



Lecture 1: GitHub and Single-processor Computing

CMSE 822: Parallel Computing
Prof. Sean M. Couch

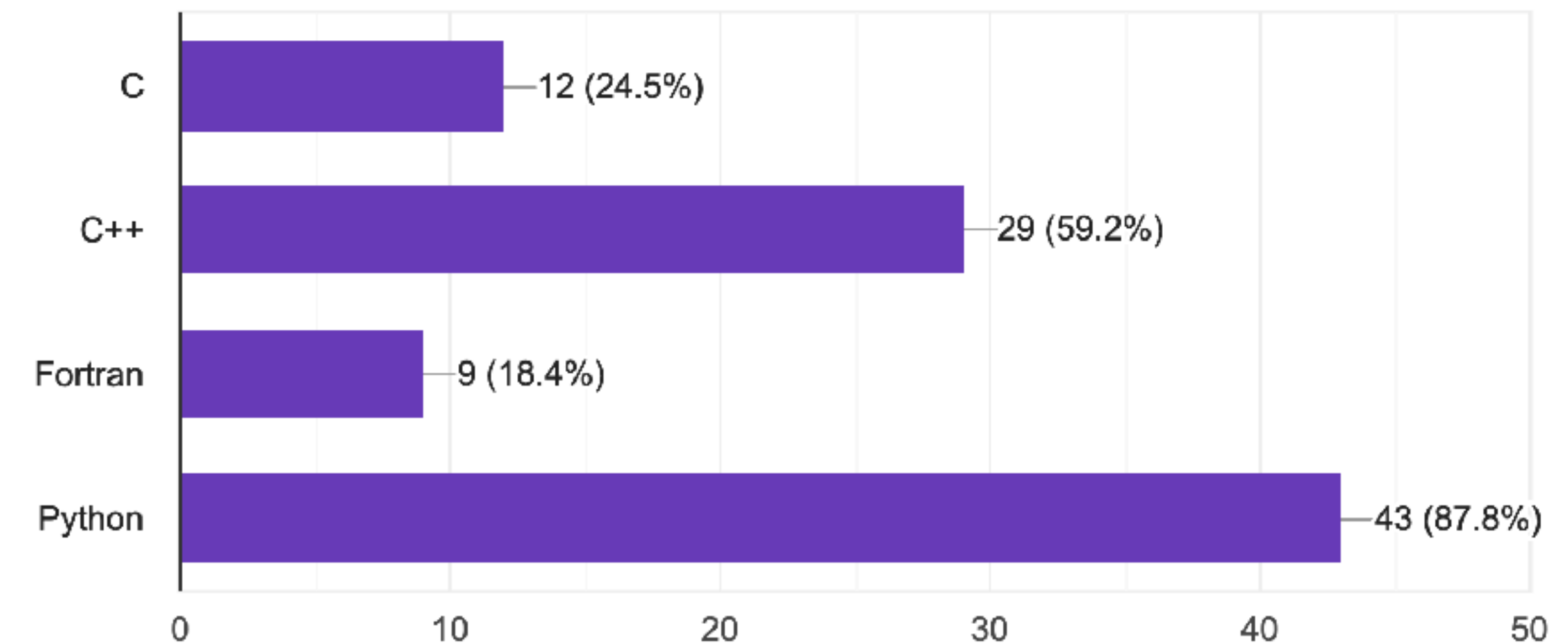


Survey Results

Language proficiency

In which of the following computing languages are you proficient (multiple answers ok)?
49 responses

- Python is great! And will be useful for analysis and plotting
- But... compiled language is needed for this course
- Join the #leancpp channel and help each other out!





