CSCI 200 - Fall 2023
Foundational Programming Concepts & Design

Lab 0 - VS Code Setup

This lab is due by Tuesday, August 22, 2023, 11:59 PM.
As with all labs you may, and are encouraged, to pair program a solution to this lab. If you choose to pair program a solution, be sure that you individually understand how to generate the correct solution.

VS Code Setup

First, why is this lab zero instead of lab one? Because computer scientists always start with zero! (This will become more evident later in the semester ... there's a reason why we do it!)

Before you begin working on any programming project, you must set up some kind of "workspace" on your computer. Software engineers call this "setting up your development environment". For this class, you will need only two things: a compiler and a text editor or IDE. Our compiler will be g++ and our editor will be VS Code.

You may use any of the campus lab machines or you may setup your personal machine. If you plan to primarily use the campus lab machines, then skip to Part II. Otherwise, to continue with your personal machine go to Part I.

Part I - Setup your Personal Computer (Recommended)

RMP-H

If you want to set up your own computer, then you will need to make sure you have a compiler installed. The compiler will depend on your operating system:

- **Windows**: Download and install **MinGW** (this package is setup with additional dependencies for use within the course). Unzip the file and place the contents at C:\mingw64. Additionally, we will want to have the MinGW folder on your path to be able to execute programs from later. In the Windows start menu, search for `Edit system environment variables` and in the resultant window press `Environment variables`. Select `Path` from the bottom system box and hit `Edit`. Hit `New` and enter `C:\mingw64\mingw64\bin` (or potentially `C:\mingw64\bin` - verify where `mingw64/bin` was unzipped to). Hit `OK` then `OK`.
  - **Note:** If you install MinGW from a different source that is not the above link, you will also want to install `sed` in order for all the course tools to work as desired. On the **sed for Windows webpage**, download the `Binaries Zip` and the `Dependencies zip`. Extract both. From the `Binaries` package, copy the `bin/sed.exe` file into your `mingw64/bin` folder. From the `Dependencies` package, copy the `bin/*.dll` files into your `mingw64/bin` folder as well.
- **Mac**: Install the XCode Command Line Tools. This is a decent **tutorial** a to walk you through the steps. Be sure to follow the instructions for the "triggered by a command" option, not the full XCode or Homebrew setups.
- **Linux**: I trust you know what you're doing with your OS, but you should be good to go.

Then, regardless of OS, install **VS Code**. Be sure to choose the version that matches your system.

- **Windows**: Select the System Installer.
- **Mac**: If you have a newer M1/M2 Mac, then select the Apple Silicon zip.
- **Linux**: Select the appropriate format.

Regardless of OS, once VS Code is installed and opened you will want to install the **C/C++ Extension Pack** from the Extension Marketplace (see the left hand menu). This extension will install Intellisense and other helpful tools. This will help with syntax coloring, code completion, and other realtime editing tools.

Part II - Test Your Setup

We will fully test your setup soon, with **Lab1A**. To verify everything is setup at this point, open VS Code. From the top menu, select Terminal > New Terminal. In the bottom window that opens, type `g++ --version` and hit enter. You should see a copyright notice and version information printed to the terminal. If there is a message saying `g++ does not exist`, then

there was an error with setup. Verify the steps above were completed. If additional help is needed, then please post online.

To complete this lab, go to Canvas > Assignments and complete the Lab0 Survey.

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Any questions, comments, corrections, or request for use please contact jpaone {at} mines {dot} edu.

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