

Git and GitHub

Announcements

- Problem set 1 due this Thursday at 10pm
(submit through GitHub! – we'll demo later)
- Reminder about office hours this Wednesday 2.30-3.30pm on Zoom (usually on Tuesdays)









Learning objectives

- Re-locate your personal GitHub repo through which you'll be submitting homework and exercises for this course
- Create and edit plain text files on GitHub
- Navigate the commit history of a repository and a file on GitHub
- Clone a repository locally using RStudio
- Sync local changes to a file back to remote (and GitHub) with pull, stage, commit, push
- Describe the advantages of a project-oriented workflow in RStudio and set up a version-controlled project directory on your computer

Why Git and GitHub?

Why Git and GitHub?

Avoiding this:

<input type="checkbox"/> Name	Date modified	Type
 Rscript_4_21_2016.R	5/1/2016 3:03 PM	R File
 Rscript_4_22_2016a.R	5/1/2016 3:03 PM	R File
 Rscript_4_22_2016b.R	5/1/2016 3:03 PM	R File
 Rscript_4_24_2016.R	5/1/2016 3:03 PM	R File
 Rscript_final.R	5/1/2016 3:03 PM	R File
 Rscript_final_final.R	5/1/2016 3:03 PM	R File
 Rscript_really_final.R	5/1/2016 3:03 PM	R File
 Rscript_really_really_final_final.R	5/1/2016 3:03 PM	R File

Git is the software you will use locally to record changes to a set of files

GitHub is a hosting service that provides a Git-aware home for such projects on the internet
(essentially a social media platform for your Git-versioned files)

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1 branch

1 tag

[Go to file](#)[Add file](#)[Code](#)

makopyan lesson3



6b60190 1 hour ago



320 commits



analysis

lesson3

1 hour ago



assignments

assn1

4 days ago



datasets

Formatting changes

5 months ago



docs

Build site.

1 hour ago



img

Edited activity

5 days ago



in_class_exercises

Formatting updates

5 months ago



lecture_notes

lesson3

6 days ago



misc

Update lesson3

1 hour ago

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Packages

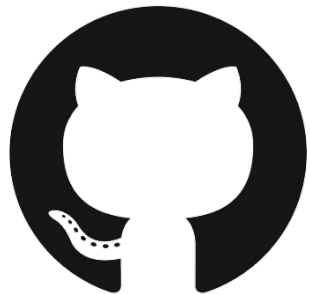
No packages published

[Publish your first package](#)**makopyan lesson3**

✓ 6b60190 1 hour ago

320 commits

	analysis	lesson3	1 hour ago
	assignments	assn1	4 days ago
	datasets	Formatting changes	5 months ago
	docs	Build site.	1 hour ago
	img	Edited activity	5 days ago
	in_class_exercises	Formatting updates	5 months ago
	lecture_notes	lesson3	6 days ago
	misc	Update lesson3	1 hour ago



GitHub

Branching

Forking

Push

Pull request

Cloning

Blame

Commit

Merge

We'll get to all of these....
But one thing at a time!

