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Program #1 pseudocode

Our program is calcBMI with the basic idea of calculating a User’s BMI and displaying it to them after several prompts.

1. To start the program, we will need to declare 3 variables, int UserHeight to store the User’s height input, int UserWeight to store the User’s weight input, and a float BMI to store our calculated BMI into.
2. We will need to use the iostream and string libraries
3. Our program will first greet the User, welcoming them to calcBMI
4. Next, a question will appear asking the User to enter their height in inches (with an example - 72) and hit enter. The program will then store the value entered here into UserHeight only if it passes validation of being an integer.
5. After step #2, a new question will appear asking for the User’s weight in pounds (example – 180). This value will then be stored into UserWeight only if it passes the proper validation of being an integer.
6. After step #3, a new question will appear asking for the User’s age (example 25). This value will be stored into UserAge only if passes proper validation of being an integer.

Once the program has received all 3 inputs from the User, we can begin our calculations. The formula for Body Mass Index is (weight in pounds multiplied by 703) divided by (height in inches) squared. Weight\*703/height^2

1. To do our calculations, we use the variables (UserHeight, UserWeight, and BMI). We can do the calculation on one line of code by setting the BMI variable = (UserWeight multiplied by 703) divided by (UserHeight multiplied by UserHeight). This will result in the BMI variable properly being assigned a float value which should be the User’s BMI.

In order to output the User’s body type, we will need to create a nested if else chain statement with age ranges and BMI ranges.

1. Declare a string variable for our body type. string BodyType
2. Our if else chain will look something like:

If (UserAge >= 18 && UserAge <= 35)

If(BMI >= 20 && BMI <= 35)

Cout << “Your body type is XXX where XXX is a manually typed body type

Else if (BMI > 35 && BMI <= 45)

Cout << “Your body type is XXX where XXX is a manually typed body type

Else

BMI was out of range.

Else if(UserAge >= 18 && UserAge <= 35)

Repeat the logic from if statement above

Else

Age was out of range.

Once step 6 is complete, we need to output the results of the calculations.

1. We will display on the screen the User’s BMI value. “Your BMI result is: <BMI>”
2. We will also display the User’s body type. “Based on the current BMI chart, your body type is considered”

This concludes our project.

1. We will display “Thank you for using calcBMI.”