# Lab 2 Body Mass Index Plan

## Request

The client has requested additional validation for the original Body Mass Index software. This will be in the form of input validation for the height and mass of their customer between a range of numbers.

## Process

### Output

The program should output a message that states that the user did not enter the correct information once submitted.

Additionally, if everything is entered correctly the software must now not only calculate their Body Mass Index but output if the information submitted considered severely, underweight, healthy, overweight, or obese.

### Input

* User Input for Height and saved in a variable for height.
* User Input for Weight(Mass) and saved in a variable for weight
* Calculated Body Mass Index Rounded to the 1st decimal place. To be validated to determine what category the customer is in.

### Process

* Check User Input (Range of 5” to 120”) and store in variable on success.
* Check User Input (Range of 0.5 lb to 999 lb) and store in variable on success.
* Provide appropriate message if validation fails.
* Calculate the Body Mass Index with the following formula and store in variable on success.
* Take the Calculated Body Mass Index and display text based on the following conditions
  + BMI of less than 16 is considered “severely underweight”
  + A BMI of 16 up to less than 18.5 is considered “underweight”.
  + A BMI of 18.5 up to less than 25 is considered “healthy”.
  + A BMI of 25 up to less than 30 is considered “overweight”.
  + A BMI of 30 or over is considered “obese”.
* Display Body Mass Index and appropriate category for provided information

## Pseudo-Code

* Define Constant int conversionFactor = 703 for the process calculation
* Define double userInput to store user input from console
* Define double for height to store height information from user input
* Define double for weight to store weight information from user input
* Define double for BodyMassIndex to store calculation after user input has been validated
* Define string userCategory to store user classification after BodyMassIndex calculation
* Display message “Please enter user height in inches: ”
  + Store users input into height if input is validated based on range of >= 5” && <= 120”
  + Inform the user that they have entered something incorrectly (Error Message)
  + If correct move to next question
* Display message “Please enter user weight in pounds: “
  + Store users input into weight if the input is validated based on range of >=0.5 && <=999
  + inform the user that they have entered something incorrectly (Error Message)
  + If correct move to BodyMassIndex calculations
* Calculate BodyMassIndex
  + IF(BodyMassIndex < 16)
  + Store string that user is considered severely underweight into variable userCategory
  + ELSE IF(BodyMassIndex >= 16 && < 18.5)
  + Store string that user is considered underweight into variable userCategory
  + ELSE IF(BodyMassIndex >=18.5 && < 25)
  + Store string that user is considered healthy into variable userCategory
  + ELSE IF(BodyMassIndex >=25 && <30)
  + Store string that user is considered overweight into variable userCategory
  + ELSE IF(BodyMassIndex >=30)
  + Store string that the user is considered obese into variable userCategory
* Display The BMI for a (height)" tall person who weighs (weight) lb. is (BodyMassIndex), which is categorized as “(userCategory)”.
* Display Press any key to end this application...