CS134:
Lab 01

Today's Plan

Tools & resources for doing CS Labs!

After this lesson, you should be able to:

1. Explain the difference between VS Code, Terminal, and python
2. Navigate your file structure with Terminal
3. Submit your lab assignments to be graded

Lab Deadlines

- Depend on your lab session day!

- Mondays —> Wednesday @10p
- Tuesdays —> Thursday @10p

Lab Instructions on Course Website!

- https://bit.ly/csi34f24

Labs

Lab assignments are due Wednesday 10 pm EST for students in Monday lab sections, and Thursday 10 pm EST for students in Tuesday lab sections. To request a 12-hour extension, please fill out this form *before* your lab's submission deadline.

Lab Date	Topic
Sept 09/10	Lab 1: Python/Git Workflow
Sept 16/17	Lab 2: Day of the Week
Sept 23/24	Lab 3: Madlibs
Sept 30/Oct 1	Lab 4: Voting
Oct 21/22	Lab 5: What's In A Name?
Oct 28/29	Lab 6: Thinking Recursively
Nov 4/5	Lab 7: AutoComplete
Nov 11/12	Lab 8: Boggle! [Part A] [Part B] [Graphics module]
Dec 2/3	Lab 9: Sorting

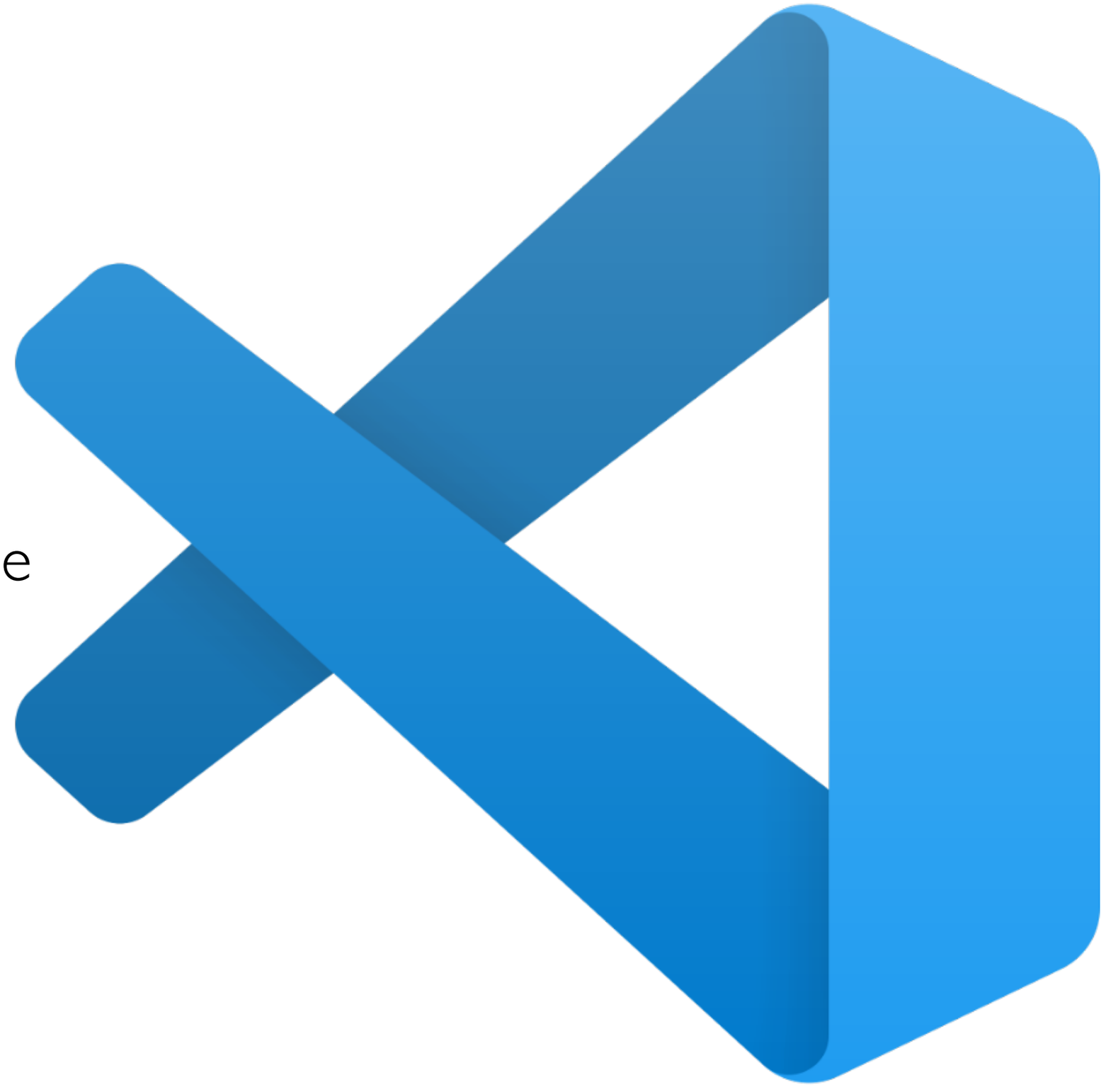
What do these 4 applications have in common?

Google Docs

What do these 4 applications have in common?

