

Create a project called `daily2` and a source file called `daily2.cpp`.

Today we introduced the concept of C++'s pass by reference mechanism and reference variables. We also looked at what our author calls "The magic formula" for changing the way that the output stream `cout` writes floating point data to the screen.

Write a program that asks the user to enter a length given in feet and inches where you store feet in a variable of type `int` and inches in a variable of type `double`. Convert this length to meters and centimeters where meters is stored in a variable of type `int` and centimeters is stored in a variable of type `double`.

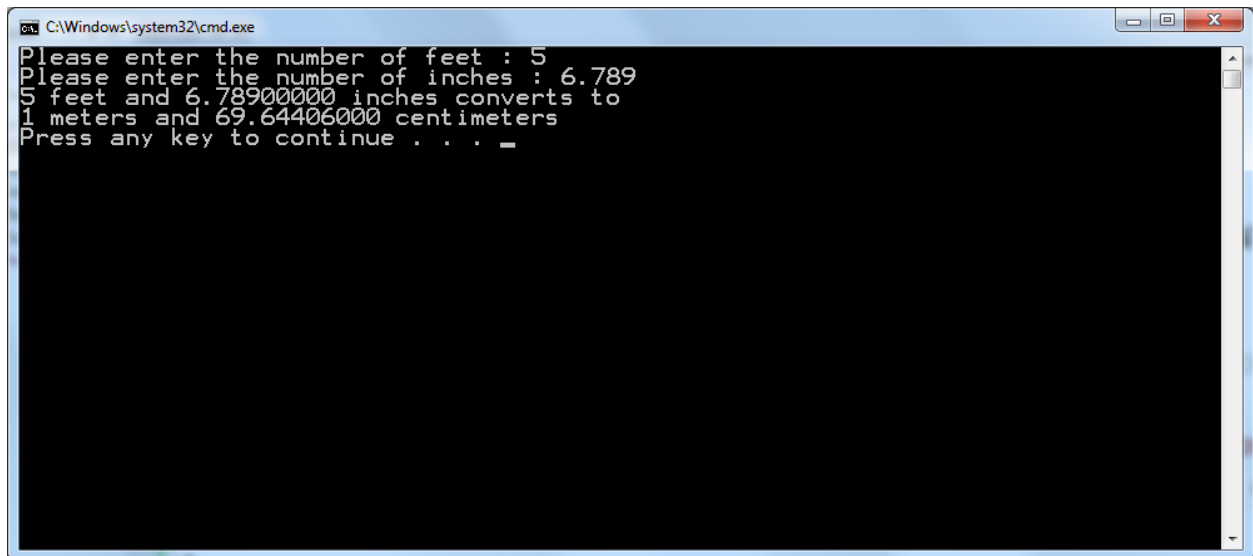
Your program should use at least three functions, not including `main`, that all return `void`:

- 1) One function should be used to get two input values from the user by using this new pass by reference mechanism
- 2) One function should take 4 parameters, feet, inches, meters and centimeters that after it is run will have changed the values of meters and centimeters so that they represent an equivalent length to our original input value in feet and inches. Here you will still need to use the pass by reference mechanism but notice that you do not need it for all of the parameters. Only use it if you need the function to be able to change the value of the argument you are passing in.
- 3) The last function should also take 4 parameters and should output the result of the calculation by outputting both the starting values and both of the resulting values. This function should not do any calculations. Your output for inches and centimeters should be displayed in fixed notation, showing the decimal place with 8 decimal digits of precision.

In your conversion function, change feet and inches into one variable containing feet and inches combined into some number of feet. Then change those feet into meters by using the conversion factors that there are 0.3048 meters in one foot. Then split those meters into meters and centimeters before returning from the function. You may find the `floor` function useful in the library `<cmath>`. There are 12 inches in a foot and there are 100 centimeters in a meter.

Recall, from earlier courses I hope, that constants that are not zero or the number 1 should be named constants in your code.

Your output should look something like this:

A screenshot of a Windows command prompt window. The title bar at the top reads "C:\Windows\system32\cmd.exe". The window has standard Windows window controls (minimize, maximize, close) on the right. The command prompt area is black with white text. The text displayed is: "Please enter the number of feet : 5", "Please enter the number of inches : 6.789", "5 feet and 6.78900000 inches converts to", "1 meters and 69.64406000 centimeters", and "Press any key to continue . . . \_".

```
C:\Windows\system32\cmd.exe
Please enter the number of feet : 5
Please enter the number of inches : 6.789
5 feet and 6.78900000 inches converts to
1 meters and 69.64406000 centimeters
Press any key to continue . . . _
```

Turn in your daily2.cpp file on Blackboard.