CS 111 - Week 8 Lab Exercise - 2024-10-18

Deadline

Due by the end of lab.

How to submit

Submit your resulting files **`lab8.cpp`** and **`lab8-out.txt`** on course Canvas site.

Purpose

- To make sure you have a GitHub account (and to let me know its username)
- To make sure you can use that GitHub account to access the VS Code for CS50 browser-based IDE
- To give you practice creating, compiling, and running a C++ program using this IDE

Important notes

- This is a rare non-pair-programming lab exercise, but you are still encouraged to help one another as you are working through it.
- Be sure to **TYPE IN** all the pieces requested in the **`lab8.cpp`** file!

PART 1 - C++ environment set-up - GitHub account

- We are going to use a cloud-based programming environment from Harvard University, the VS Code for CS50 integrated development environment (IDE), that supports C++ as well as quite a few other languages! It is located at:

  https://cs50.dev/

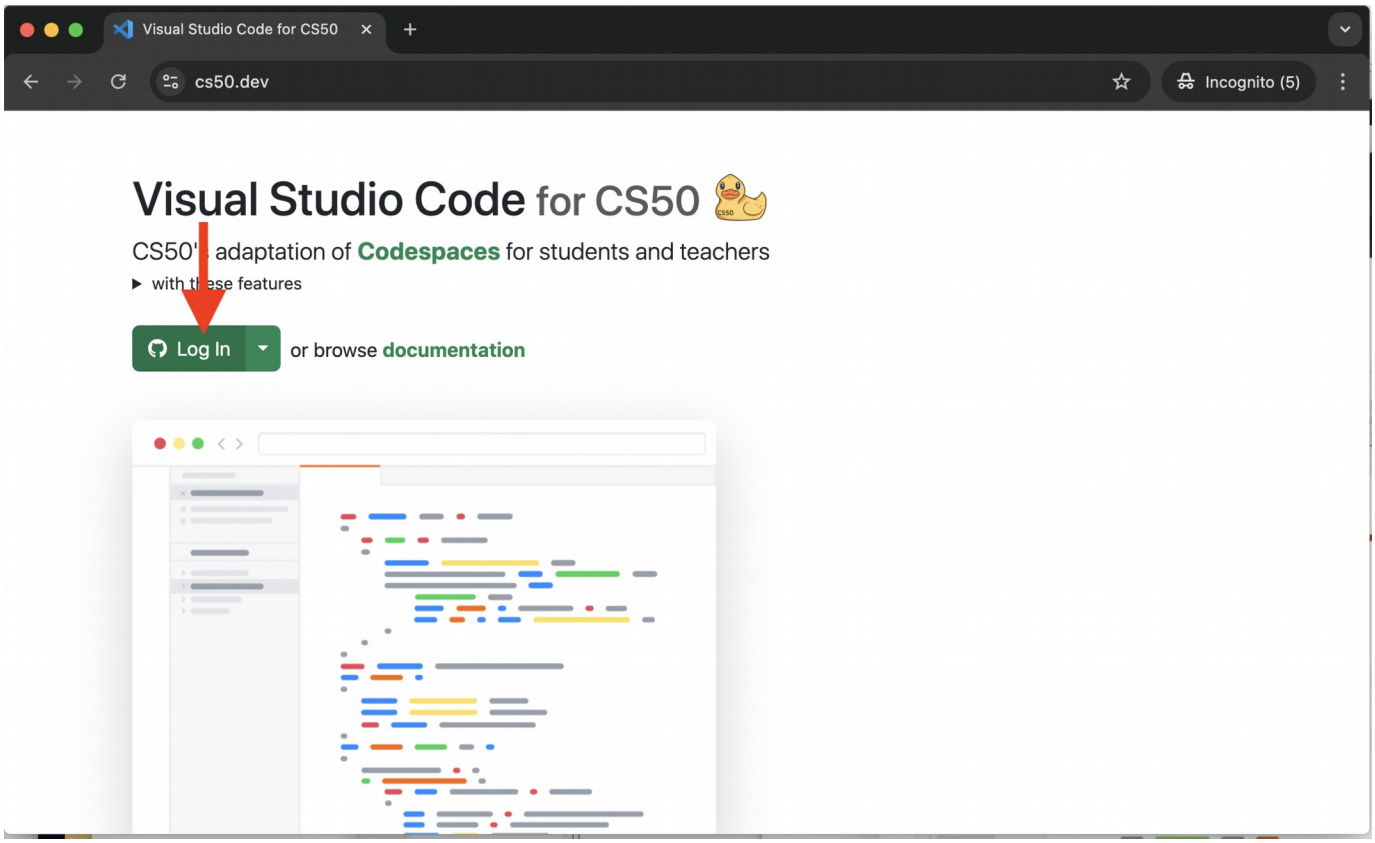
  - This IDE is free to use, but you do need a (free!) GitHub account to sign in and use it.
  - **Do you already HAVE a GitHub account?** Then complete Part 1 of this lab exercise by entering your **GitHub username** where it is asked for in **Part 3**'s file **`lab8.cpp`**.
  - **Do you NOT have a GitHub account yet?** (Or would you like to set up a "school" GitHub account separate from your personal one?) Then sign up for one at:

    https://github.com/signup

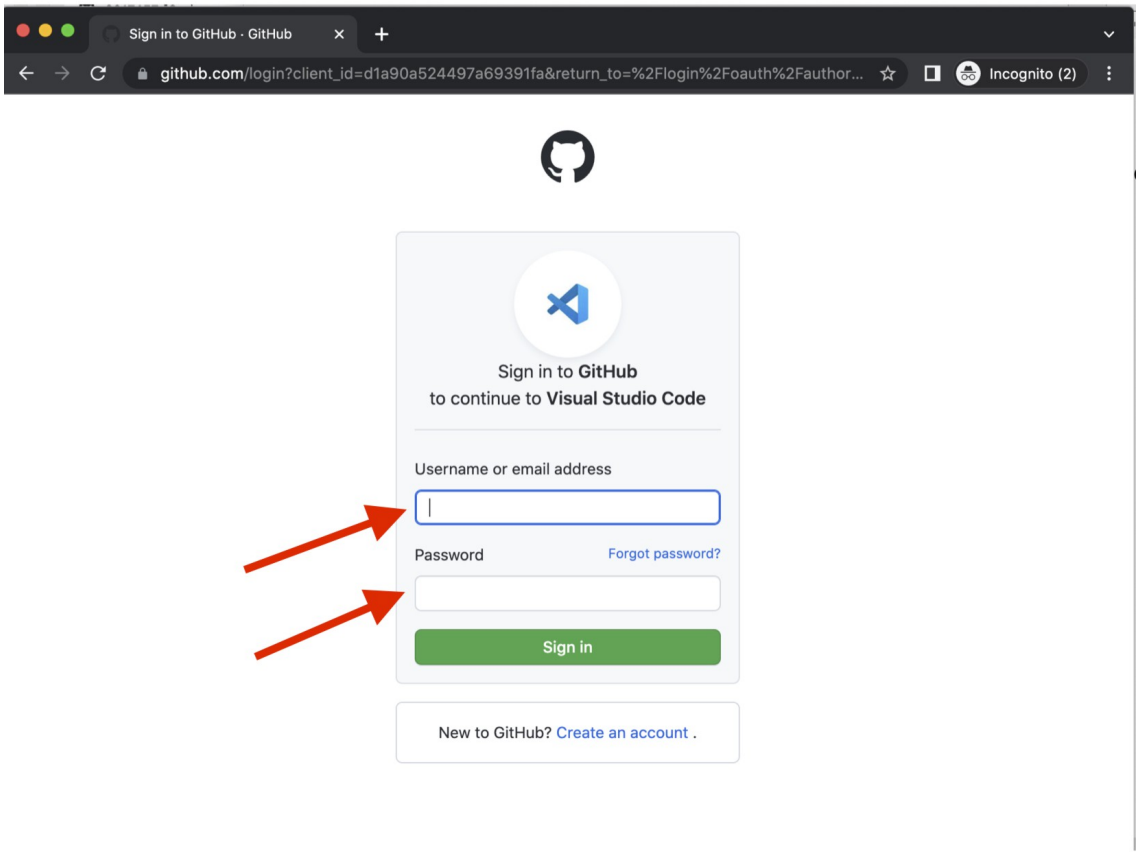
    - Enter your e-mail where indicated, and follow the prompts from there.
  - and, now you, too, can complete Part 1 of this lab exercise by entering your **GitHub username** where it is asked for in **Part 3**'s file **`lab8.cpp`**.

PART 2 - C++ environment set-up - Try Logging into VS Code for CS50:

- **THEN**: try logging into VS Code for CS50:
  - Go to https://cs50.dev/
  - Click the green "Log In" button near the top of the screen:



...and then login into your GitHub account and authorize the CS50 VS Code IDE if prompted:



  - Once you log in, you will automatically be forwarded to VS Code for CS50 IDE! Hereafter, you may simply return to https://cs50.dev/ to log in and return to VS Code for CS50, where all your files and settings are preserved.

- Now, you can complete the logged-into-VS-Code-for-CS50 part of today's lab by entering, in **Part 3**'s file **`lab8.cpp`**, your answer to the question,

  "Have I successfully logged into the CS50 IDE?"

PART 3 - DEMO that you can successfully modify, compile, and run a C++ program using the VS Code for CS50 IDE

- Copy **`lab8.cpp`** into VS Code for CS50
  - Create this file, open it so it appears in the **top** window, and paste in the provided code.
  - PUT your GitHub username in the opening comment where it is asked for.
  - ANSWER the CS50 IDE log-in question in the opening comment where it is asked for.
  - FIND the two places that say to put your name, ONCE in the opening comment and ONCE within this program's `main` function, and **replace** those with your name.
  - (IF you'd like: enter an expression of your choice where indicated in the `main` function.)
  - Be sure to **SAVE** your modified file!
- In a Terminal in the **lower** window, compile, link, and load this program typing the command:

  `g++ lab8.cpp -o lab8`
  - If you made a folder and then created **`lab8.cpp`** inside that folder, **right-click** on the folder's name on the left and select the option "Open in Integrated Terminal" FROM this folder.
- If the previous command succeeded (no error messages, and you now see a file **`lab8`** in the list of files on the left), then in that same Terminal in the lower window, run your program by typing:

  `./lab8`

  ...and hopefully you see the expected results!
- In the Terminal, you can **redirect** the output of a command to a file by following that command with:

  > *desired_file_name*
  - So, create an example output from running your program to submit to Canvas by running the following command in the CS50 IDE Terminal (open in the folder with your program in it!):

    `./lab8 > lab8-out.txt`
- When you are done, **before** you leave lab, download a copy of your resulting versions of **`lab8.cpp`** and **`lab8-out.txt`** from the CS50 IDE.
  - You can download a file from the CS50 IDE by right-clicking on its name in the file Explorer on the left-hand-side of the IDE, and selecting "Download".
- Submit to Canvas this lab exercise's resulting files **`lab8.cpp`** and **`lab8-out.txt`**.