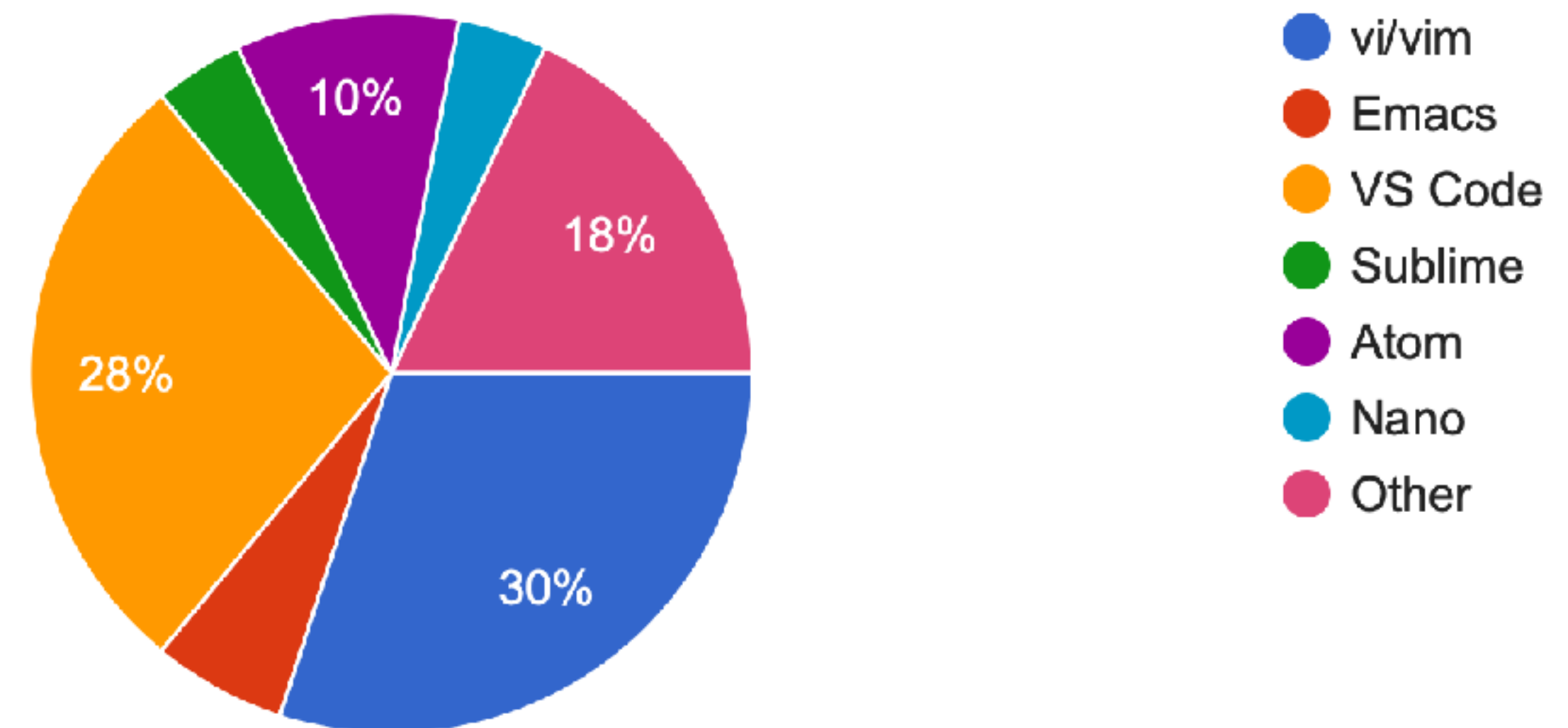
Survey Results

Text Editor

What is your favorite text editor for coding?

50 responses

- A good text editor is key!
- Does not need to be a full IDE, but syntax highlighting and other basic coding features really help
- If you are thinking you need an upgrade, checkout VS Code (my current personal favorite)





GitHub Classroom repo

Accept assignment

- Go to <https://classroom.github.com/a/IMzs-w8d>
- Find **YOUR** MSU email address. Do NOT click on someone else's!
- Accept the assignment

The screenshot shows the GitHub Classroom interface. At the top is a dark header with the 'GitHub Classroom' logo on the left and navigation links for 'GitHub Education', chat, calendar, help, and a user profile on the right. Below the header is a light blue notification bar stating: 'Your account is linked to scouch@msu.edu on the roster. If this is wrong, please reach out to your instructor.' with a close button. The main content area displays the assignment title 'cmse822-fs20' in a monospace font, followed by 'Accept the assignment —' and the repository name 'cmse-fs20' in green. A paragraph explains: 'Once you accept this assignment, you will be granted access to the cmse-fs20-smcouch repository in the cmse822 organization on GitHub.' At the bottom right is a green button labeled 'Accept this assignment'.



