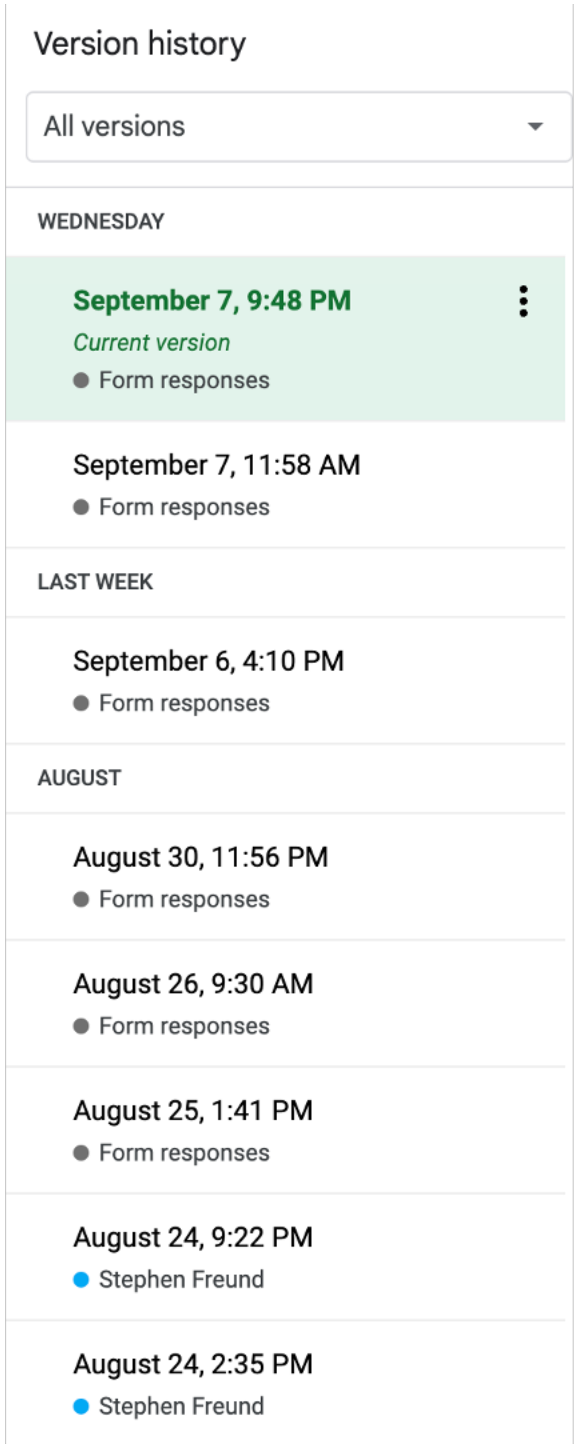
CS134:
Git

Why git?!

- Version history!
- Access files from anywhere!
- Great for collaboration!
- Great for maintaining large code bases!
- In CS134, you use it for
  - Receiving code for lab assignments from us
  - Submitting your lab work to us



Version history

All versions

WEDNESDAY

September 7, 9:48 PM
Current version
● Form responses

September 7, 11:58 AM
● Form responses

LAST WEEK

September 6, 4:10 PM
● Form responses

AUGUST

August 30, 11:56 PM
● Form responses

August 26, 9:30 AM
● Form responses

August 25, 1:41 PM
● Form responses

August 24, 9:22 PM
● Stephen Freund

August 24, 2:35 PM
● Stephen Freund

(Example: Google Docs)

git clone

- You only need clone each lab **once** on a machine
  - The first time you use a new machine, you must clone the lab files for the current lab you are working on first

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

`git add`

- Used for staging files, essentially telling git that *"I edited this file, I want to include it in the next snapshot of my code ."*

```
git add myfilename.py
```

git commit –m

- Commit changes to a file (that you have added) takes a snapshot of your code in files you have added and assigns it a version number

```
git commit -m “Message here”
```

