

Version Control: What, Why & Welcome

Git & Github



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Technical Tuesdays

Introduction
15 Oct

R Scripting
29 Oct

JavaScript
19 Nov

Version Control
03 Dec

*nix Shell
22 Oct

Python
12 Nov

Databases
26 Nov

Mapping Latex?
10 Dec



Road map

1. Define version control
2. Recall why version control is crucial for researchers
3. Tell the difference between Git and Github
4. Demo: my first project
5. Give extra learning resources



Version Control

Management of **changes**, called **revisions** to any types of information

- Simple file versioning
add v1.0, v1.1, ... to filenames
- Simple tools: Google Drive, Dropbox...
- Advanced tools: subversion and git

Revision: Change associated with a **timestamp** and the **person** making the change

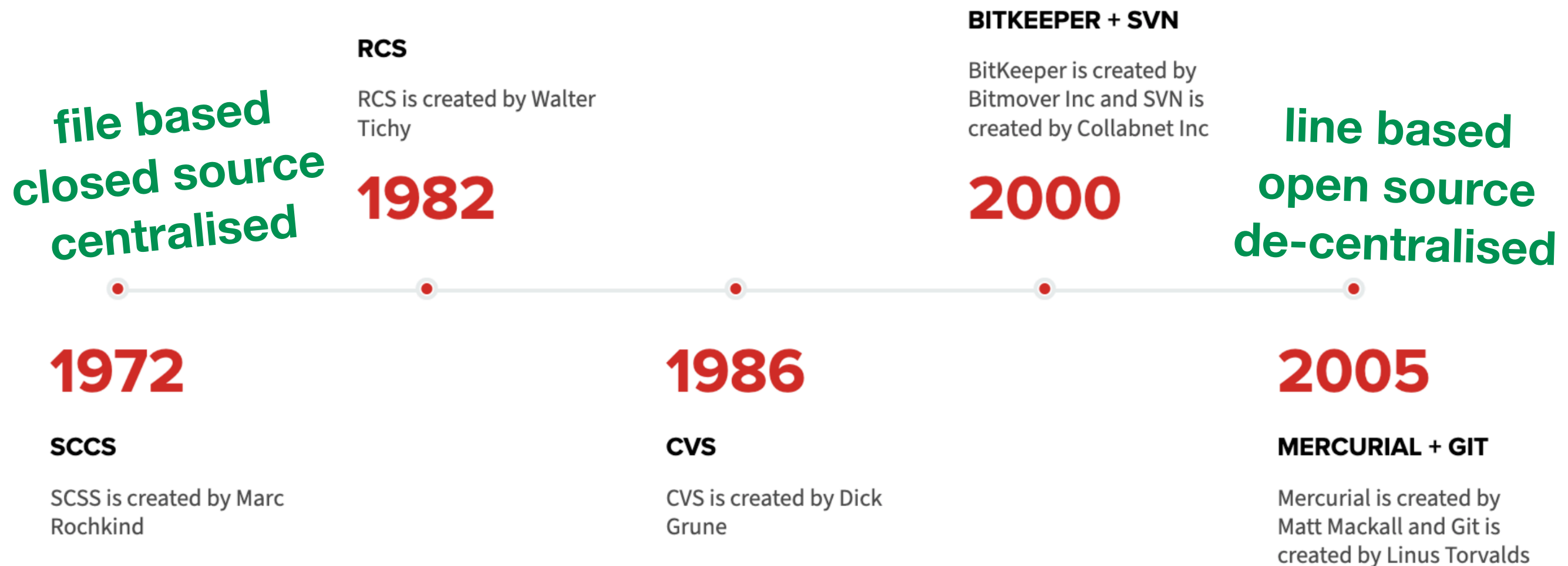


Benefits:

- Time machine
- Change log
- Collaboration



Historical overview



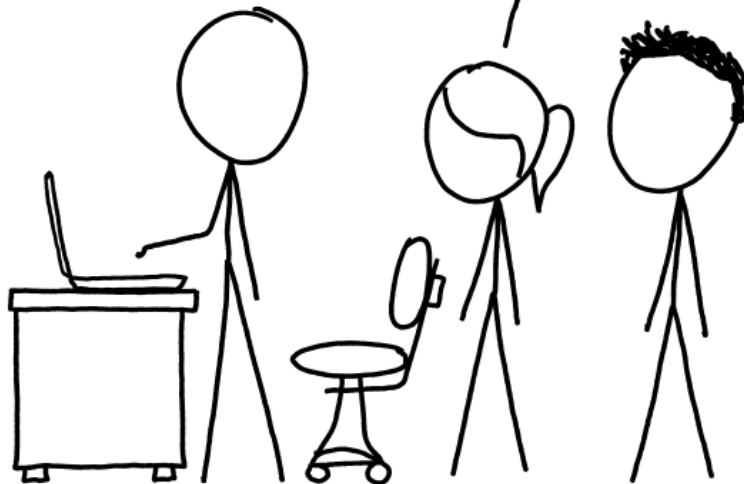
<https://initialcommit.io/blog/Technical-Guide-VCS-Internals>

Git is a distributed version control system

THIS IS GIT. IT TRACKS COLLABORATIVE WORK ON PROJECTS THROUGH A BEAUTIFUL DISTRIBUTED GRAPH THEORY TREE MODEL.

COOL. HOW DO WE USE IT?

NO IDEA. JUST MEMORIZE THESE SHELL COMMANDS AND TYPE THEM TO SYNC UP. IF YOU GET ERRORS, SAVE YOUR WORK ELSEWHERE, DELETE THE PROJECT, AND DOWNLOAD A FRESH COPY.



“Git allows groups of people to work on the same documents at the same time, and without stepping on each other's toes.”

