

# Git & Github

---

MIKE SANDERS

MARCH 28, 2017



# Git

---

Efficient version control

Revisions and updates in a safe environment

Free and open source!

Used by, like, everyone—so you might as well learn it



# Github.com

---

Github is a hub... for gits!

Remotely store, sync, and share repositories

Good for collaboration—especially with distributed teams!

And all the other social stuff



# Git Basics

---

```
[work on stuff]
```

```
$ git add .
```

```
$ git commit -m "Description"
```



# Branches and Remotes

---

## Branches

- Parallel copy of your repository
- Use this to work on new features, etc.
- Merge into Master when complete

## Remotes

- Networked location for your repository (e.g., Github)
- Clone or fork others' repos

# All You Really Need to Remember

---


```
$ git add .
```

```
$ git commit -m "Helpful message"
```

```
$ git push origin master
```

```
$ git pull origin master (or upstream master)
```

All the commands you'll need, in an easy to read guide: <https://rogerdudler.github.io/git-guide/>



# Avoiding and Dealing with Two Common Issues

---



# Avoid Conflicts with Non-Critical Files

---

Sometimes git issues are due to merge conflicts related to files that are in your repo but you don't actually need git to track.

```
[navigate to the top-level directory for your repo]
```

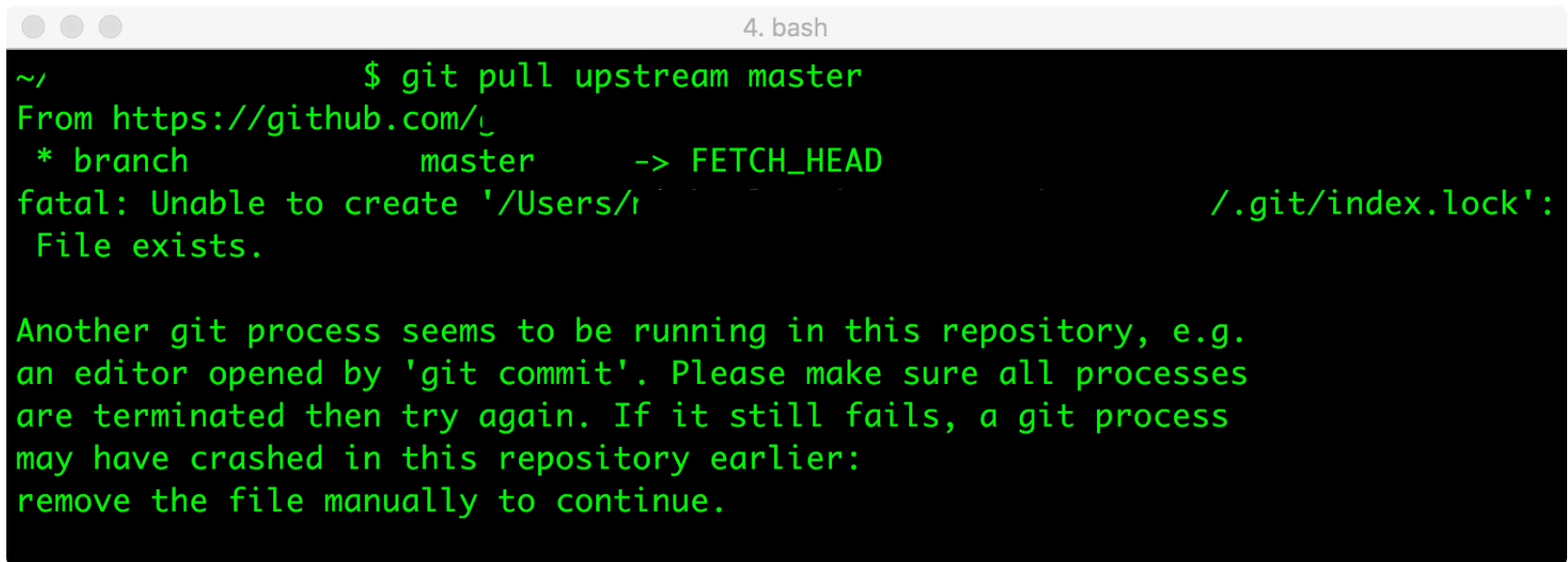
```
$ nano .gitignore
```

```
[type the filename (with extension) into the text file and  
save]
```



# Has This Ever Happened to You?

---

A terminal window titled "4. bash" with a dark background and green text. It shows the command "\$ git pull upstream master" being executed. The output indicates a fetch from "https://github.com/..." and a merge of "branch master" into "FETCH\_HEAD". The process then fails with the error "fatal: Unable to create '/Users/.../.git/index.lock': File exists." followed by a message stating that another git process might be running and suggesting to terminate it or remove the lock file manually.

```
~/ $ git pull upstream master
From https://github.com/...
* branch master -> FETCH_HEAD
fatal: Unable to create '/Users/.../.git/index.lock':
File exists.

Another git process seems to be running in this repository, e.g.
an editor opened by 'git commit'. Please make sure all processes
are terminated then try again. If it still fails, a git process
may have crashed in this repository earlier:
remove the file manually to continue.
```

