body weight* 210 pounds

*height* 72 inches

BMI = [ weight × 703 / height 2 ]

BMI = [ 210 × 703 / 72 ] 2

BMI ≈ 28.5 *overweight*

You can check your result by visiting an online BMI calculator such as the one located at this link:

[**https://www.bcbst.com/providers/MPMTools/BMICalculator.shtm**](https://www.bcbst.com/providers/MPMTools/BMICalculator.shtm)

***Steps to Complete This Project***

**STEP 1**  **Open the Python IDLE IDE and Write the Program Code**

Open the Python IDLE IDE ( Integrated Development Environment ) or similar Python development environment on your computer.

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You will notice when you initially open Python, the default is an interpretive shell allowing only for single commands to be given. You really need to enter in a whole program then execute it to work any of the labs for the course. To start entering code into IDLE go to **File > New File** from your menu. This will allow you to enter your source code in an editor style format like Notepad.

**STEP 2**  **Consider the Pseudo - Code for this Application**

Prior to writing the code statements for this project, you can examine the   
pseudo - code that can be used to compute the desired results.

**Prompt the User for the Person’s Weight ( in pounds U.S. )**

**Input the Person’s Weight**

**Prompt the User for the Person’s Height ( in inches U.S. )**

**Input the Person’s Weight**

**Compute the BMI**

**If the BMI is Below 18.5 Then**

**Print the Person is Underweight**

**Else If the BMI is Between 18.5 and 25 Then**

**Print the Person is Normal**

**Else**

**Print the Person is Overweight**

**End If**

**STEP 3**  **Write the Program Code for this Application**

Complete the program statements to satisfy the requirements of this application.

**STEP 4**  **Run and Test Your Program**

With your application compiling correctly and without any errors, run your program.

Test your program with various weights and heights such that each of these

scenarios are resulted.

*person is underweight*

*person is normal*

*person is overweight*

Take a screen snapshot for each of the above scenarios and submit the snapshots for credit in an MS Word or equivalent document. Place your program source code into the same MS Word document and submit the document for credit to the appropriate course submittal box.

\*Grads supplement your code that incorporates a menu that will allow the user to choose an option to enter the weight and height in either customary English units or metric units.

Display results showing each outcome, i.e., one in English units and one in metric units i.e., a BMI computed from English units and a BMI computed in metric units.