GitHub Classroom repo

Accept assignment

- Go to <https://classroom.github.com/a/IMzs-w8d>
- Find **YOUR** MSU email address. Do NOT click on someone else's!
- Accept the assignment
- Should look like this:

GitHub Classroom

GitHub Education

You're ready to go!

You accepted the assignment, **cmse-fs20**.

Your assignment repository has been created:

<https://github.com/cmse822/cmse-fs20-smcouch>

Note: You may receive an email invitation to join **cmse822** on your behalf. No further action is necessary.

Join the GitHub Student Developer Pack

Verified students receive free GitHub Pro plus thousands of dollars worth of the best real-world tools and training from GitHub Education partners — for free. [Learn more](#)

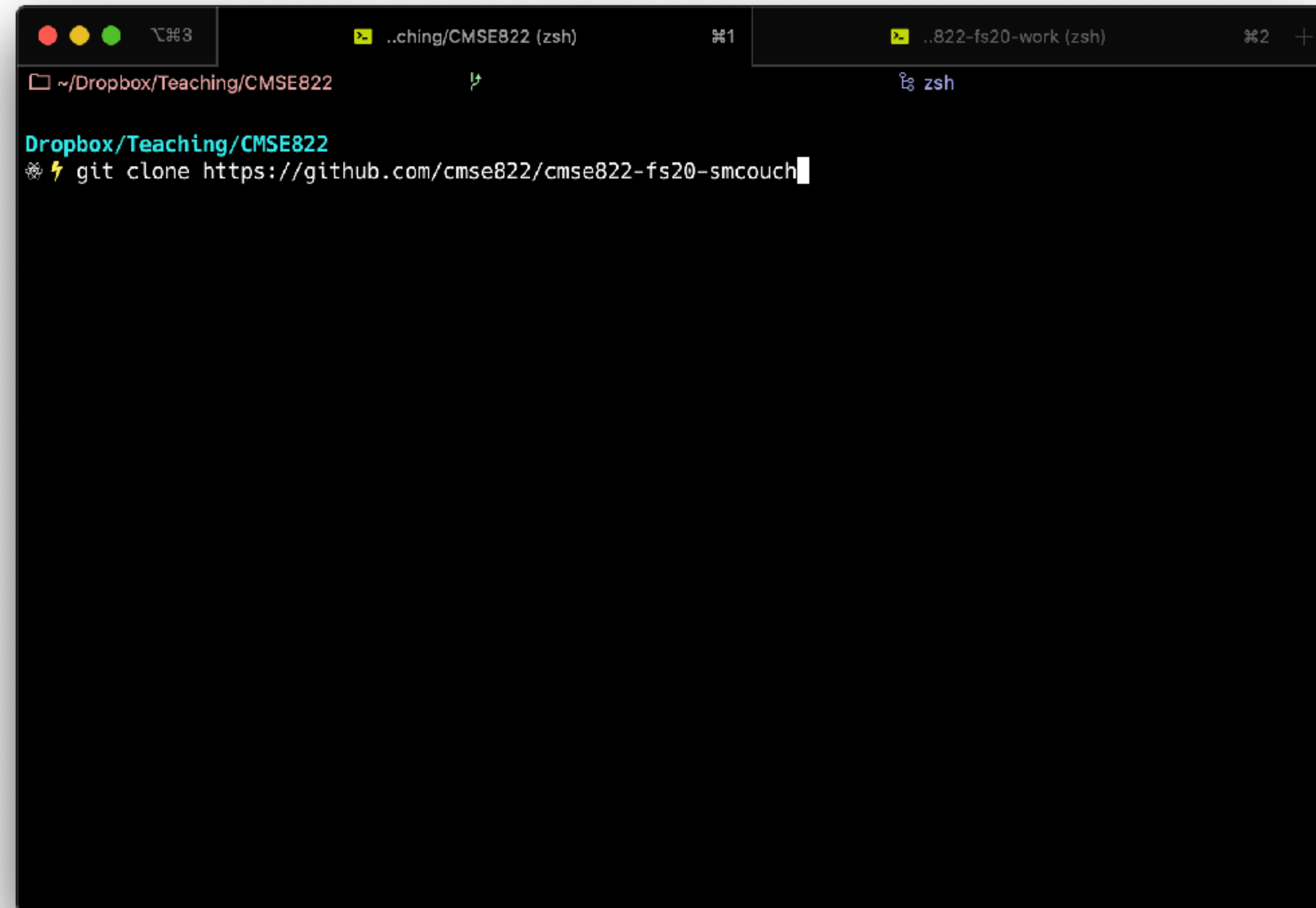
Apply



GitHub Classroom repo

Clone your repo

- In the directory where you wish to store your work for the class:



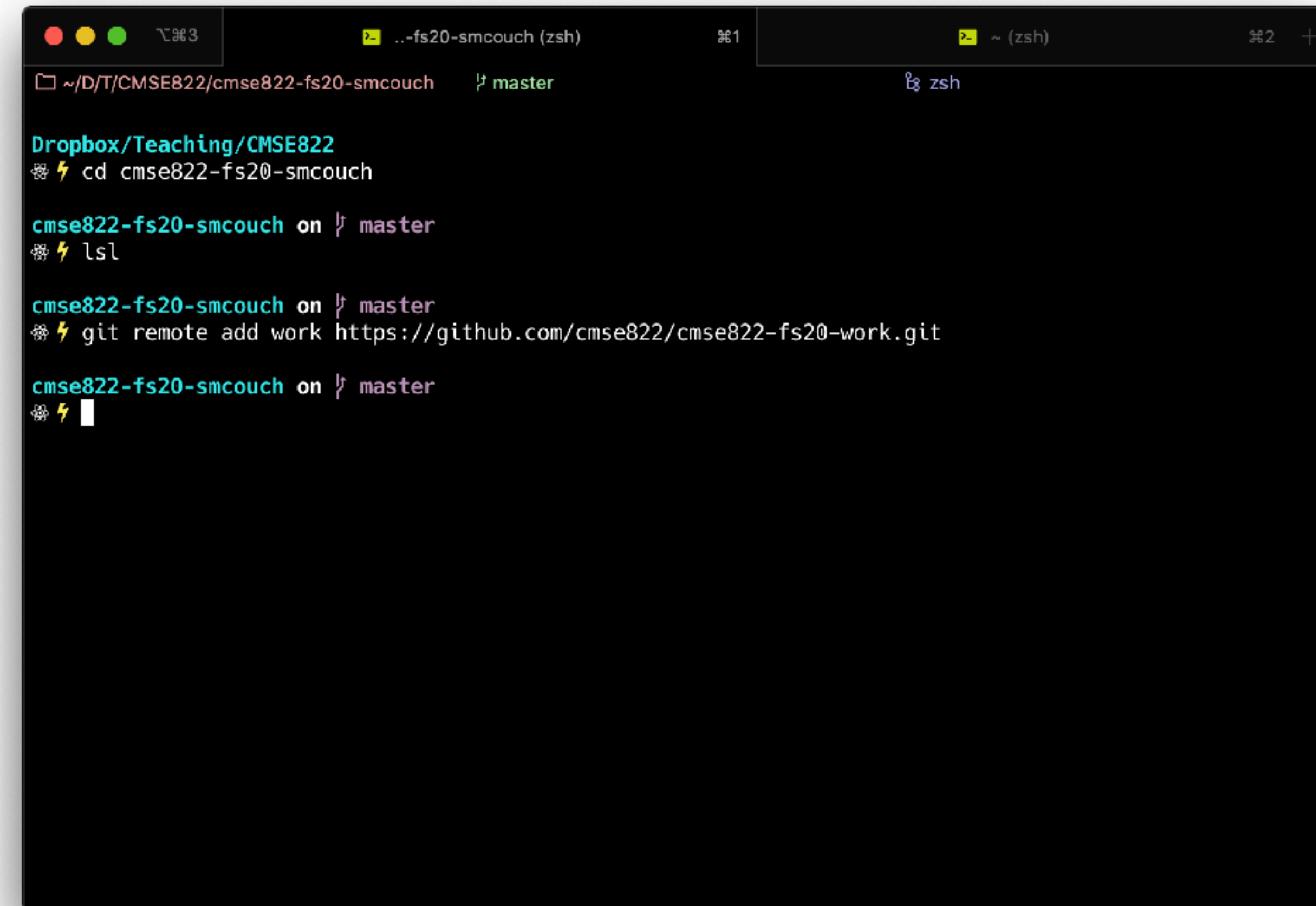
```
~/Dropbox/Teaching/CMSE822
Dropbox/Teaching/CMSE822
⚡ git clone https://github.com/cmse822/cmse822-fs20-smcouch
```




