



# Week 2: Intro to GitHub & Dataframes

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# Today's agenda

- 🟡 Check-in + any questions about the program?
- 🟡 Github
- 🟡 Review from last week
- 🟡 Working with data

# Why use Github?

Thoughts?

- Tracking all changes in a project
- Portability and visibility when new people join.
- collaboration, code review
- In data science/computational fields its a key part of your CV

# Git vs. Github?



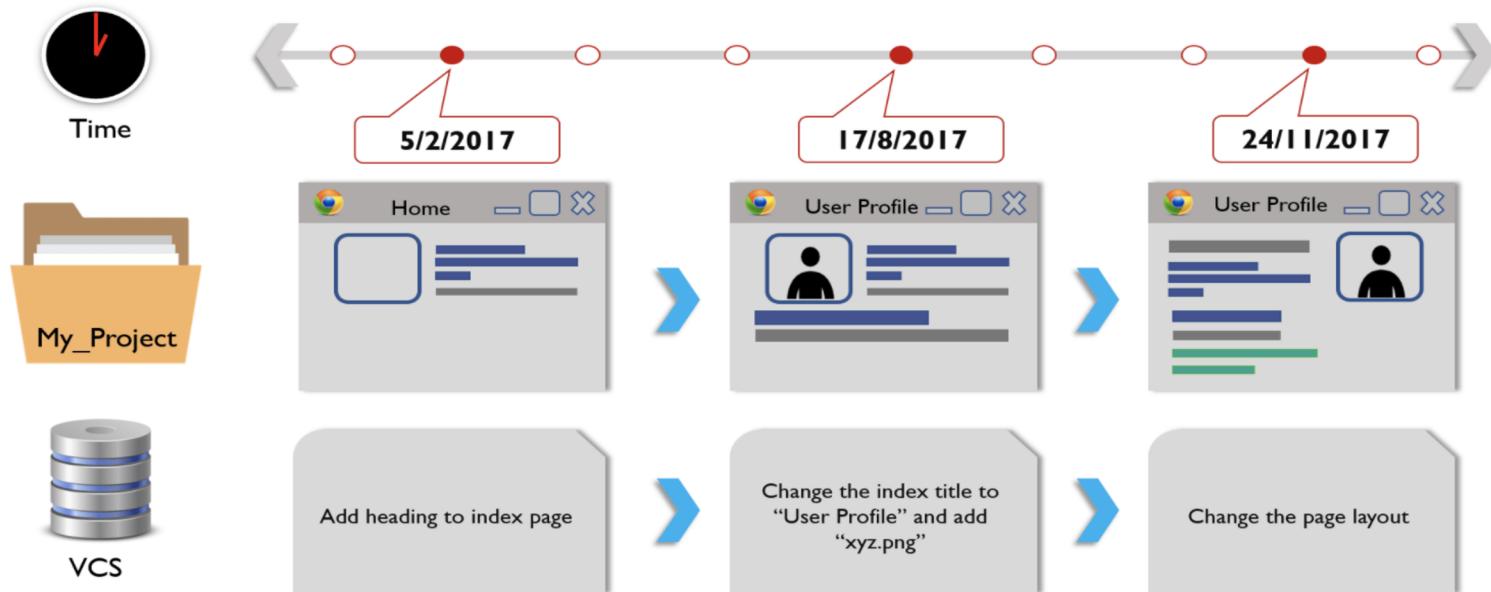
Version control software you install on your local machine.

- Helps you manage and track your code.

Cloud based hosting system for git

- Makes collaboration easy
- Provides a UI
- Bunch of additional features

# What is version control?



# Git is a version control system

- Git is one of two major contributions from Linus Torvalds
  - Do you know the other one?
    - i. Linux!
  - “If i was stranded on an island and the only way to get off was to make a pretty UI i’d die there”



# Essential Git terminology

**Repository (“repo”)** - a git directory or folder that contains all the files for your project and the file revision history.

