CSE 2010 Fall 2022

Lab 1: Part B (Wednesday August 24)
Compiling and Running a C++ Program (15 points)
Due: End of lab Wednesday August 24.

Learning Objectives:

- Write, compile, and run a simple C++ program using the Linux terminal.
- Get familiar with the program submission process.

Preparation

To complete this lab, you will need to log into one of the Linux computers. Use your Coyote ID and password to log into a workstation.

Create, Compile, Run!

Once you are logged in, open up the Terminal and navigate into your Lab01 directory that you created in Lab 1 Part A. (Hint: use the cd command)

Now let's create our C++ source file. C++ source files must end with an extension that allows the compiler to know that the file is a C++ source file. Common extensions are: ".cpp", ".cc", ".C", ". c++". For this class, we will stick with the ".cpp" extension.

In your Lab01 directory, create a file named Hello.cpp using the following command:
 vi Hello.cpp

In the Vi text editor, carefully type out the following code (remember to select the "i" key to go into insert mode):

```
/*
  Name: [YOUR NAME]
  File Name: Hello.cpp
  Program: This program will display a hello message
  Date: [TODAY'S DATE]

*/

#include <iostream>
using namespace std;

int main()
{

 string name = "World";

 int year = 1993;

 cout << "Hello " << name << "! Welcome to CSE 2010!";

 cout << "It is the year " << year;
 return 0;
}
```

Save your program and quit Vi by selecting the **ESC** key and typing:

:wq

You should now be back at the terminal window. Use the command *ls* to confirm that *Hello.cpp* has been created.

In the terminal window, type:

g++ Hello.cpp –o Hello

This command invokes the g++ compiler, which will compile the program *Hello.cpp* and create an executable form of it called *Hello*.

If the compiler runs and catches any syntax errors, they will appear on the screen. It's ok, just open up your file again, fix them, save, and try to compile again.

If the compiler runs and catches no errors, nothing will appear on the screen. This is good!

Use the command *ls* to confirm that you now have files *Hello.cpp* and *Hello*. Note the difference in appearance.

Run the program with the command:

./Hello

The program should print out the not so nice, and not so accurate, looking message:

Hello World! Welcome to CSE 2010!It is the year 1993

The output might be surprising considering that you have two cout statements on separate lines. But remember we have to add special characters to get new lines.

Edit the program so that it outputs your name by updating the value of the string name variable.
To edit, re-open the file using

vi Hello.cpp

Next, modify the code so that the program **prompts/asks** the user what year it is, and store the user input into the int year variable. You can do this win a cin statement.

The desired output should be similar to (with the new lines):

Hello [YOUR NAME]!
Welcome to CSE 2010!
What year is it?
It is the year [CURRENT YEAR]

Save & quit, compile in the terminal using the above g++ command, and then run the program with *./Hello*

Note: After every edit you make to a source file, you MUST compile in order for the changes to take effect in program running

To receive credit for this lab, take a screenshot of the terminal window. Remember to take a screenshot of just the terminal window, it is "Fn+Alt+Print Screen" on the keyboard. The screenshot should include the following:

- Your g++ command showing that the program compiled with no errors
  Example Screenshot:

Finally, log on to Canvas. And under "Lab Assignments > Lab 01 Part B", submit the following:

- The screenshot of your terminal window.
- Hello.cpp file