Lab 2: Length converter **Due:** 9/13/23

Problem: You are asked to write a program to receive a length expressed in feet, convert it to yards, and show the result on the screen.
The formula for converting a length expressed in feet to yards is:

length in yards = 1/3 x length in feet

Your solution must ask the user to enter the length in feet at the keyboard and then calculate and display the resulting length in yards.

Your task: implement in C++ the algorithm solution shown below.

Algorithm solution (in pseudocode):

To solve this problem your program must perform the following tasks:

// Declare variables called **len_feet** and **len_yards** that hold double precision real numbers.
// Prompt the user to enter the length in feet.
// Get the length from the keyboard and store it in the corresponding variable.
// Calculate the length in yards using the formula exactly as provided above and assign the result to the corresponding variable.
// Display on the screen the following message:
// "Hi"
//
// len_feet, " feet are equal to ", len_yards, " yards

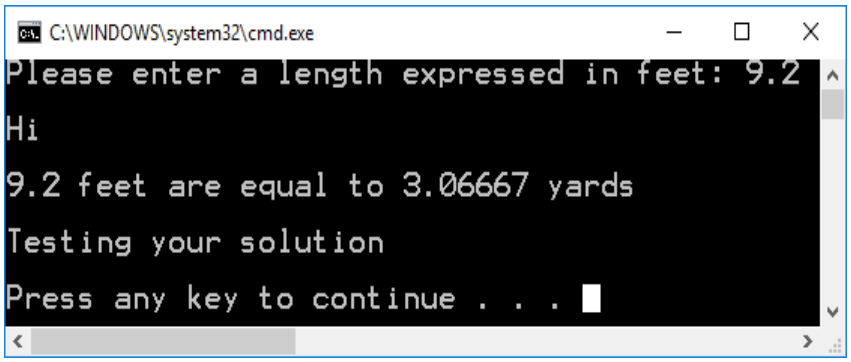
The program must compile without errors or warnings.

Open **lab02.cpp** in your IDE and implement the above algorithm (already provided in the source code as comments).

Note:

- Do NOT remove or modify the statements that I use to test certain things in your program.
- Run my sample solution to know how your program must behave (click on the link provided below). Pay attention to the input and the output formats. Your solution must behave exactly like mine.
- Carefully analyze the following figure and use it as a reference to ensure you do the right things.

  https://replit.com/@GDietrich/1470-lab02sample



- Test and compare your solution with mine for different birthdates to ensure they always produce the same outputs.

I am posting the executable of my solution for your reference. Please run it and ensure that your program works like mine. Try the values 9, 9.2, 9.6, 11, 11.25, and 12.25.

IMPORTANT: this lab requires you to use the tools I taught so far so review your class notes and read the textbook. Look at the examples used in my lectures.

All assignments assigned throughout the semester will require you to use the concepts learned in lectures. Thus, get used to read the textbook, slides, and class notes and to review my program examples before the labs in order to be well prepared to complete the assignments on time. If you have concerns or specific questions, post them on the Discussion Board of Blackboard.

Don't forget to include at the top of the program the comments shown below with your information (name, class and section number, etc.)

```
//////////////////////////////////////////////////////////////////////
//
// Name: <Put your name here>
// Date: <Today's date>
// Class: <Your class number and section number, like: CSCI 1470.02>
// Semester: <This semester, like: Fall 2020>
// CSCI/CMPE 1470 Instructor: <Your lecture instructor's name>
//
// Program Name: Length converter
// Program Description:
//
//////////////////////////////////////////////////////////////////////
```

When done, submit your solution through Blackboard using the "Assignments" tool. Do Not email it.

Paste the link to your solution and the source code in the textbox corresponding to Text Submission (click on the Write Submission button) before you click on Submit.

The following is the basic criteria to be used to grade your submission:

You start with 100 points and then lose points as you don't do something that is required.

-10: Wrong variable names
-10: Wrong variable types
-5: No comments or too few comments in source code
-10: Wrong input format
-10: Wrong output format (missing blank lines for example)
-10: Mixed data types in expression
-20: Program does not implement the algorithm provided
-20: Incorrect/missing source code
-20: Incorrect/missing link to your Repl.it solution
-50: Program does not compile
-100: The code submitted is not your creation (you got it from a web site or another person)
-10: Late

Important: more points may be lost for other reasons not specified here.