cd Desktop/CS50-Web-Programming/Lecture0--Git

**Git**

Version control software

* Keep track of different versions and modifications of our code
* Collaborate with different people
* Synchronizes code between different people
* Test changes to code without losing the original code
* Revert back to old versions of code

**GitHub**

GitHub is a code hosting/sharing platform for version control and collaboration. It lets you and others work together on projects from anywhere.

It’s like Facebook but for programmers.

**Git** is a version control system that lets you manage and keep track of your source code history. **GitHub** is a cloud-based hosting service that lets you manage **Git** repositories on the internet. If you have open-source projects that use **Git**, then **GitHub** is designed to help you better manage them.

Repository is just a fancy word for a folder or project that has many different files of code that you are working on.

[Atom](https://atom.io/) is a free and open-source text and source code editor for macOS, Linux, and Microsoft Windows with support for plug-ins written in Node.js, and embedded Git Control, developed by GitHub. Atom is a desktop application built using web technologies.

git clone <url> git clone https://github.com/akoo1/Lecture0--Git.git

* downloads the GitHub repository (remote version of your code) onto your local computer. Creates a link between the local repo and the GitHub repo. It remembers the URL of the repo on Github, so you can interact with the local and remote repo through the terminal.

Changes not staged for commit:

(use "git add <file>..." to update what will be committed)

(use "git restore <file>..." to discard changes in working directory)

modified: .github/workflows/build.yaml

no changes added to commit (use "git add" and/or "git commit -a")

git add hello.html

* add files to a temporary area to be included in the next commit

git add -A or --all (adds everything)

git add \* (allows you specify a file extension, ex. git add\*.h, git add\*.cpp)

git commit -m “Added hello.html”

* get a snapshot of the current repo and save it with a message about the changes, so you can go back and find any particular change at any particular time.

Add: selecting items

Commit: putting items in the shopping cart

Push: buying

git status

* show the current status of the repo

git push

* pushes the code from our local computer to the repo on GitHub, after a commit

git pull

* pulls the code from the repo on GitHub to our local computer

**merge conflict** in pull command -- A **conflict** happens when two separate branches have made edits to the same line in a file, or when a file has been deleted in one branch but edited in the other. **Conflicts** will most likely happen when working in a team environment. There are many tools to help resolve **merge conflicts**.

<!DOCTYPE html>

<html>

<head>

<title>My Webpage!</title>

</head>

<body>

Your changes

<<<<<<< HEAD

Hello, world! Hello again! Hello a third time!

The name of the conflicting commit

=======

remote changes

Hello, world! Hello again! Hello Hello Hello!

>>>>>>> cc62b00446ce067ba906ca41b9c05c7997ec8b0c

</body>

</html>

git log

* shows the history of all the commits you have made (Type q to exit the program)

git reset

* when you mess up and want to go back to older version of the ocde

- git reset --hard <commit>

- git reset --hard origin/master