Git & Github

Hope Townsend, Aug 2023

Why should I care?

- Version control
  - Group work
  - Helps keep track of your own code and helps force better documentation
- Many tools are only accessible via Github
- Will be used in Software-Engineering for Scientists

https://storage.googleapis.com/gweb-uniblog-publish-prod/images/Google-Docs-logo-transparent.max-2800x2800.png

Git vs Github

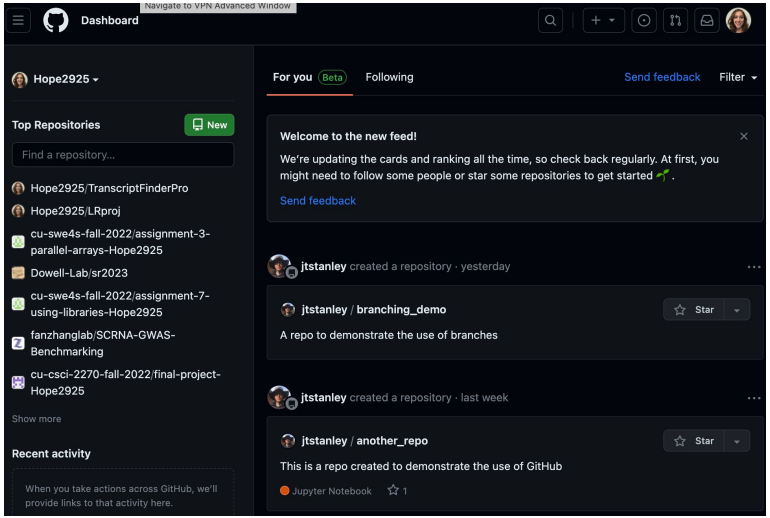
Git

- the version control system/**software**

https://th.bing.com/th/id/R.7894b78ef927a1287dc688ab40ff74b9?rik=QIRi%2fxp%2brJ2Zeg&riu=http%3a%2f%2fwww.roelee.co.uk%2fimages%2fsoftware.jpg&ehk=Lpa%2fx9EVSp8ZwDDFRRGYrMo2nKH83%2bsUBLAdzME3xxQ%3d&risl=&pid=ImgRaw&r=0

Github

- **web-based service** to facilitate sharing Git repositories

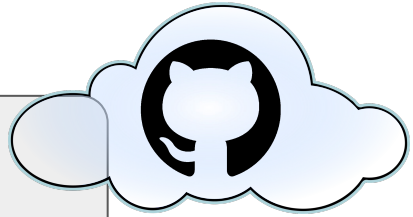


Git Lingo

- **Repository**= folder with the version controlled content
  - Can contain folders & files within it
  - Usually one per project
- **README**= file with important information about repository (e.g. how to use it if tool, dependencies, other important notes)
- **Remote**= Github's version of a repository
- **Local**= Your personal machine's version of a repository

Local

Remote



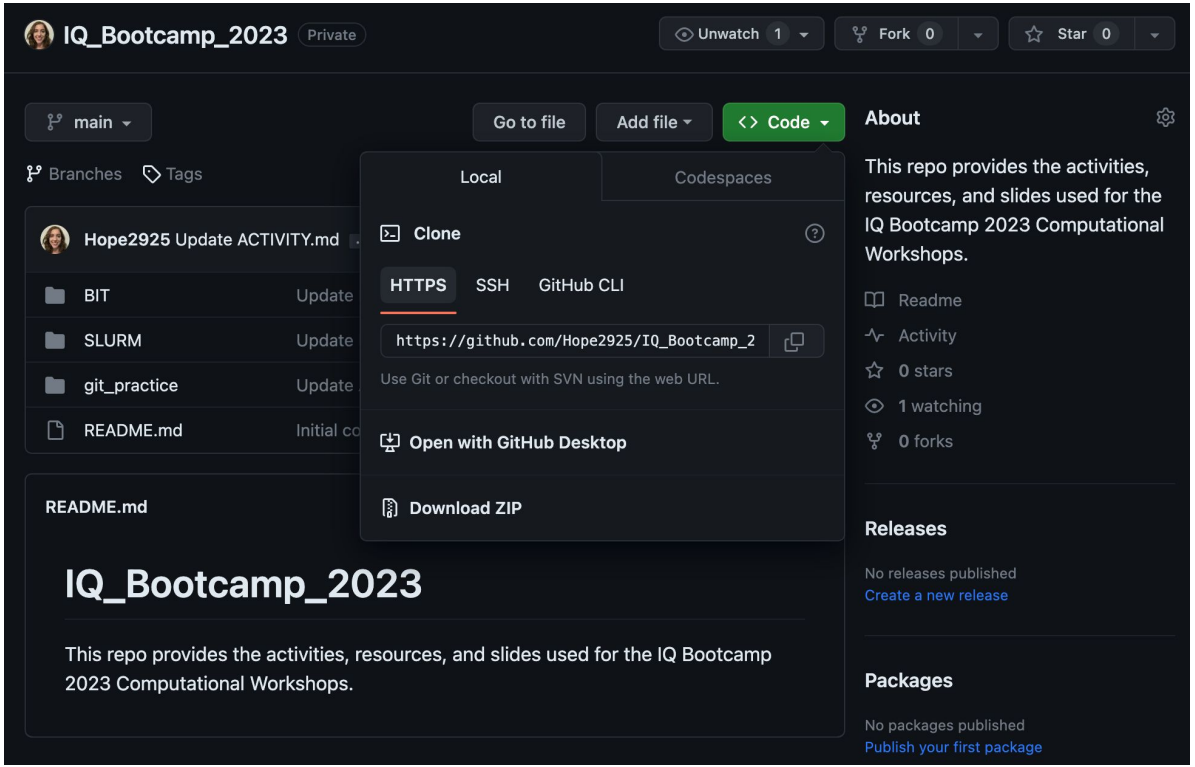
https://webstockreview.net/images/computer-clipart-cartoon-17.png

