Software Dev. & Problem Solving I — GCIS-123

More Git & Environment Variables — Homework 1.3

Goals of the Assignment

- If necessary, you will install the latest version of the Python programming language on your computer so that you can use it for your in-class activities and homework assignments beginning in the next unit!
- You will install the VS Code integrated development environment (IDE) that will be used in all of the programming examples and activities in this course. You are not *required* to use VS Code for your coursework, but it is strongly encouraged.
- Errors are an inevitable part of software engineering, and you will sometimes need to ask for help in diagnosing and repairing the errors that you encounter. You will practice taking and saving screenshots, which can be of use when asking for help.
- You will continue to practice version control with Git, including restoring deleted files.
- You will continue to practice using the command line to create files, list files, change directories, and so on.

Tips for Success

- ***Do not procrastinate***. You will likely find that completing assignments goes more quickly when the material is fresh in your mind.
- ***Read the entire assignment carefully*** before seeking help from the course staff!
- Spend a few minutes skimming the lecture slides before attempting any of the problems in this assignment.
- Keep the slides open in a browser so that you can quickly and easily refer back to them. If you get stuck on any of the problems in this assignment, find the matching slides or activities from the lecture!
- Making and overcoming mistakes is expected and a great learning experience! You will learn more and retain the information better if you take a few minutes to try to find the answers to your own questions before asking for help. The lecture slides are a great resource and contain everything that you need to complete this assignment!
- Don't forget that you can post questions that you may have to the assignment channel on the course Discord server and/or ask an on-duty Course Assistant for help during their scheduled mentoring hours.

Activities

1. If you are working on a computer that is different from the one that you used in class, you will need to clone your repository onto the new computer:

    a. Open the repository in your browser (if you need to, you can find it by clicking the original GitHub Classroom Invitation again).

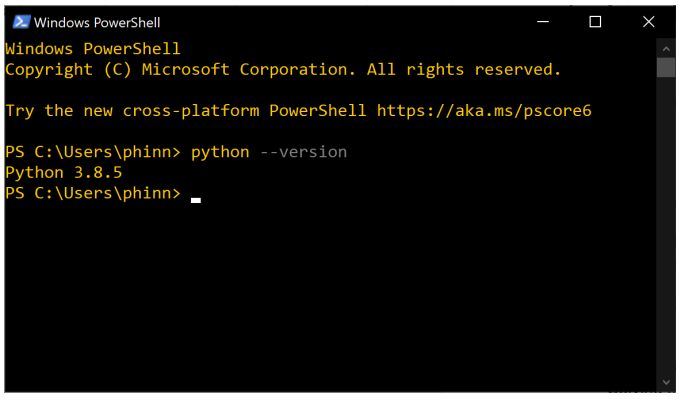
    a. Create a directory in your user directory: `SoftDevI\Unit01\`

    b. Change into the directory and use `git clone` with your repository URL to download the repository to your new computer.

2. Download and save this PDF file in the repository.

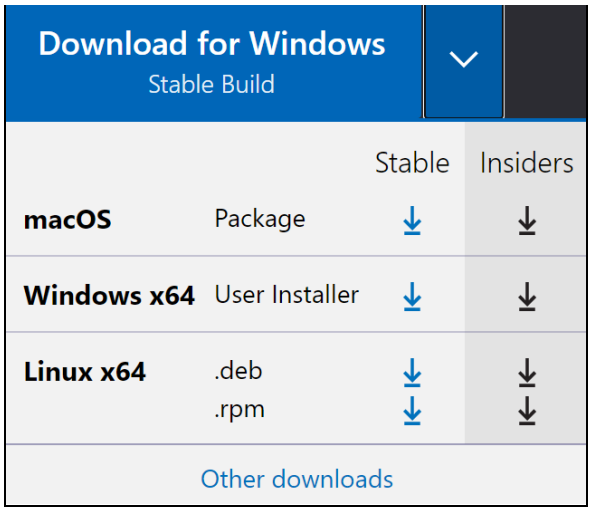
3. Python is a high-level, modern programming language, and we will be using it throughout the remainder of this first course in the Software Development & Problem Solving sequence. You can download an installer for your operating system at https://www.python.org. Hover your mouse over the Downloads button and a link to download the specific version for your OS should appear. Do not worry about the specific version as long as it is a version of Python 3.

4. Once you have installed Python, launch a command prompt and execute the `python --version` command. Do not worry if the command does not appear to work! For now, just take a screenshot of the output (e.g. *Alt-Print Screen* and paste into *Paint 3D*) and save it to your repository. Practice the Git workflow (`status`, `add`, `commit`, `push`) and push it to GitHub.

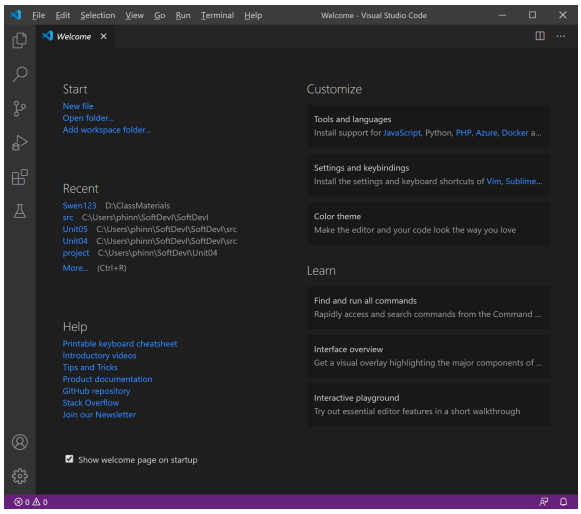


5. From the command line, display your system path environment variable. Take a screenshot, save it to your repository, and push it to GitHub.

6. Visual Studio Code (*VS Code* or just *Code* for short) is the *integrated development environment* (*IDE*) that we will be using this semester. While you are not strictly required to use VS Code to create and edit your source code, all code examples, lecture materials, and in class demonstrations will use VS Code. You can download it from https://code.visualstudio.com. You should see a prominent download link on the site for your operating system, but you can click the arrow and select the stable build for a different OS if you prefer.



7. Once you have installed VS Code, run it and take a screenshot. Save it to your repository and practice the Git workflow to push it to GitHub.



8. Launch a command prompt and navigate to your repository. Run a Git log and redirect the output to a text file named `git_log01.txt`. Push the file to your repository.

9. From your repository:
    a. Use your `git_log01.txt` file to find the latest commit hash.

    b. List the files in the top level directory in the repository.
    c. Delete one of your files, e.g. one of your screenshots.
    d. List the files again to show that the file is now missing.
    e. Use `git` to restore the file using the commit hash.
    f. List the files again.
    g. Take a screenshot that shows at least the listing before and after the restore and save it to your repository. Push it to GitHub.

10. Use your favorite search engine to search for quotes from your favorite movie, e.g. "*Terminator movie quotes*". Create a new text file named "`quotes.txt`" and type or copy/paste 2 or 3 quotes into it. Push it to GitHub.

11. Open your `quotes.txt` file and add yet another unique quote to the top of the file.
    a. Add, commit, and push your repository.
    b. If necessary, open your repository on GitHub and display the history of the quotes.txt file.
    c. Take a screenshot of the history and save it to your repository. Push it to GitHub.

12. Finally, use your browser to open your repository and view the commit history. Take a screenshot, save it to your local repository, and push it to GitHub.

Submission Instructions & Grading

Be sure that you have committed all of your solution files to your repository ***before*** the start of the next class. Your grader will verify that you finished your solution before the deadline.

See the course syllabus for the rubric that is used for grading homework assignments.