VS Code

Visual Studio Code



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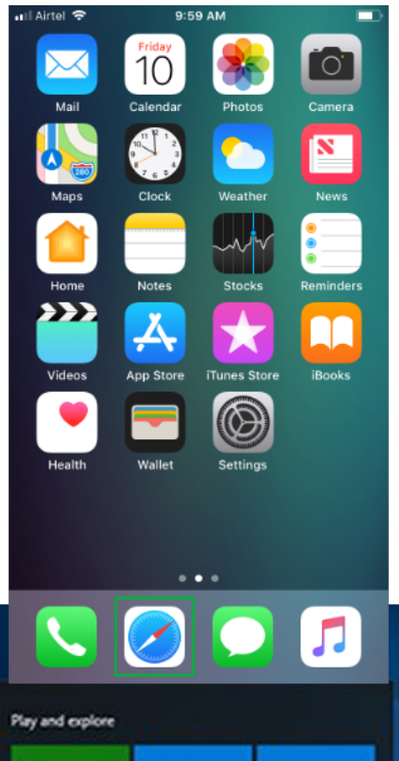
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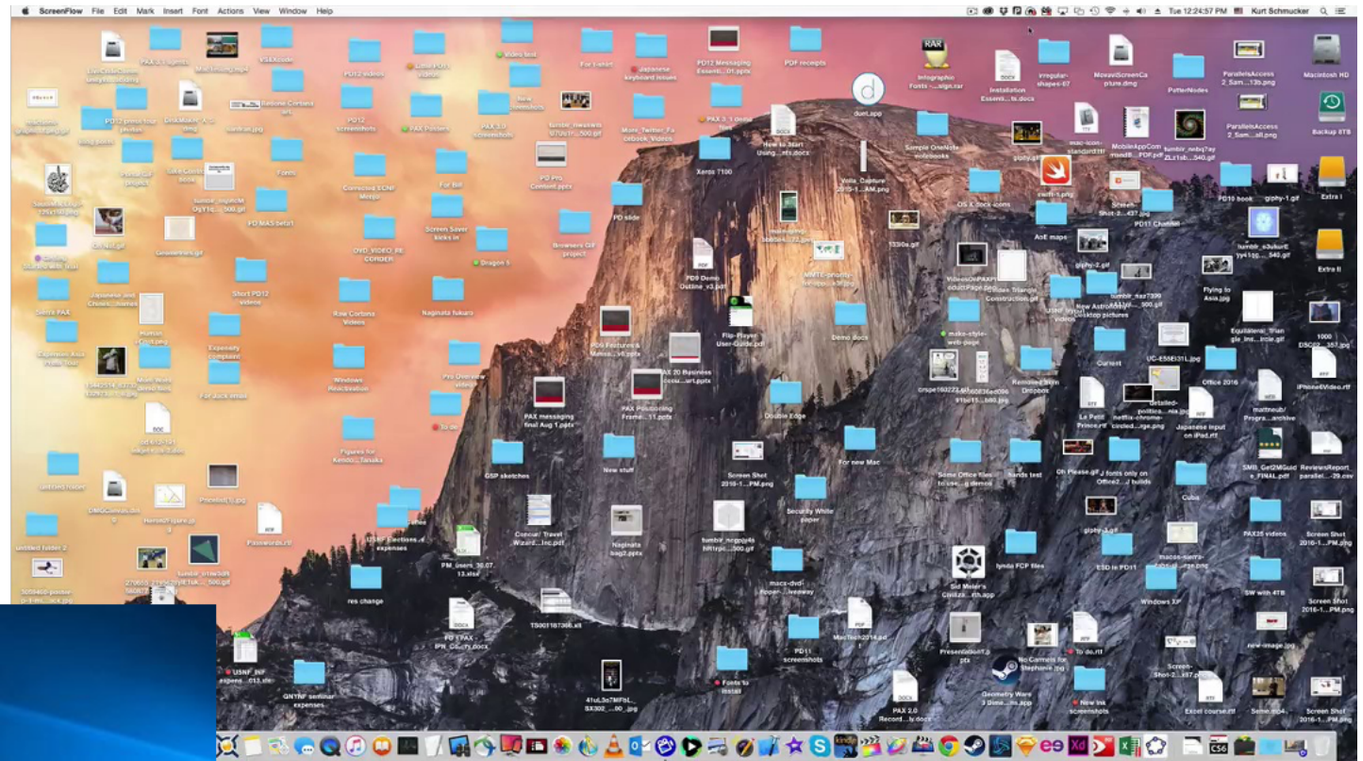
ScreenFlow File Edit Mark Insert Font Actions View Window Help
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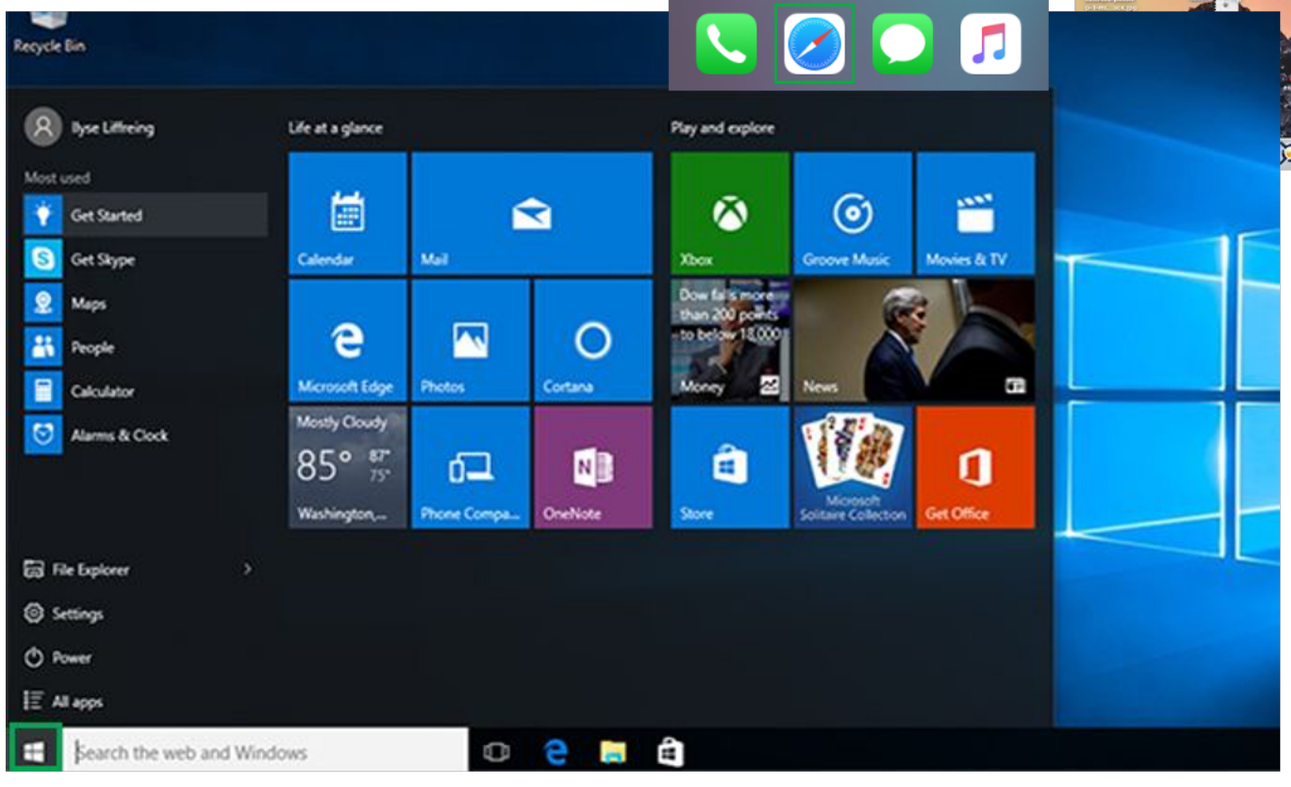