GitHub Classroom repo

Add the `work` repo as a remote

- From within your repo:
- The `work` repo will be used for pushing new assignments to you



```
Dropbox/Teaching/CMSE822
❯ cd cmse822-fs20-smcouch

cmse822-fs20-smcouch on  master
❯ ls

cmse822-fs20-smcouch on  master
❯ git remote add work https://github.com/cmse822/cmse822-fs20-work.git

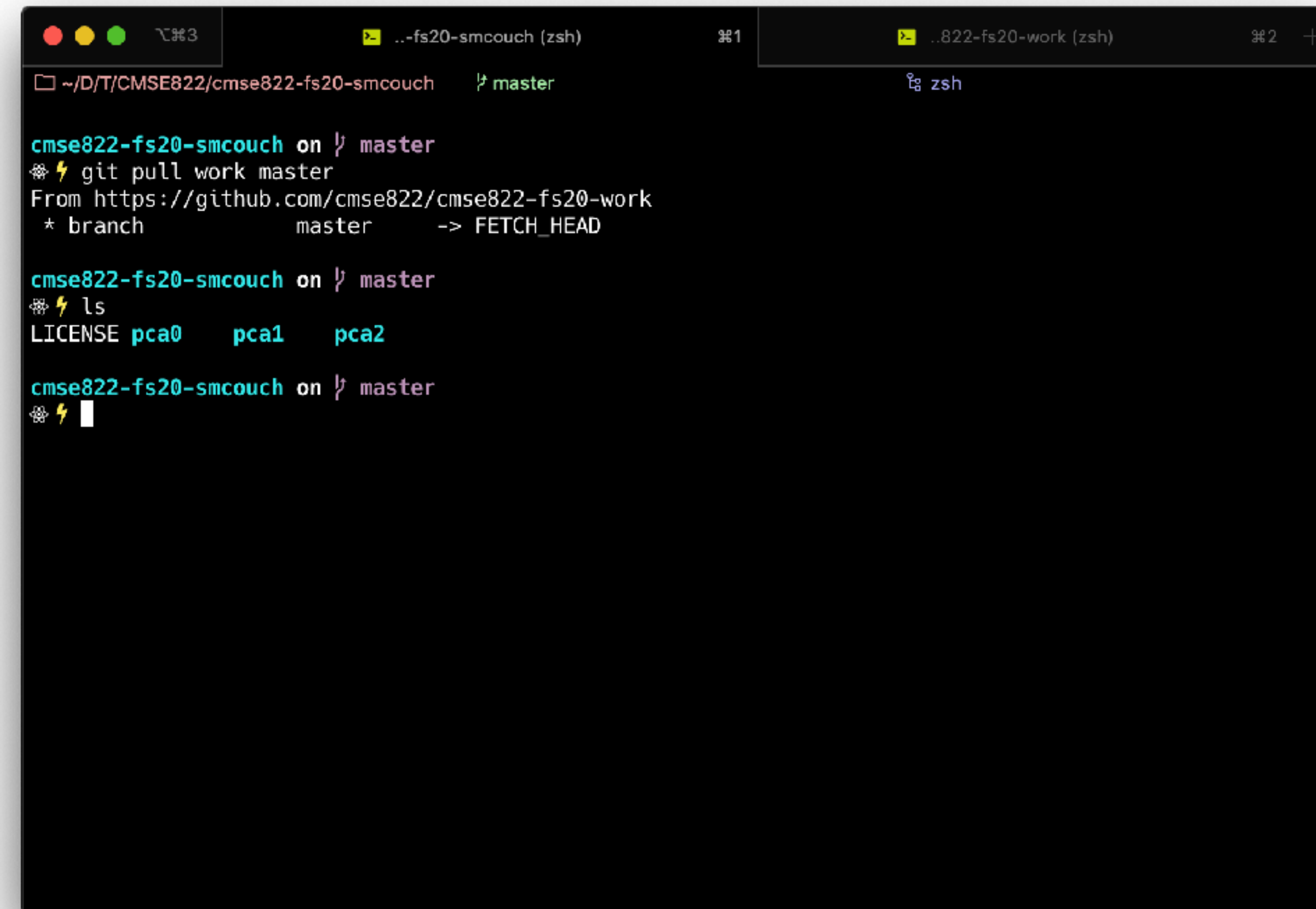
cmse822-fs20-smcouch on  master
❯
```