https://th.bing.com/th/id/R.9a92c8ab1ff98d4e481db26aad891f6c?rik=sH0%2bkXrTR14Q2w&riu=http%3a%2f%2fimages.clipartpanda.com%2fcloud-clip-art-rgtaylor_csc_net_wan_cloud.png&ehk=fUTpEgFYst3e50jWfwoZz3x4jBfzNZGlgUedhkpebSc%3d&risl=&pid=ImgRaw&r=0

https://www.pngarts.com/files/8/Github-Logo-Transparent-Background-PNG.png

How do we stay connected? (steps 1 & 2 of ACTIVITY.md)

1. Find Github repository (can create one or use another's)
2. Clone the repository:
   a. Copy the https link



Why is there https:// and ssh://?

- How can the remote system ensure only certain people can read/write the repositories?
  - It must be able to recognize the User securely
- 2/3 ways: Personal Access Tokens (PATs) (https) & SSH keys (ssh)
  - We will be using PATs today as they have some advantages over SSH. Interested in more? Click here for a short layman description and here for Github's description.
- But for now, let's see what happens if you don't have one.

Demo: Continue by following ACTIVITY.md Step 3 on

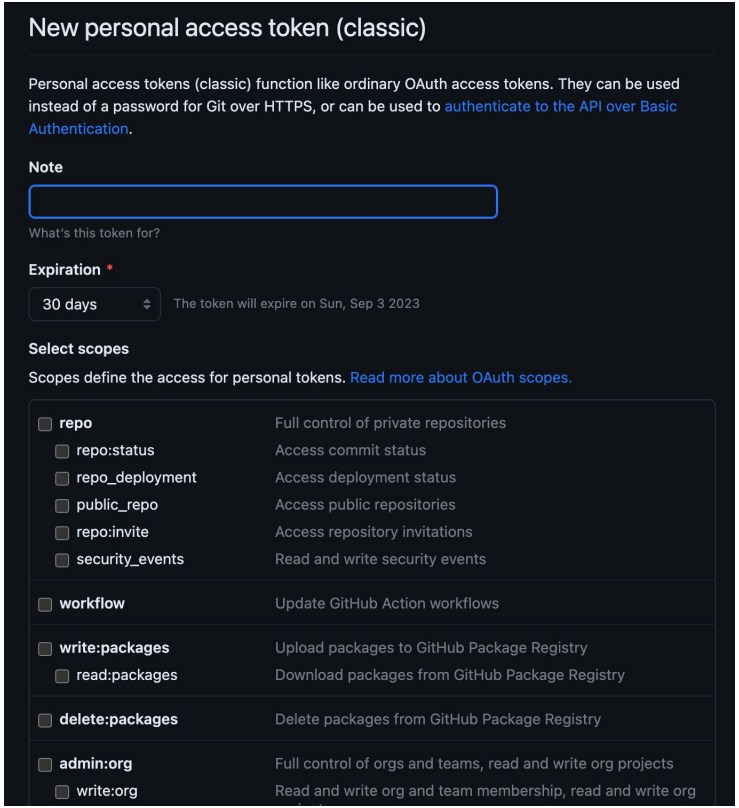
Create a personal access token

Full instructions on ACTIVITY.md

1. Create a PAT
2. Type a name/note
3. Select the access you want
4. Copy the token password and save it somewhere on your computer

This is what you'll type in as your password

Alternatives?



If time… branches

How does a tool posted on Github make updates without messing up the current version?

Branches!!

Code for using branches can be found on the README