CSE 210 – Programming with Classes notes

File and Folder Organization

When you separate your code into different files, you should put all the code that relates to a certain concept or idea together. This is part of abstraction.

* Benefits: (1) Makes it easy to navigate. (2) Helpful when multiple people are developing the program together.

The File System

All data in computers is stored in a file system. Hierarchical structure of folders and files. Folders can contain multiple files and other folders.

Files and folders can be browsed on the computer by using a graphical file browser or by using a command line terminal.

Moving around in the File System

When using a command line terminal, you’ll be currently “in” a particular directory or folder (a current working directory).

pwd (print working directory) – a command used to see the current directory.

cd (change directories) – use this command followed by the name of the directory to change to.

Accessing Files and Folders

Absolute path – eg. /home/brigham/picture/family.jpg

Relative path – eg. ../picture/family.jpg

Version Control System (VCS) and Git

Tracks the history of changes as people and teams collaborate on projects together. It finds out which changes were made, by who, when, and why they were needed. This helps team members stay aligned while working independently on a project.

Git is the most popular distributed version control system (DVCS). With Git, collaboration can happen any time while maintaining source code integrity.

Repositories

Encompasses the entire collection of files and folders associated with a project, along with each file's revision history.

Git and Github

GitHub hosts Git repositories and provides developers with tools to ship better code through command line features, issues (threaded discussions), pull requests, code review, or the use of a collection of free and for-purchase apps in the GitHub Marketplace.

Basic Git commands

git init – initializes a brand-new Git repository and begins tracking an existing directory. Adds a hidden subfolder within the existing directory.

git clone – creates a local copy of a project that already exists remotely.

git add – stages a change. Git tracks changes to a developer's codebase, but it's necessary to stage and take a snapshot of the changes to include them in the project's history.

git commit – saves the snapshot to the project history and completes the change-tracking process.

git status – shows the status of changes as untracked, modified, or staged.

git merge – merges lines of development together. Typically used to combine changes made on two distinct branches.

git pull – updates the local line of development with updates from its remove counterpart.

git push – updates the remove repository with any commits made locally to the branch.