## Essential git commands

**Clone** - make a copy of the git repository on your local computer.

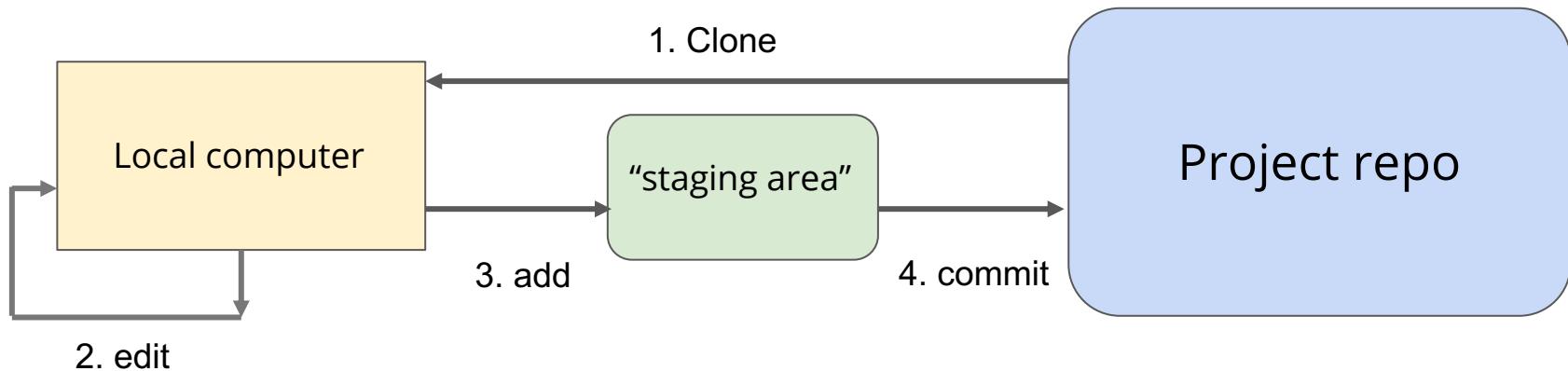
**Add** – first stage of commit. Adds changed files to the “staging area”

**Commit** - Save the changed files + record of changes to the repo.

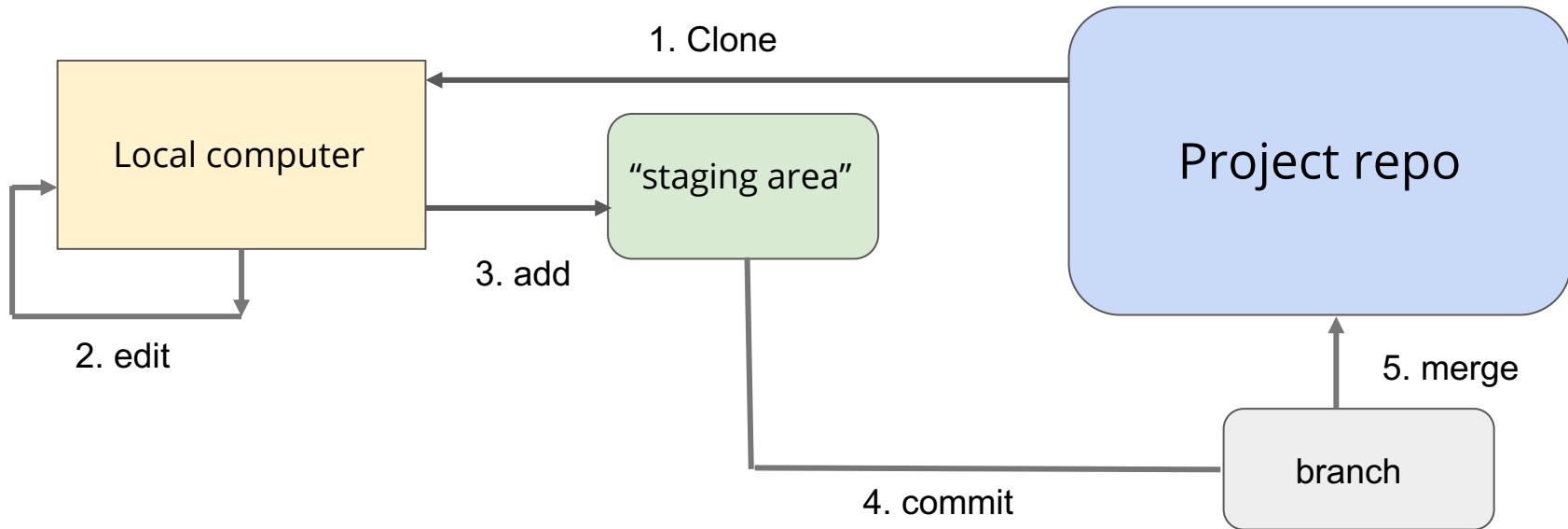
**Push** – update your remote repo (github) with your committed changes

