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ECE 1310.04

The Voyagers

Homework 05 – Group Project 01

Pseudocode

/\*Pseudocode

\* Part 1

\* ===================================

\* declare variables

\* double feet, inch, lbs, height, BMI

\*

\* prompt user input

\* get height in feet

\* get inch compenent

\* get weight

\*

\* feet x 12 to get feet component in inches

\* + inches to get total height in inches = height

\*

\* use BMI calculation formula

\* BMI = (weight / (height x height)) x 703

\*

\* output BMI results to user

\*

\* =====================================

\* Part 2

\* =============================

\* declare variables

\* string category

\*

\* switch case for categories - cant use switch since BMI is a double, so use if

\* case 1 : BMI < 18.5

\* category = "Underweight"

\* case 2 : 18.5 <= BMI < 25

\* category = "Normal Weight"

\* case 3 : 25 <=BMI < 30

\* category = "Overweight"

\* default //BMI is 30 or greater

\* category = "Obese"

\*

\* output category result to user

\*/

Screenshots

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

Code

//Main Function

using namespace std;

int main(int argc, char\*\* argv)

{

//Part 1 ====================================

double feet, inch, lbs, height, BMI;

//prompt user input

cout << "Welcome to the BMI Calculator!\n"

<< "Enter your height in feet: ";

cin >> feet;

//validate

if (feet <= 0)//if 0 or negative is entered

{

cout << "Invalid input. Try again: ";

cin >> feet;

if (feet <= 0)//if 0 or negative is entered

{

cout << "Invalid input. Restart the program and try again.\n";

exit(0);//exit program

}

}

cout << "Enter the remaining inches: ";

cin >> inch;

//validate

if (inch < 0 || inch > 12)//if negative or greater than 12 inches

{

cout << "Invalid input. Try again: ";

cin >> inch;

if (inch < 0 || inch > 12)//if negative or greater than 12 inches

{

cout << "Invalid input. Restart the program and try again.\n";

exit(0);//exit program

}

}

cout << "Enter your weight in lbs: ";

cin >> lbs;

//validate

if (lbs <= 0)//if 0 or negative is entered

{

cout << "Invalid input. Try again: ";

cin >> lbs;

if (lbs <= 0)//if 0 or negative is entered

{

cout << "Invalid input. Restart the program and try again.\n";

exit(0);//exit program

}

}

//total height is feet in inches plus remaining inches

height = (feet \* 12) + inch;

//calculate BMI using formula

BMI = (lbs / (height \* height)) \* 703;

//output BMI result to user

cout << "Your BMI is " << BMI;

//Part 2 ================================

//declare variable

string category;

//use if statements for different categories

if (BMI < 18.5)

category = "Underweight";

else if (18.5 <= BMI < 25)

category = "Normal Weight";

else if (25 <= BMI < 30)

category = "Overweight";

else if (BMI >= 30)

category = "Obese";

//finish outputting result to user

cout << " which is " << category << endl;

return 0;

}