GitHub Classroom repo

Pull from `work` repo

- From within your repo:
- This should get you the first few PCAs and first Homework



```
cmse822-fs20-smcouch on  master
git pull work master
From https://github.com/cmse822/cmse822-fs20-work
* branch          master      -> FETCH_HEAD

cmse822-fs20-smcouch on  master
ls
LICENSE pca0    pca1    pca2

cmse822-fs20-smcouch on  master
```




GitHub Classroom repo

Push skeleton repo back to GitHub

- From within your repo:
- Don't forget to `commit` AND `push` your finished work! Otherwise, I can't see it!
- If you want to verify your work is pushed to GitHub, check the web interface.
- e.g., <https://github.com/cmse822/cmse822-fs20-smcouch>

```
cmse822-fs20-smcouch on master
ls
total 8
-rw-r--r--@ 1 smc staff 1.3K Sep 8 08:34 LICENSE
drwxr-xr-x@ 3 smc staff 96B Sep 8 08:34 pca0
drwxr-xr-x@ 3 smc staff 96B Sep 8 08:34 pca1
drwxr-xr-x@ 3 smc staff 96B Sep 8 08:34 pca2
drwxr-xr-x@ 4 smc staff 128B Sep 8 08:53 hw1

cmse822-fs20-smcouch on master
git remote -vv
origin https://github.com/cmse822/cmse822-fs20-smcouch (fetch)
origin https://github.com/cmse822/cmse822-fs20-smcouch (push)
work https://github.com/cmse822/cmse822-fs20-work.git (fetch)
work https://github.com/cmse822/cmse822-fs20-work.git (push)

cmse822-fs20-smcouch on master
git push origin
Enumerating objects: 19, done.
Counting objects: 100% (19/19), done.
Delta compression using up to 16 threads
Compressing objects: 100% (14/14), done.
Writing objects: 100% (19/19), 4.74 KiB | 4.74 MiB/s, done.
Total 19 (delta 3), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (3/3), done.
To https://github.com/cmse822/cmse822-fs20-smcouch
* [new branch] master -> master

cmse822-fs20-smcouch on master took 3s
```



Breakout Time!

Meet your group

- Get acquainted with your group
- What's your research area?
- What is your experience in HPC/parallel computing?
- What are you hoping to get out of this course?
- Strengths, weaknesses?
- Etc.?