**Pull** – update your cloned repo to reflect the newest version

# How do I use GIT?? - Git basic workflow



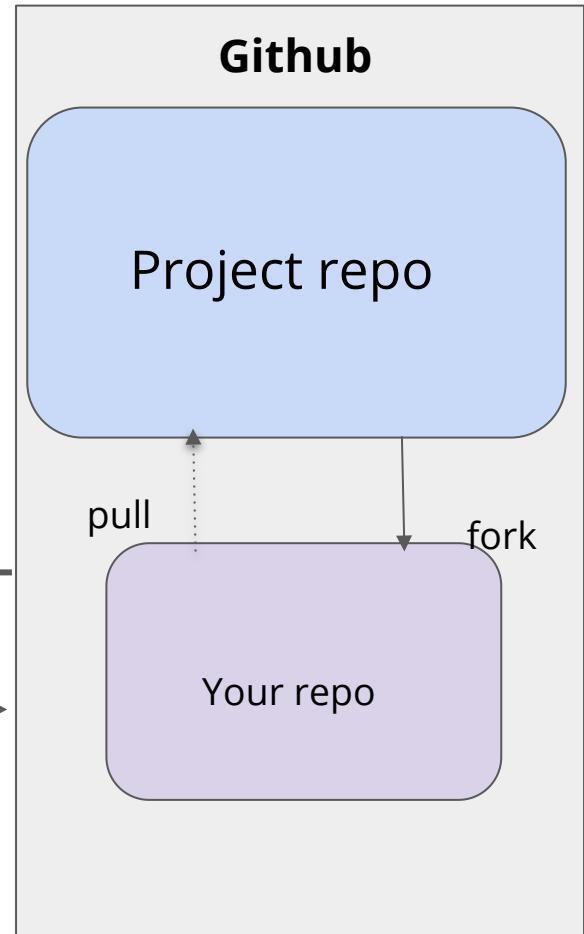
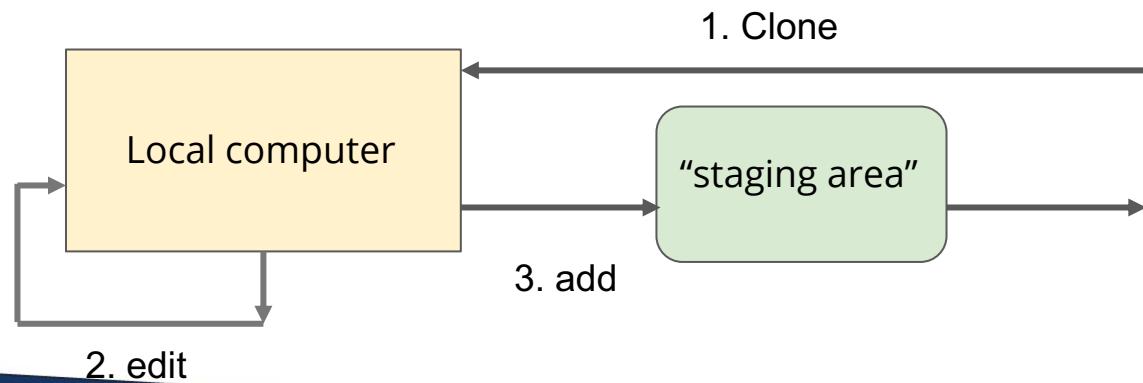
# Workflows can be more complex - branches



# Github has an additional feature: “Fork”

**Fork** - Copy someone's github repository to your own github.

*Usually you want to clone not fork*



# Lets clone and create our first repositories 2 ways

- On github
- Through the terminal

Go to the QuACK webpage and click on the link to this week's materials: <https://ucb-psychology-quack.github.io/UCB-Psych-QuACK.github.io/>

# Clone a github repo from the command line

Get the link to the remote repository that you want to clone

The screenshot shows a GitHub repository page for "UCB-Psychology-QuACK / dataframes-week2". The page includes a navigation bar with links for Pull requests, Issues, Marketplace, and Explore. Below the navigation bar, there are buttons for Watch (0), Star (0), Fork (2), and a search bar. The main content area shows a list of files and folders, including "master" (1 branch, 0 tags), "DataPractice\_Week2.R", "README.md", "dataframe\_Week2\_starter.R", "mtcars.csv", "penguin.csv", and "warmup\_Week2\_starter.R". A red box highlights the "Code" button in the top right corner of the repository header. Another red box highlights the "Clone with HTTPS" link in the dropdown menu that appears when clicking the "Code" button. A third red box highlights the URL "https://github.com/UCB-Psychology-C" which is copied to the clipboard. To the right of the URL, a callout box says "1. Click the green 'code' button". Below the URL, another callout box says "2. Clone with HTTPS". To the right of the URL, another callout box says "3. Copy the link".