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Calculator
Alarms & Clock
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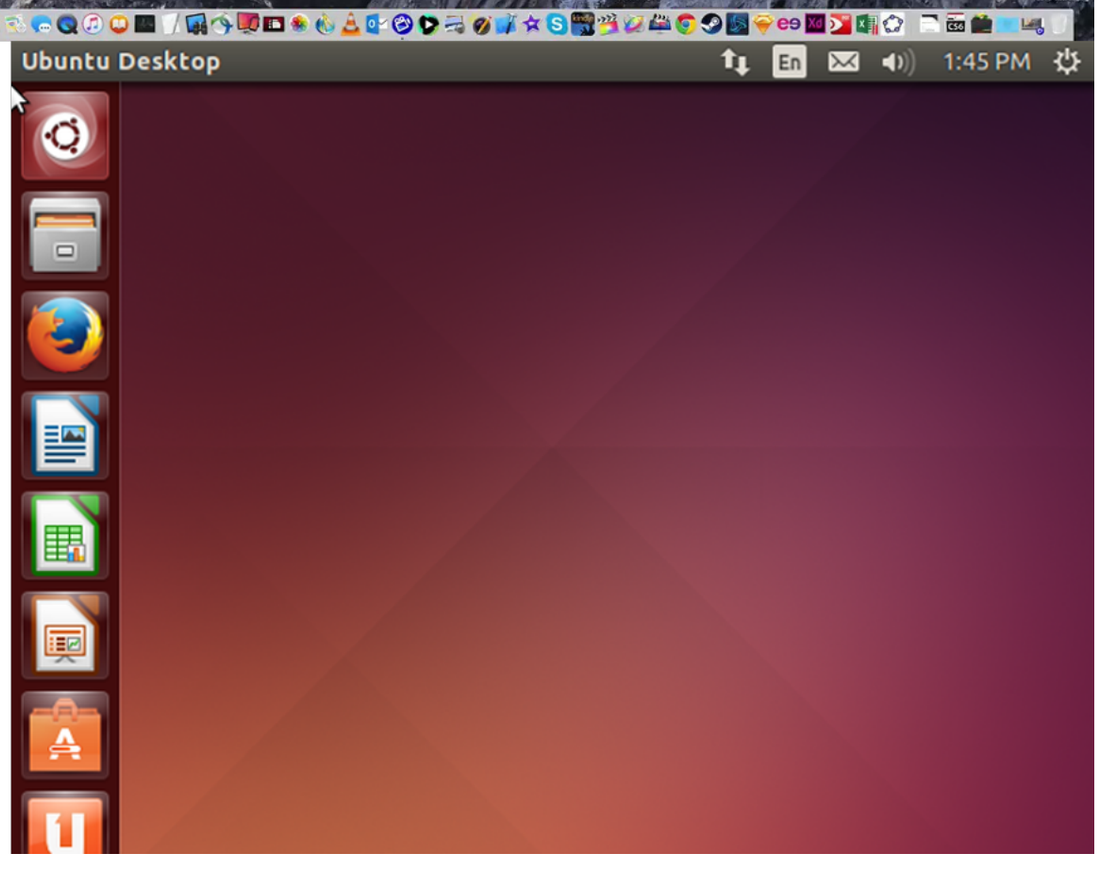
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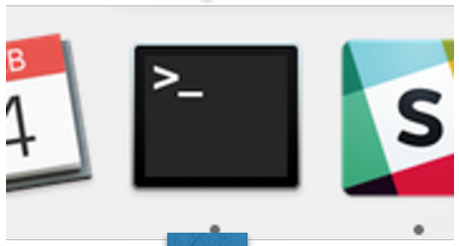
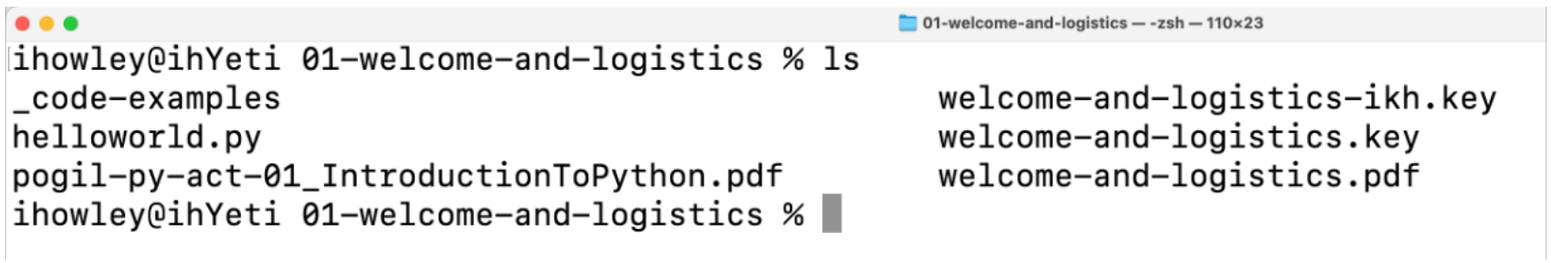
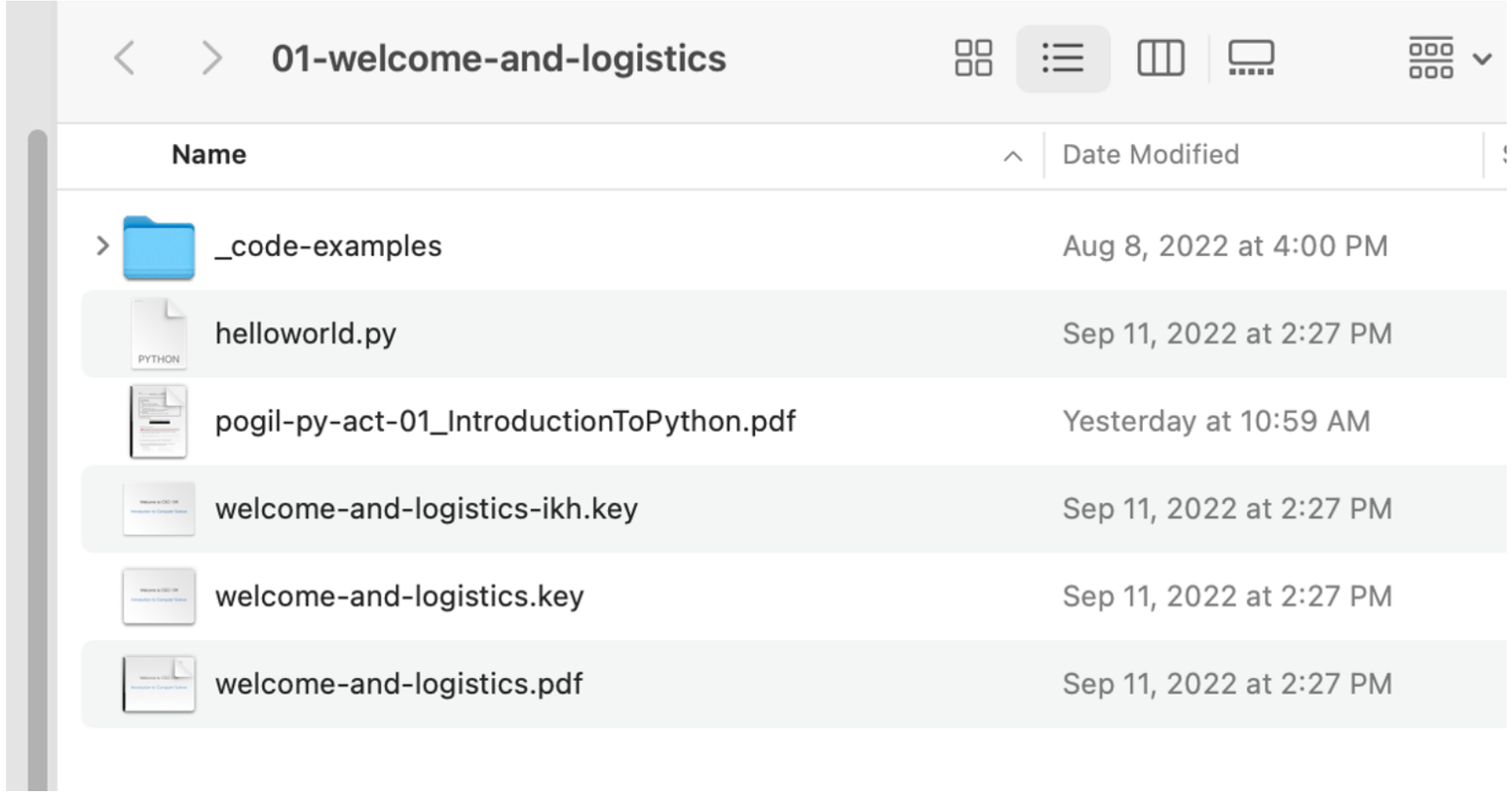
Terminal