The issue is most likely with index.lock

# Do This:

---

[navigate to the top-level directory for your repo]

```
$ cd .git
```

```
$ rm -f index.lock
```

```
$ cd ..
```

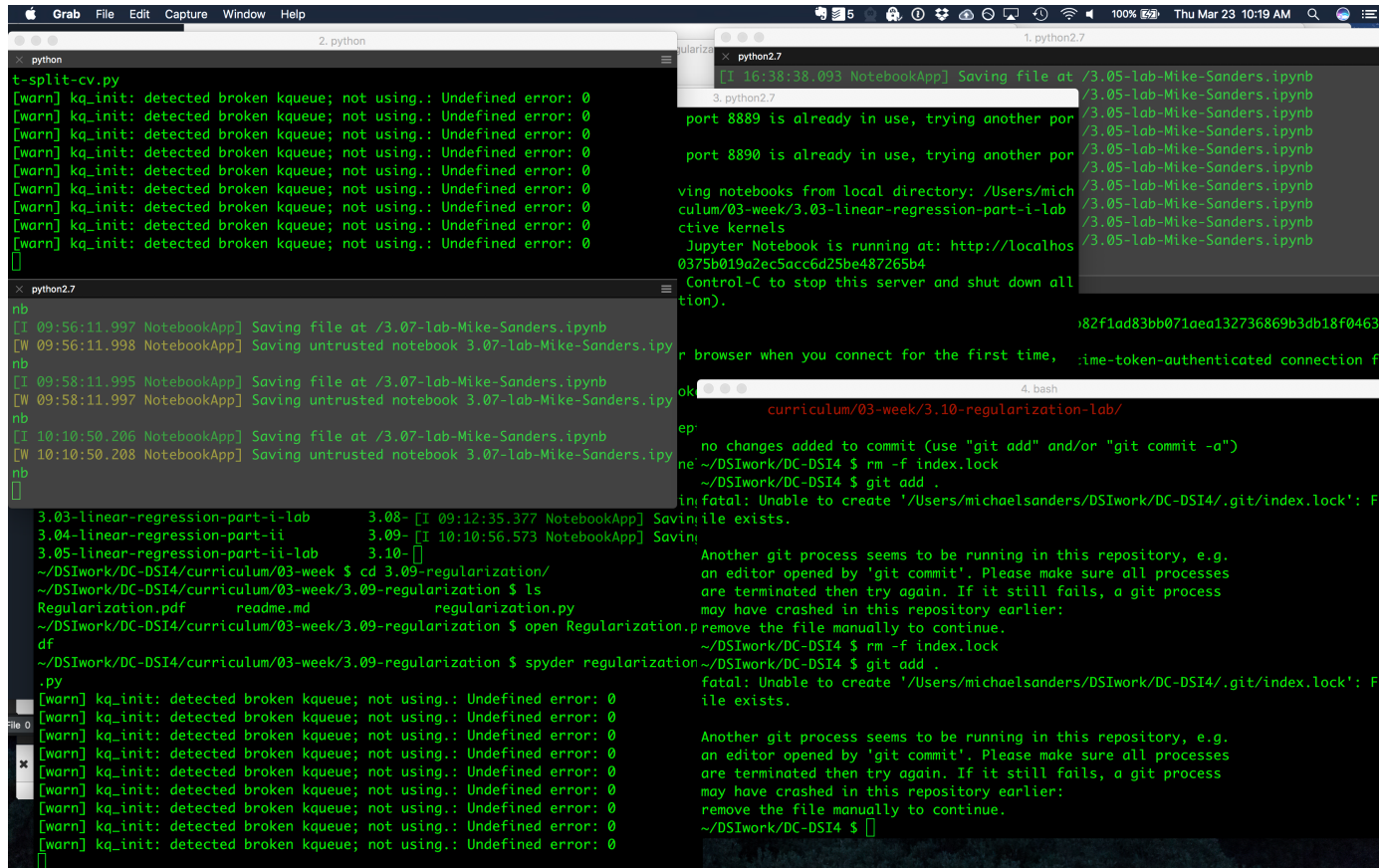
```
$ git add .
```

```
$ git commit -m "Message"
```

```
$ git push
```



# I Should Probably Seek Help...



The screenshot shows a Mac desktop with several overlapping terminal windows. The top window, titled '2. python', displays a series of warning messages: `[warn] kq_init: detected broken kqueue; not using.: Undefined error: 0`. Below this, a window titled 'python2.7' shows a Jupyter NotebookApp saving files and starting a server at `http://localhost:8888`. Another window, titled '1. python2.7', shows a similar Jupyter NotebookApp saving files and starting a server at `http://localhost:8890`. A third window, titled '4. bash', shows a terminal session where the user is in the directory `~/DSIwork/DC-DSI4/curriculum/03-week/3.09-regularization` and attempts to run `git add .`, resulting in a fatal error: `fatal: Unable to create '/Users/michaelsanders/DSIwork/DC-DSI4/.git/index.lock': File exists.` The user then runs `rm -f index.lock` and `git add .` again, but the error persists. The bottom window, titled '3. python2.7', shows a Jupyter NotebookApp saving files and starting a server at `http://localhost:8889`. The overall scene suggests a user who is struggling with a complex task, likely related to setting up a development environment or running a Jupyter Notebook, and is seeking help.