CS 170 - Lab 04
Basic Calculations and I/O

Introduction
The purpose of this lab is to introduce you to the fundamental concepts of computer programming using simple calculations, assignment, and input output statements.

Notes
- For all programs the header from the template should be used.
- Add reasonable comments through all the program.
- All lab and homework classes should be grouped into one project.
- Make sure to follow the naming convention for the project name.
- For each program, screen shots of the results of running the program should be included in a Word (or pdf or rtf if you do not have Word) document.

I. Creating Hw02 project folder
- If you did not create a folder for this week’s assignment, do so by following the directions in Lab 03 assignment.

II. Simple Math Calculator
- Write a program named “SimpleMath” that produces the following output (make sure you pay attention to spaces, lines, and upper- and lower-case).

```
This program performs some simple math calculations.
First tell me what is your name: Martha
Hello, Martha! Nice to meet you.
I will perform some integer calculations for you.
Let's start!
Please enter two integer numbers separated by a space: 17 3

The results for integer arithmetic are:
Addition => (17 + 3) = 20
Subtraction => (17 - 3) = 14
Multiplication => (17 * 3) = 51
Division => (17 / 3) = 5
Modulus => (17 % 3) = 2

Now I will perform some floating-point calculations for you.
Please enter two double numbers separated by a space: 17.7 3.5

The results for floating-point arithmetic are:
Addition => (17.7 + 3.5) = 21.2
Subtraction => (17.7 - 3.5) = 14.2
Multiplication => (17.7 * 3.5) = 61.94999999999999
Division => (17.7 / 3.5) = 5.057142857142857
Modulus => (17.7 % 3.5) = 0.1999999999999993

Now if I cast the values to (int) the results will be:

The results for floating-point arithmetic are:
Addition => (17 + 3) = 21
Subtraction => (17 - 3) = 14
Multiplication => (17 * 3) = 61
Division => (17 / 3) = 5
Modulus => (17 % 3) = 0

Thank you for using the Simple Math application. Good bye!
```
III. Metric conversions

- Create a class named "MeterConversion".
- The code in the class should prompt the user for a measurement in meters and then converts it into miles, yards, feet, and inches.
- Make sure that the program purpose and user prompts are used, as well as displaying the results after the calculations.

Notes:
- You can use Google to search for the conversion formulas or from the following link: [http://www.onlineconversion.com/length_common.htm](http://www.onlineconversion.com/length_common.htm)
- Another useful YouTube video on how to perform the calculation – Make sure you calculate the number of yards as well: [http://youtu.be/DTAhmaF9R2I](http://youtu.be/DTAhmaF9R2I)

Sample Output:

```
Hello, This program converts meters to miles, yards, feet, and inches

Please enter the number of meters (ex. 2000): 2000

2000 meters = 1 mile(s),
              427 yard(s),
              0 feet, and
              8 inch(es).

This ends the meter conversion program, Goodbye!

Hello, This program converts meters to miles, yards, feet, and inches

Please enter the number of meters (ex. 2000): 1000

1000 meters = 0 mile(s),
              1093 yard(s),
              1 feet, and
              10 inch(es).

This ends the meter conversion program, Goodbye!

Hello, This program converts meters to miles, yards, feet, and inches

Please enter the number of meters (ex. 2000): 1610

1610 meters = 1 mile(s),
              0 yard(s),
              2 feet, and
              1 inch(es).

This ends the meter conversion program, Goodbye!
```