Terminal vs. File Explorer

- Terminal is a text-based view of your **directory** structure
  - Like File or Explorer / Windows Explorer, but in text



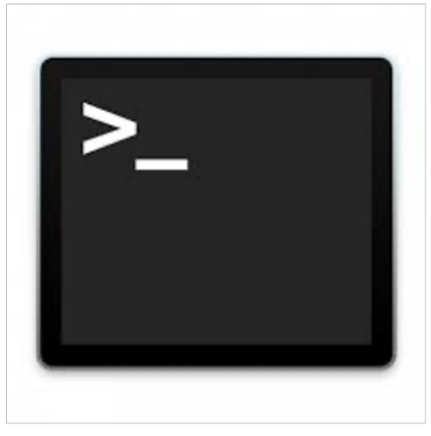


Python

- Written into a **script** and then interpreted by Python
  - `python3 hello.py`

- **Interactive** mode
  - `python3`
  - `>>> print(“hello!”)`

- Terminal & Python are two separate apps!



Terminal Keyboard Shortcuts

- Type a letter or two, then hit 

–> Tab Complete!

- 

—> Cycles through all previous Terminal commands!

Useful Keyboard Shortcuts

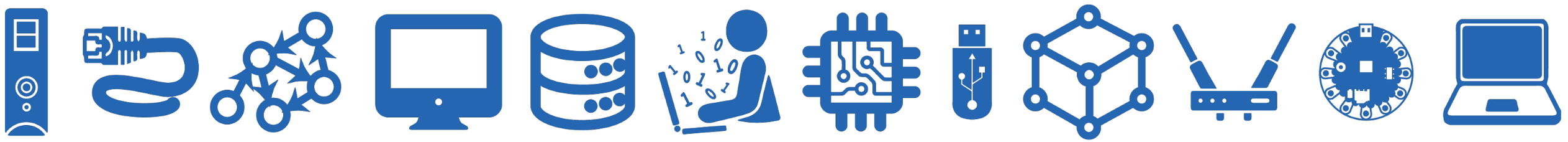
- ⌘ (command) + C → Copy
- ⌘ (command) + X → Cut
- ⌘ (command) + V → Paste
- ⌘ (command) + A → Select All
- ⌘ (command) + S → Save
- ⌘ (command) + R → Refresh
- ⌘ (command) + Z → Undo

- Ctrl+ A → First character of line
- Ctrl + E→ End of line
- Option +  → Right one word
- Option +  → Left one word

Useful Terminal/Unix Commands

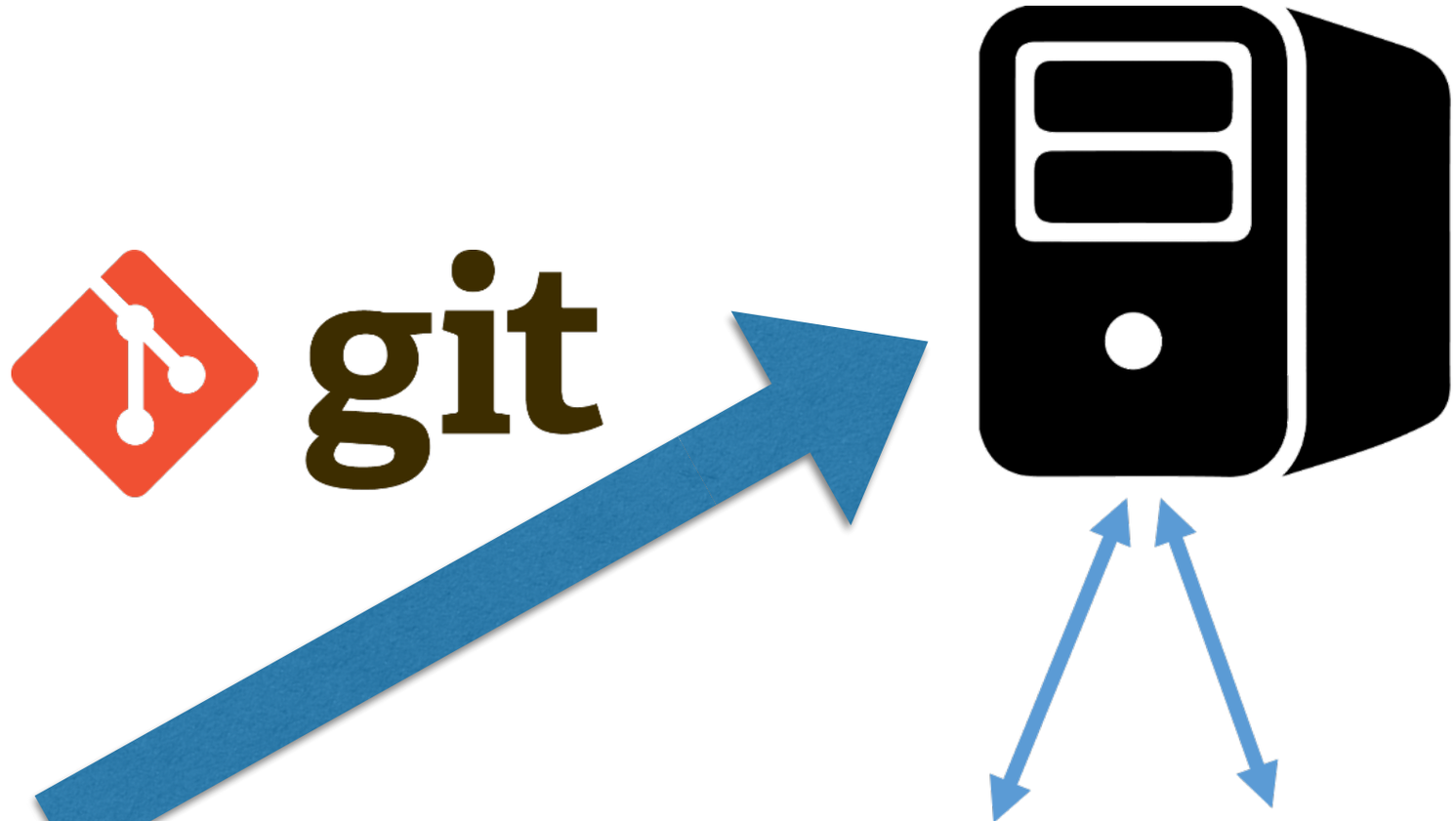
- `pwd` - print working directory
- `mkdir <dir name>` - make new directory (or folder)
- `cd <dir name>` - change directory (like moving into a folder)
- Special directory names in Unix
  - single dot, current directory
  - `..` two dots, parent directory
  - `~` tilde, home directory
- `cd ..` - takes you to the parent directory
- `cd` - takes you "home"
- `ls` - shows contents of current directory