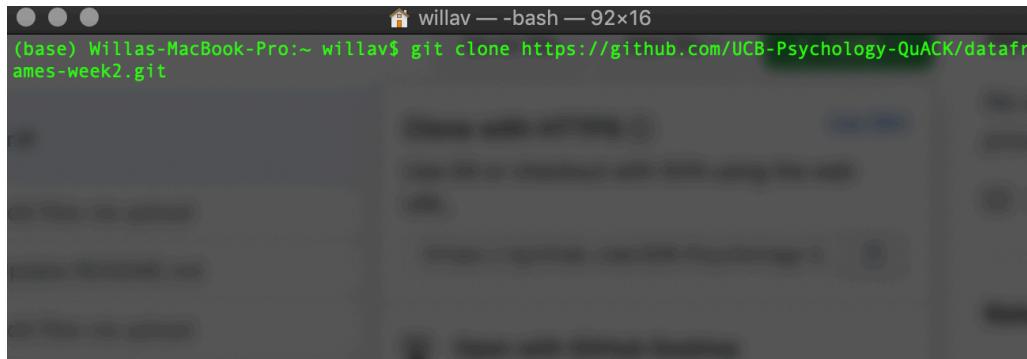
1. Click the green "code" button

2. Clone with HTTPS

3. Copy the link

Note if you want to use SSH key instead of HTTPS there are instructions to set that up on the QuACK webpage

# Clone a github repo from the command line



```
willav — -bash — 92x16
(base) Willas-MacBook-Pro:~ willav$ git clone https://github.com/UCB-Psychology-QuACK/dataframes-week2.git
```

Open a terminal  
\$ git clone <paste the HTTPS address>

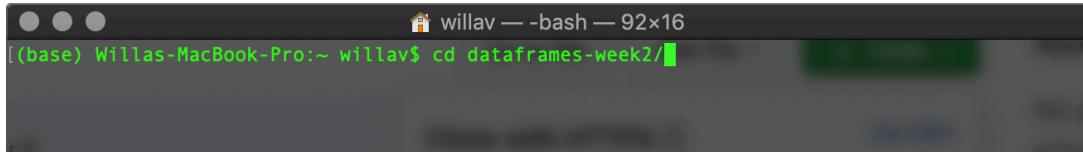


```
dataframes-week2 — -bash — 106x16
(base) Willas-MacBook-Pro:dataframes-week2 willav$ git pull
```

To update a cloned repo

```
$ cd <path to cloned repository>
$ git pull
```

# Commit changes from the command line



```
willav — bash — 92x16
(base) Willas-MacBook-Pro:~ willav$ cd dataframes-week2/
```

Change your directory to the cloned repository

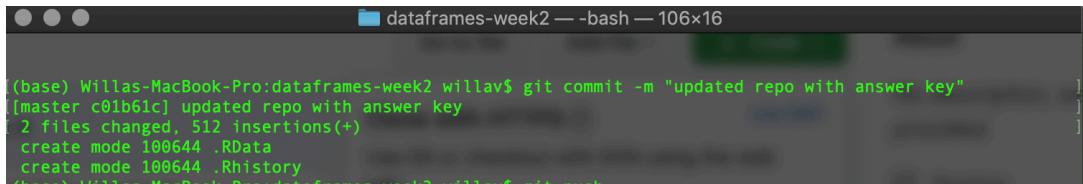


```
dataframes-week2 — bash — 106x16
(base) Willas-MacBook-Pro:dataframes-week2 willav$ git add .
```

In your cloned repo:

\$ git add .

(the . adds all changed files).



```
dataframes-week2 — bash — 106x16
(base) Willas-MacBook-Pro:dataframes-week2 willav$ git commit -m "updated repo with answer key"
[master c01b61c] updated repo with answer key
 2 files changed, 512 insertions(+)
  create mode 100644 .RData
  create mode 100644 .Rhistory
(base) Willas-MacBook-Pro:dataframes-week2 willav$ git push
```

\$ git commit -m “message here”

Include a message describing your changes



```
dataframes-week2 — bash — 106x16
(base) Willas-MacBook-Pro:dataframes-week2 willav$ git push
```

When ready, push changes to github

\$ git push .