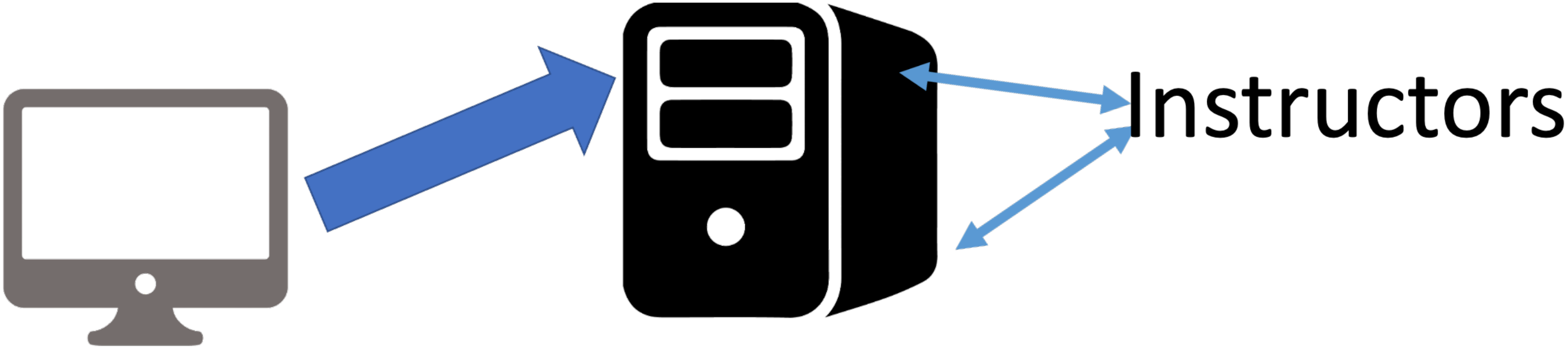
- If you use the flag `–am` it commits changes to all files that have ever been added to the current lab repository
  - Essentially a short term to avoid adding each file individually every time you change it

```
git commit -am “Message here”
```

`git push`

- Sends all the committed changes on your local machine to the CS server (`evolene`)