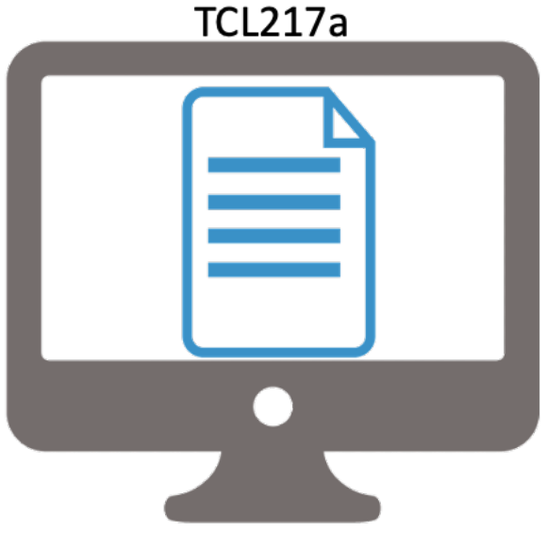
git



Working on Labs

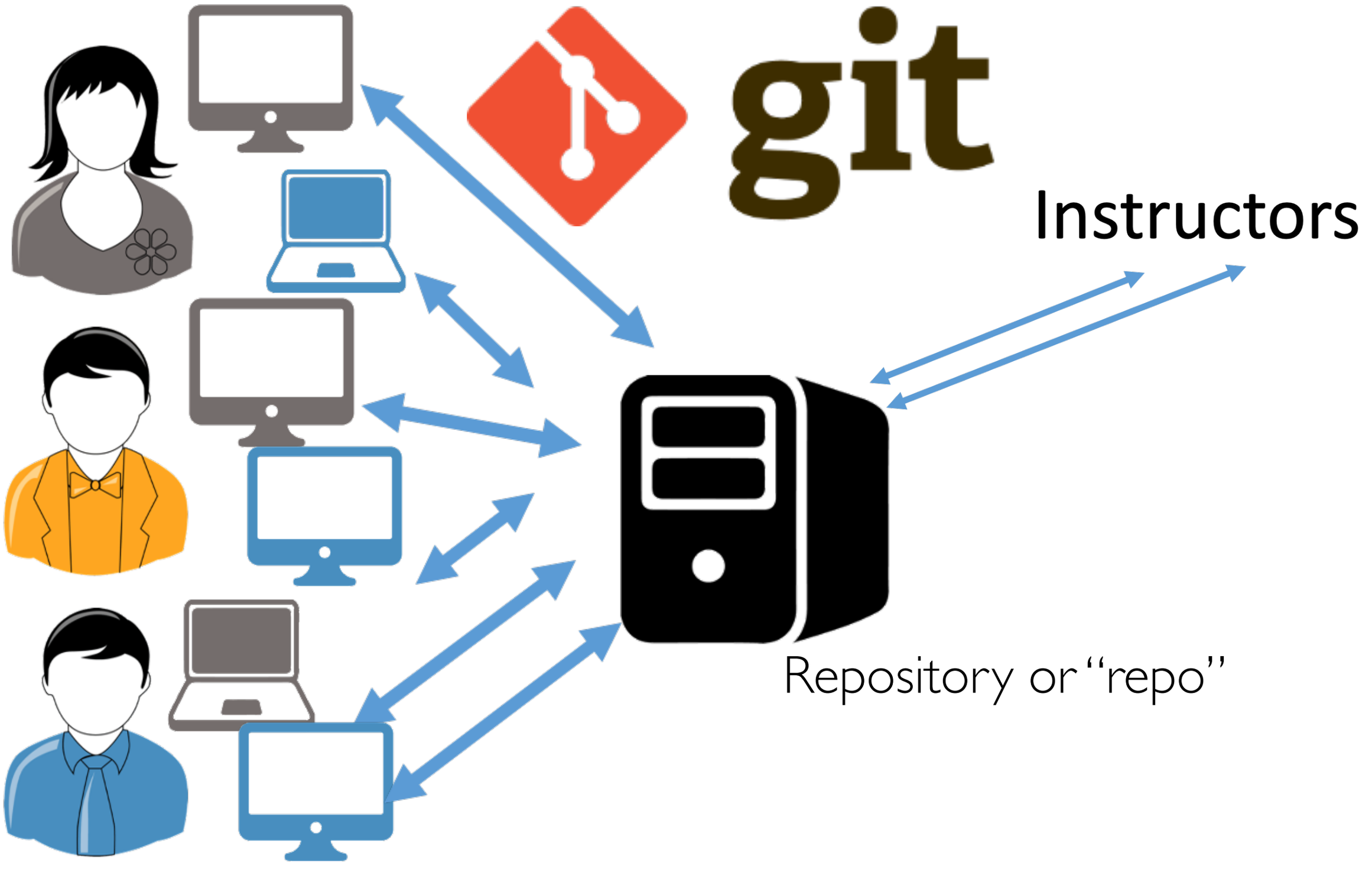
Repository or "repo"





Instructors

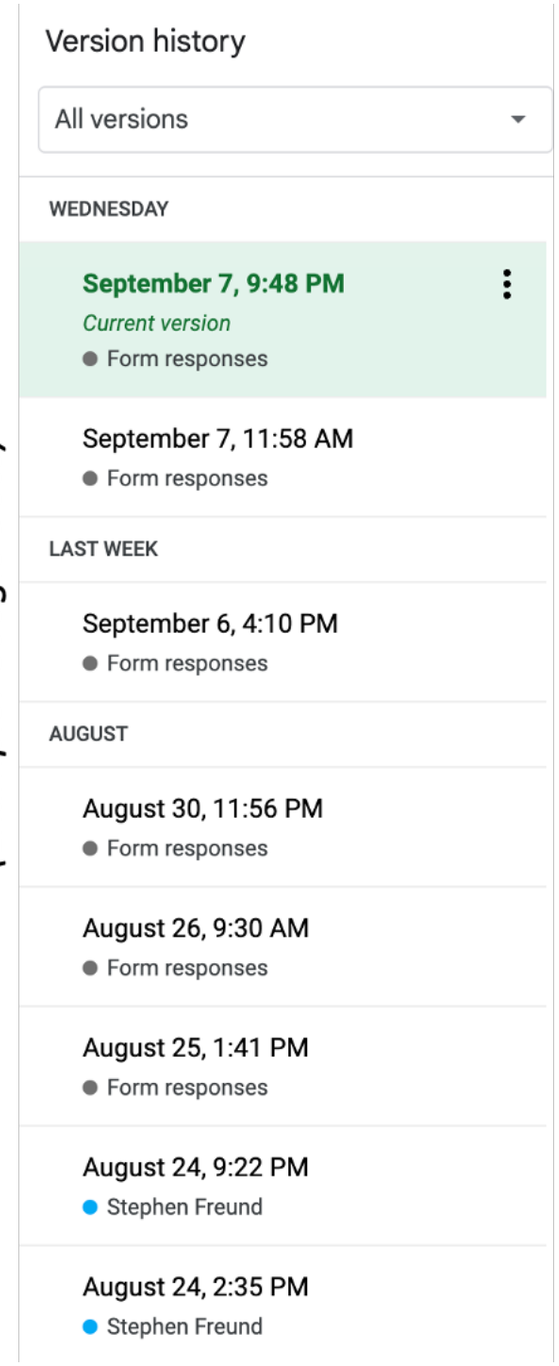
Working on Labs



Why git?!

- Version history!
- Access files from anywhere!
- Great for collaboration!
- Great for maintaining large code bases!

