LW: Debugging Practice

A "complete" grade on this lab work requires a score of at least 90%.

Complete the following task for this week's labwork. The task assumes that you are running the g++ compiler in a terminal window.

# Task. Syntax Error Debugging

The purpose of this task is to better familiarize you with reading and correctly diagnosing compiler error messages on the command line, which is one way to debug syntax errors. You will be debugging a program that calculates exponential values.

1. Go to Mimir and download the starter code that contains the C++ file called **syntax\_debugging.cpp** on your computer. **Do not edit the file yet.**
2. Open your terminal window and navigate to your C++ file.
3. Type the following command in the terminal to compile your file.  
    g++ -std=c++17 -Wall -Wextra -pedantic -Weffc++ **syntax\_debugging**.cpp
4. When you compile your file, you will receive compiler error messages. Go to the first compiler error message.
5. Manually copy the text from the first compiler error message starting from the word "**error:**" to the end of this compiler error message's sentence. For example, if the text of your compiler error messages looks like below, then copy the bolded parts only from "**error:**" to the end of the sentence.  
    fatal **error: *something: Some sort of error***
6. Open **syntax\_debugging.cpp**, and navigate to the function called:  
    void printCompilerErrors()
7. Inside this function, add the following new line, where you replace the red text with the copied text from the compiler error messages:  
    cout << "error: something: Some sort of error" << endl;
   1. Note: replace ‘ and ’ (fancy single quotes) with ' (plain single quote)
   2. Note: escape '\' by using '\\'
   3. Note: fix the “does not name a type” error with a using declaration (e.g. using std::cout;)
8. From the information in the compiler error messages, fix **only** the first error.
9. Type the following command in the terminal to clear the previous error messages.

clear

1. Repeat Steps 3 through 9 until there are no more compiler error messages.
   1. You should find and fix 10, in total.
2. Submit **syntax\_debugging.cpp** to Mimir. This task will be graded by the correctness of your **cout** statements.

# Appendix: Mimir IDE for Mac and Linux Users

If you are using a Mac or a Linux machine to do the coding assignments for this class, then you must use the Mimir IDE to complete this labwork with the correct ordering and text of the compiler error messages. See below for instructions on accessing and using the Mimir IDE for coding this labwork. (Thank you Hongyu Shen for discovering this solution.)

1. Go to the "[LW] Debugging Practice" page on Mimir.
2. On the page under Actions, click the "Open in Mimir IDE" button. It will take you to a new webpage that will show the labwork's starter code.
3. In the Mimir IDE, you will see three panels: the file navigation panel (left), the coding panel (middle), and the terminal panel (right). Click the file navigation panel and navigate through the following directory contents:
   1. csce\_121\_\_fall\_2020
   2. lw\_debugging\_practice
   3. syntax\_debugging.cpp
4. Click the .cpp file to open the starter code.
5. Follow the instructions in "Task. Syntax Error Debugging" on the previous page. When copying the error messages in Mimir's IDE terminal panel, make sure that you highlight the error messages, right-click the highlighted text, and then click the copy option.