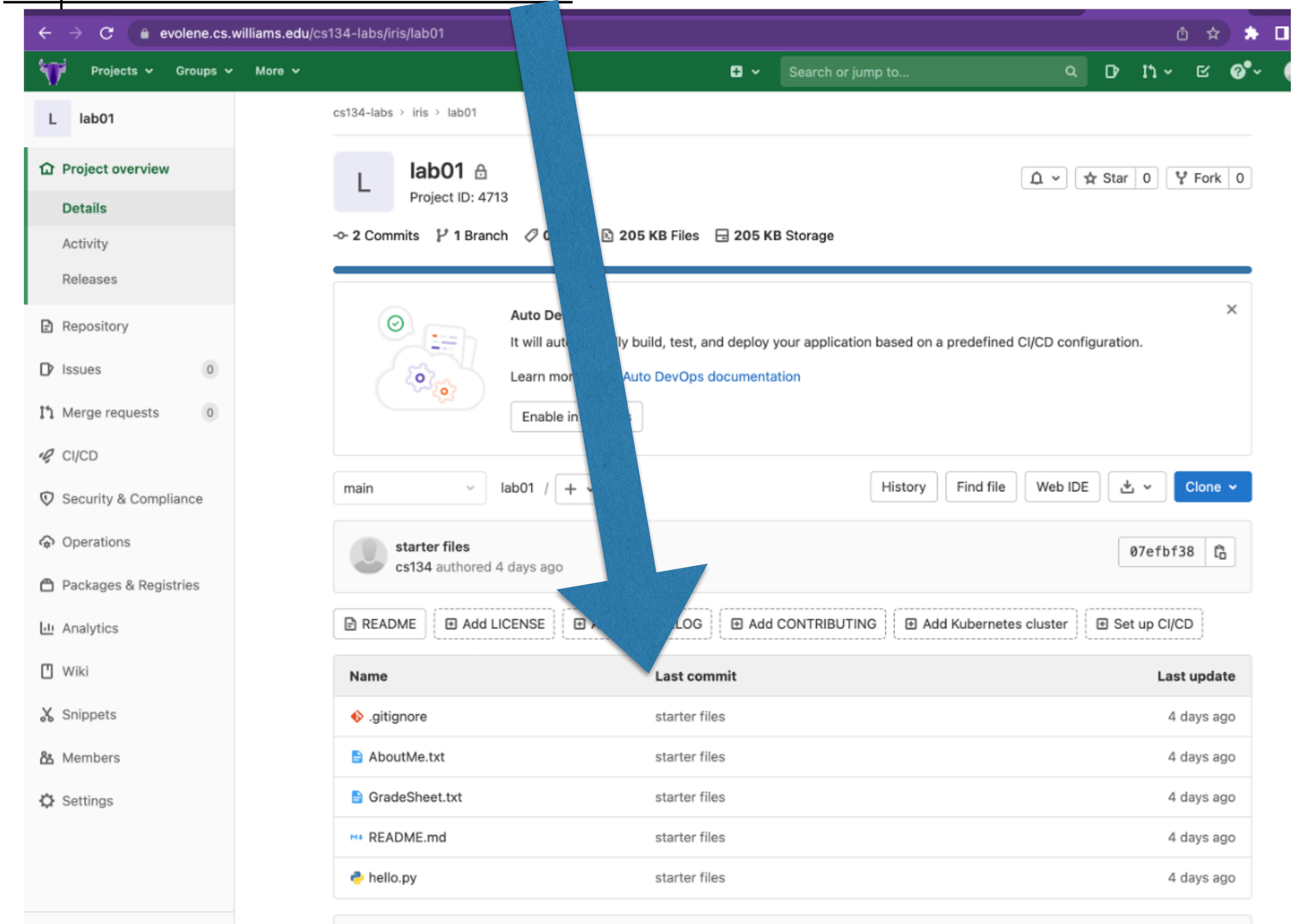
`git push`



Instructors

Check the Website to See Your Edits

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



lab01

Project ID: 4713

2 Commits 1 Branch 205 KB Files 205 KB Storage

Auto De

It will aut ly build, test, and deploy your application based on a predefined CI/CD configuration.

Learn mor Auto DevOps documentation

Enable in

starter files

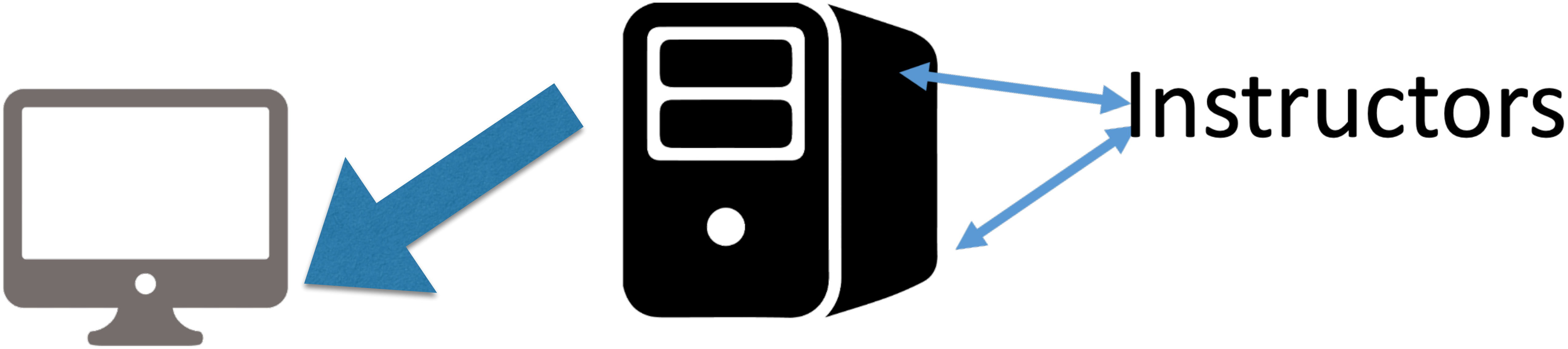
cs134 authored 4 days ago

Name	Last commit	Last update
.gitignore	starter files	4 days ago
AboutMe.txt	starter files	4 days ago
GradeSheet.txt	starter files	4 days ago
README.md	starter files	4 days ago
hello.py	starter files	4 days ago

`git pull`

- If you are **resuming work on a machine** where you have already cloned the lab files (sometime in the past), always git pull first to ensure you are starting from the most up-to-date version

```
git pull
```



Summary

- `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)

Things to Remember

- We use git commands in the **Terminal**
- You need your CS account to log-in to evolvene (the CS server that hosts all your lab files)
- Always git add/commit/push before you leave lab!
- Lab instructions are on the course website

CS134:
Unix (Terminal) Commands

Directories in Unix

- 'Folders' on your computers are called '**directories**' in Unix-based operating systems
- Your 'current directory' is important when executing commands on the Terminal
  - For example, Python programs that run as a script, such as `helloworld.py`, must be in the *same* directory as where you execute the command `python3 helloworld.py` in your Terminal
  - Otherwise your computer doesn't know which program to run!
- Similarly, when you `git pull`, you need to be in the correct directory
- Useful to learn how to navigate between directories with the Terminal!

Useful 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