(Example: Google Docs)



`git`:: Get the starter code first

- Copying files —> "I need to get a copy of the lab files my instructor made."

```
git clone https://URL-here.git
```

`git`:: 3 Steps: `git add`

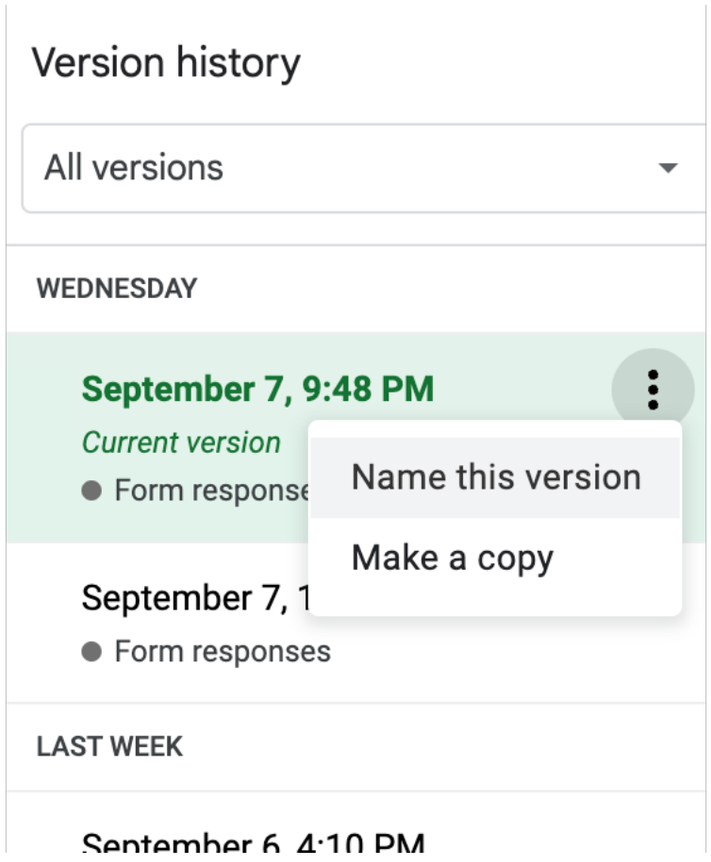
- Staging files —> “I edited this file, I want to include it in the next snapshot of my code .”

```
git add myfilename.py
```

`git`:: 3 Steps: `git commit -m`

- Committing files —> “Take a snapshot of my code that I’ve added so far and assign it a version number.”

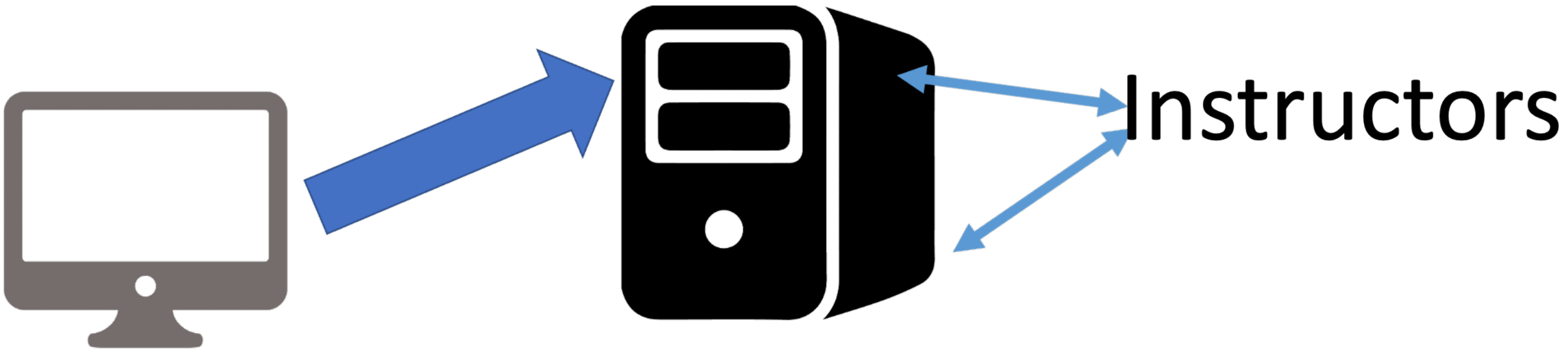
```
git commit -m “Message here”
```



`git`:: 3 Steps: `git push`

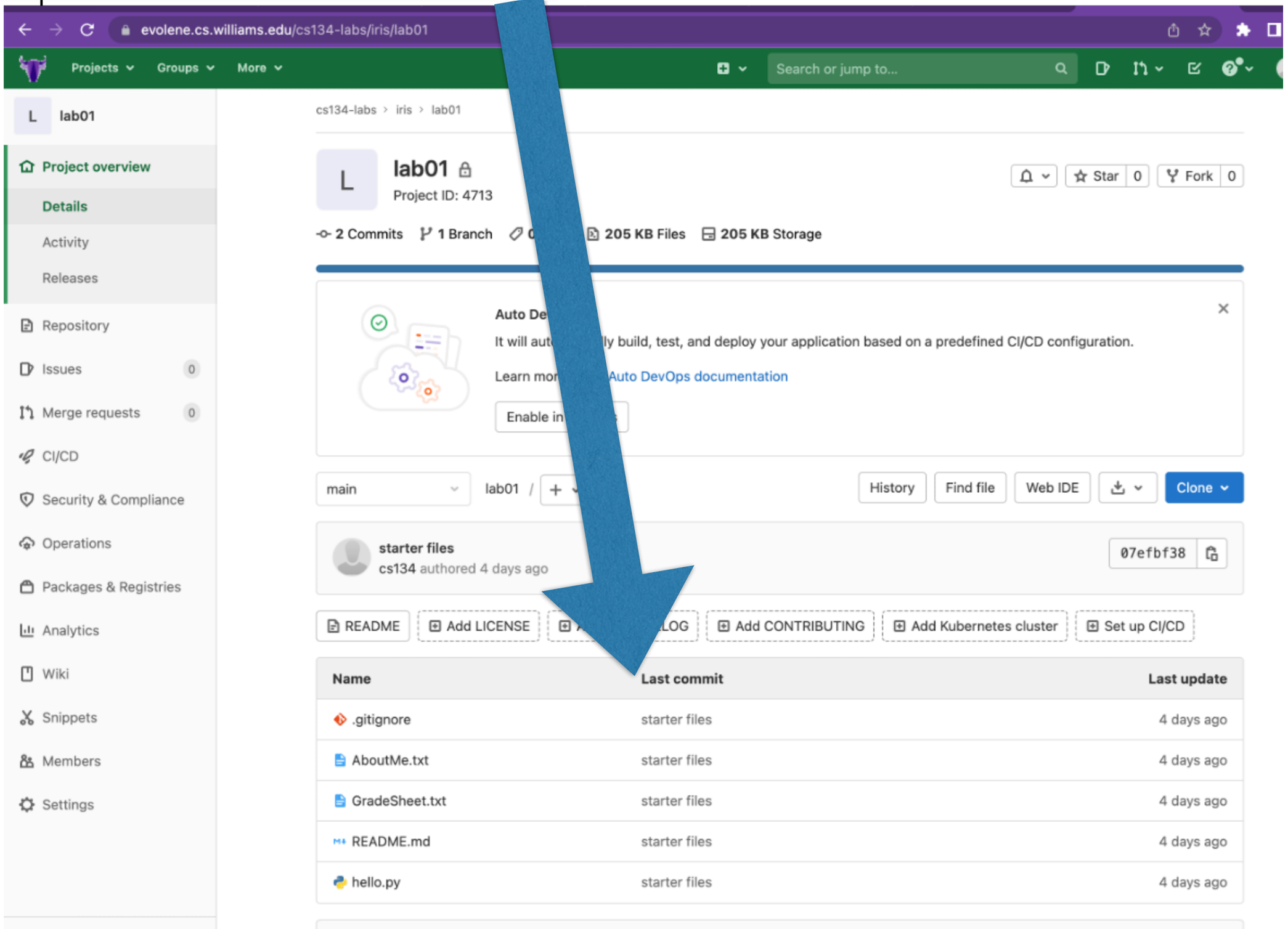
- Pushing files —> “Send all my snapshots up to the server!”