Branching

Forking

Push

Pull request

Cloning

Blame

Commit

Merge

Key terms

Repository or repo

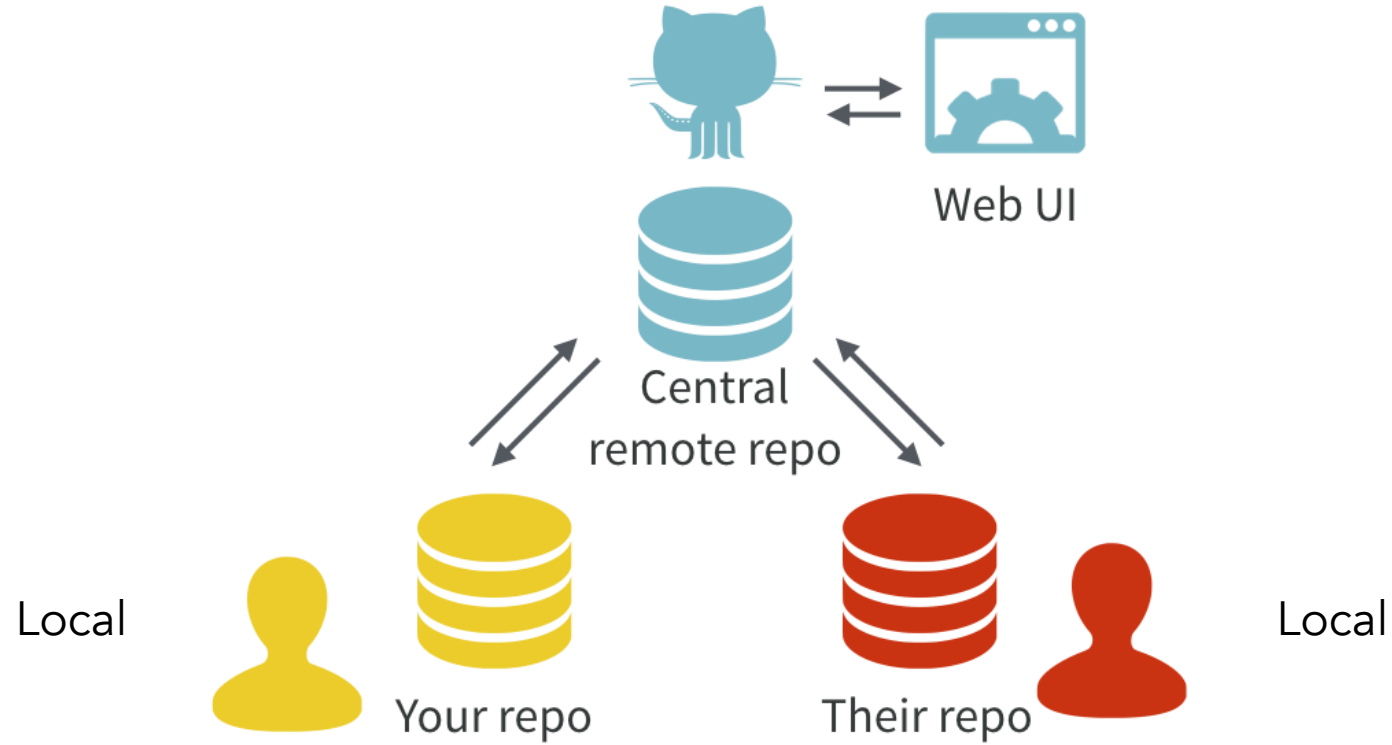
A directory of files that Git manages holistically

A commit

A snapshot of all the files in the repo, at a specific moment

Diff

Difference between two versions of a file or set of files. Associated with a commit message (summarizes and conveys the motivation for the change)



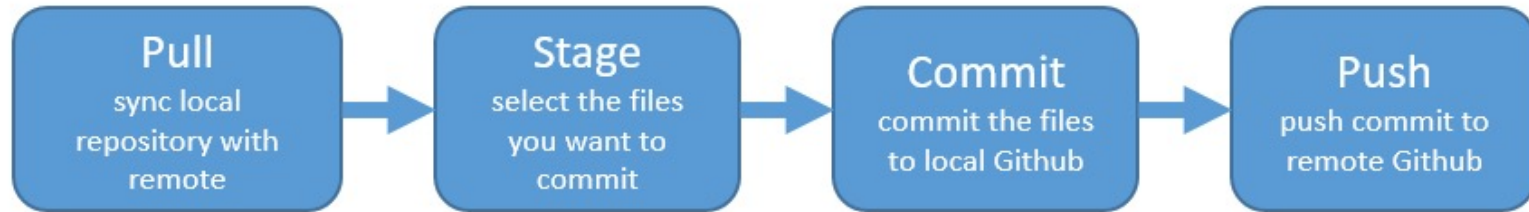
Account types

- Repositories (aka "repos"): All files must be organized into repositories. Think of these as self-contained projects. These can either be public or private.
- User accounts vs. organization accounts (aka "Org"): All repositories belong to an account:
 - A user account is your own personal account, and typically holds repositories related to your own work
 - An organization account can be owned by multiple people, and typically holds repositories relevant to a group (like therkildsen-class)

Exercise - editing navigating_github.md

- Add the URL's (with commentary) to
 - your personal class repo
 - your user account page
- Commit the changes
- Next, create a new subdirectory for course notes (remember to not use spaces in names, so you can call it something like course-notes)

Sync from RStudio (local) to GitHub (remote)



File changes



Added



Deleted



Modified



Renamed



Untracked

Exercise

Edit your README either directly on GitHub or in RStudio and practice syncing (pull, stage, commit, push). For example,

- Indicate whether you're taking the course for credit
- Add a fun fact about yourself
- Add another line of text with some styling (bolds, italics, headers, bullets etc.)
- Explore your Commit History