`git push`



`git`:: Check the Website to See Your Edits

- https://evolene.cs.williams.edu



`git`:: 3 Steps

- `git clone`: copy code from server to a **new** machine for the first time. Only run this once for each assignment on each machine!

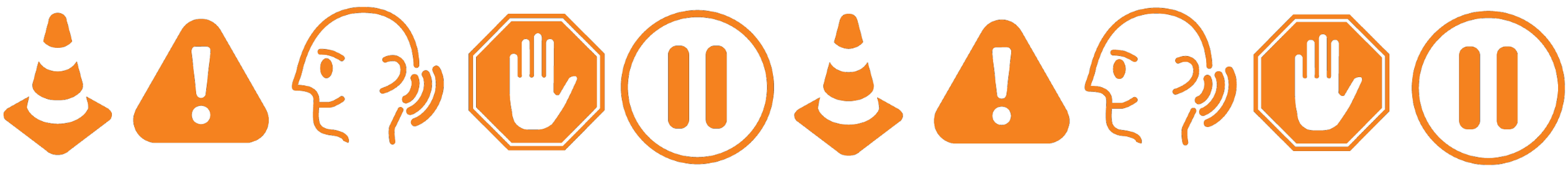
- `git add <files>`: add new or modified files to the next commit (this basically allows you to choose which files you plan to commit)
- `git commit -m "<message>"`: create a local snapshot of the added files (this does **not** copy anything back to the server!)
- `git push`: copy changes from your machine back to our server

- `git pull`: copy latest version of code from our server to your local machine (this can only be done **after** you have run `git clone` on this machine)
- `git commit -am "<message>"`: commits an already added file (a shortcut)

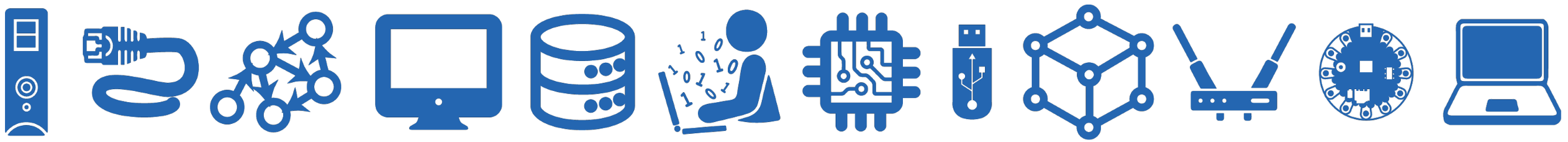
Notes

- We use `git` commands in Terminal
- You need your CS account to log-in to evolene (the gitlab server with the lab starter files)
- Always `git add/commit/push` before you leave lab!

- Lab instructions are on the course Website
- You'll *submit* your assignments through GradeScope.



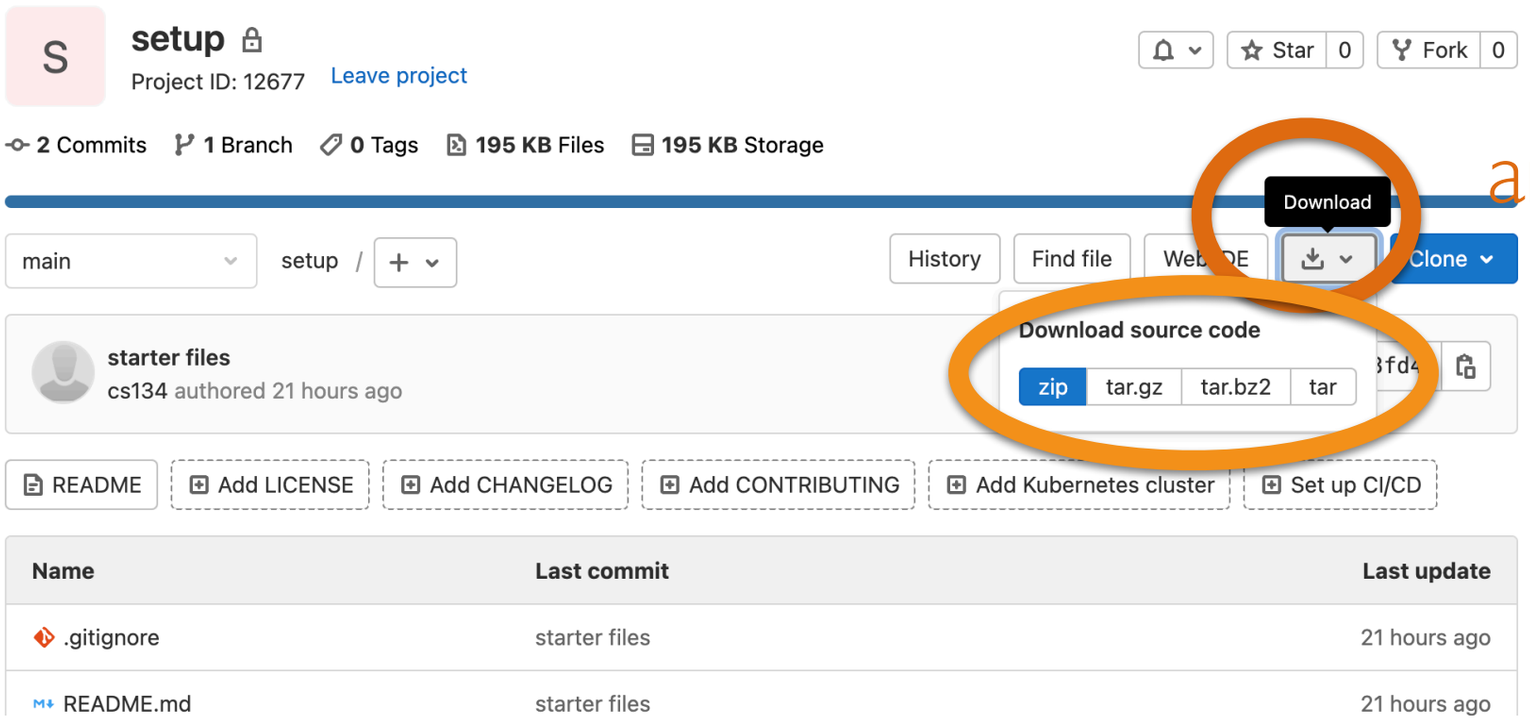
Submitting Your Lab Assignment Through Gradescope



Gradescope

- First, you'll need to go to evolene/gitlab and download your lab assignment as a .zip file:

  (This screenshot is for a different lab, but the buttons should be the same!)



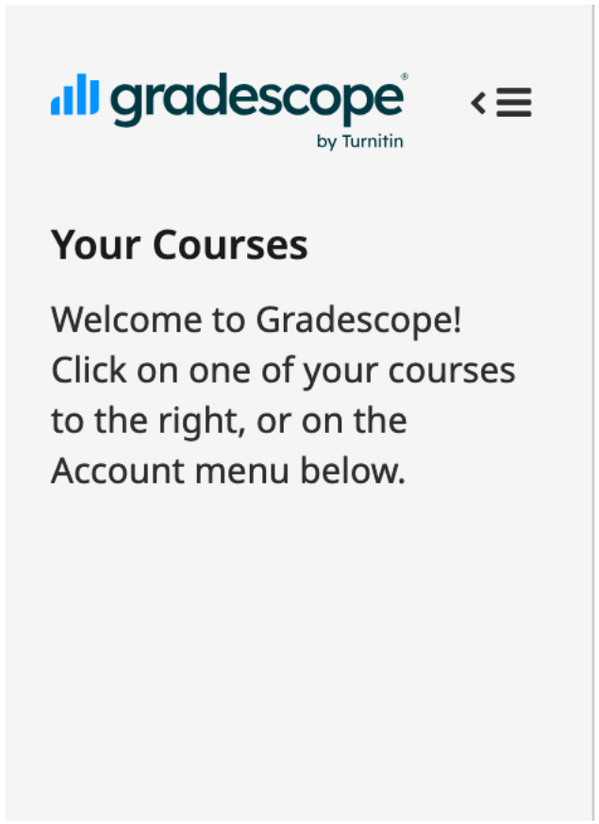
Select the downward arrow Download button

Then select 'zip' as the Download source code option

Remember where you've downloaded the **`lab01-main.zip`** file!

Gradescope

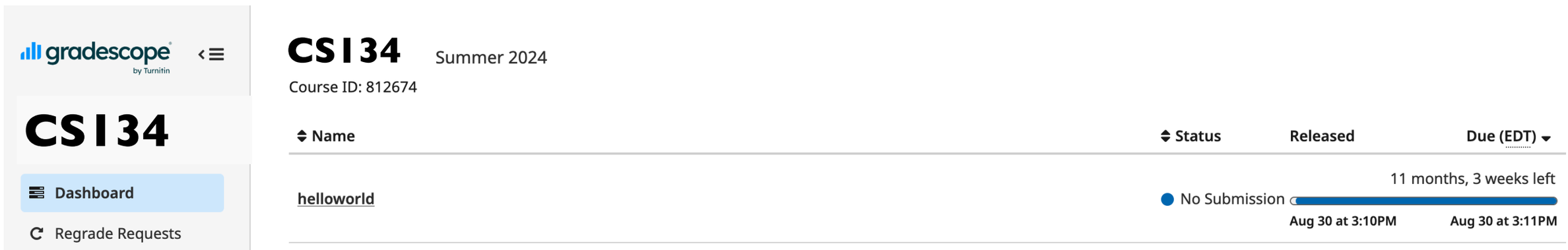
- Use the Gradescope invitation email you receive to create an account associated with CS134
- From the Gradescope Dashboard, select CS134



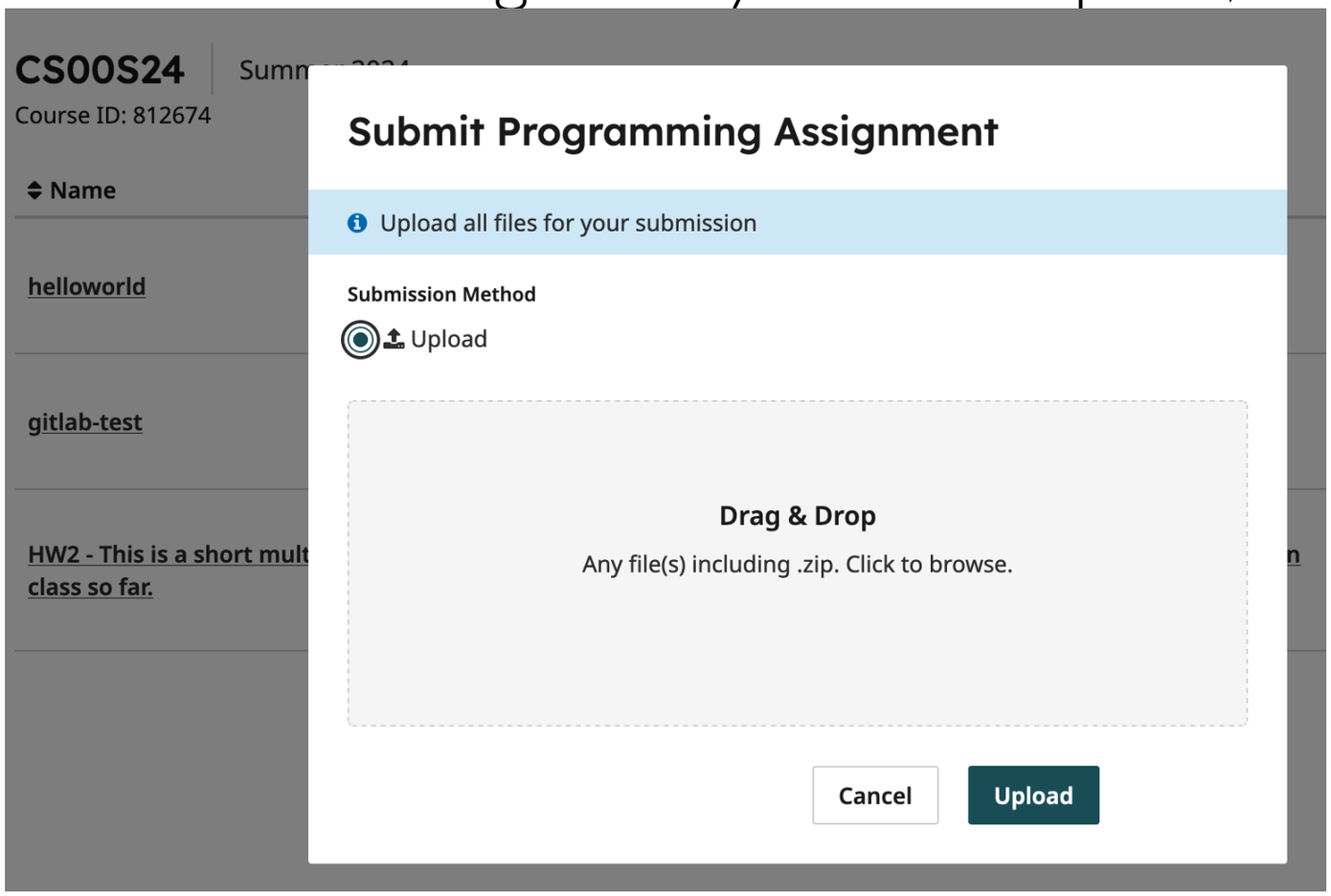
Your Dashboard will look *something* like this!

Gradescope

- Select the appropriate assignment (for this week, lab 1)



- You should navigate to your Lab .zip file, and upload it



Remember to press 'Upload!

The end!