You might enjoy the Git parable:
<http://tom.preston-werner.com/2009/05/19/the-git-parable.html>



GitHub is an online service

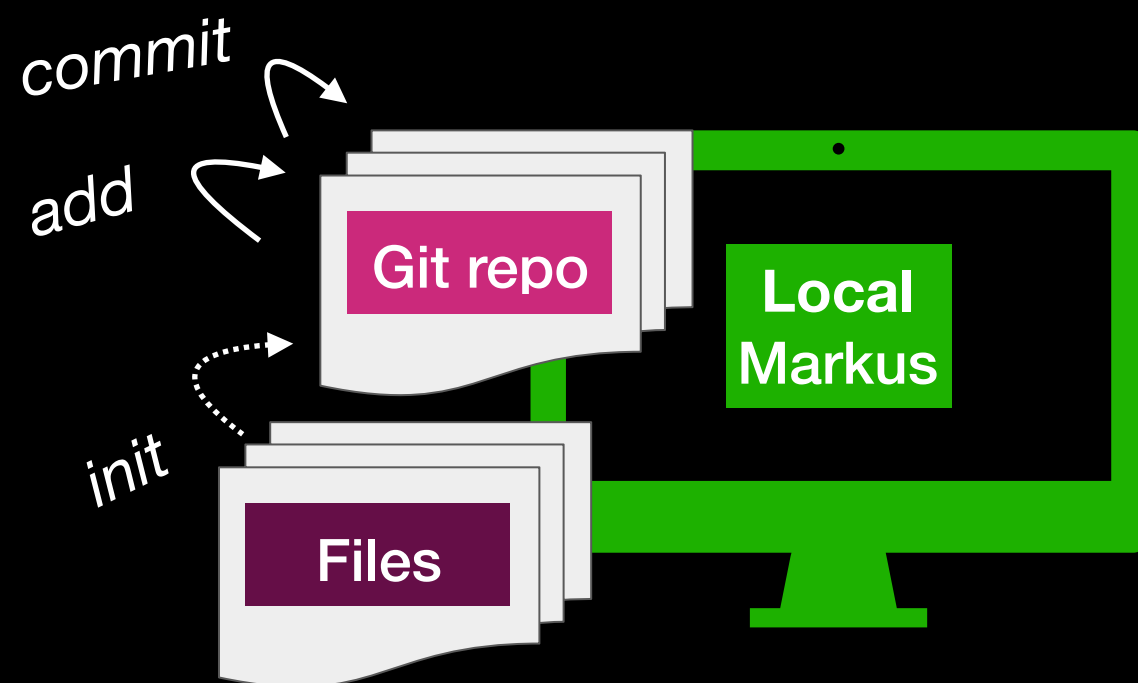
- Social platform – collaboration, coordination and contributing
- Time machine
- Documentation & sharing
- Project management
- Proprietary but free for researchers

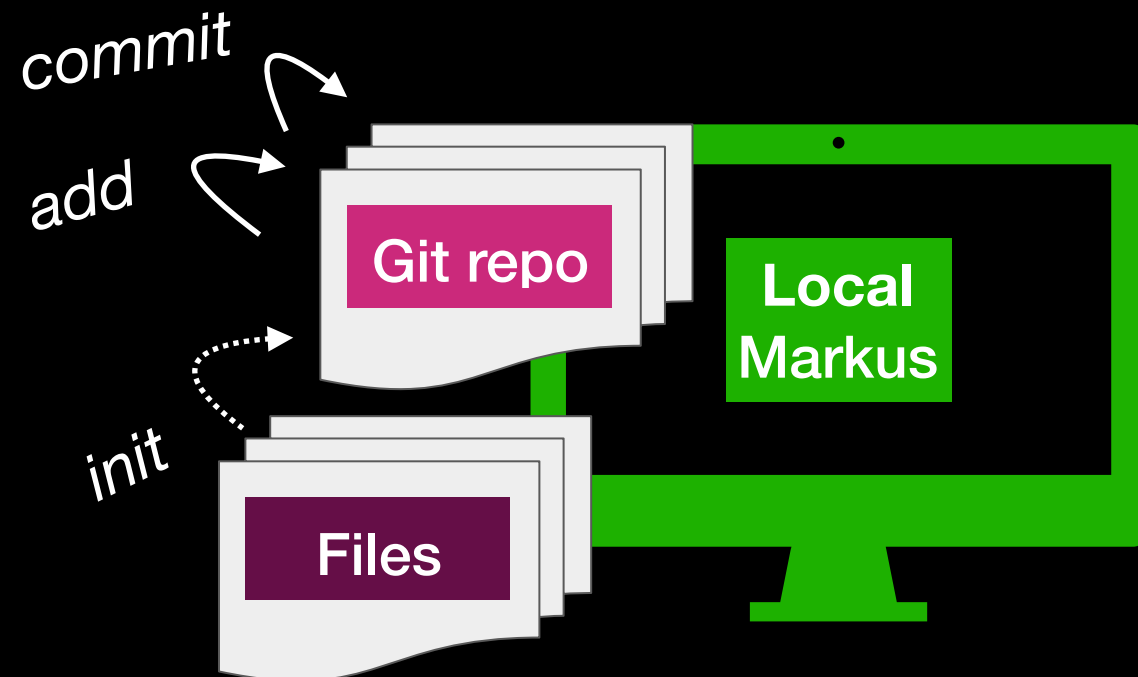
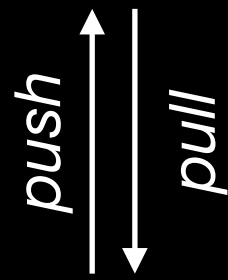
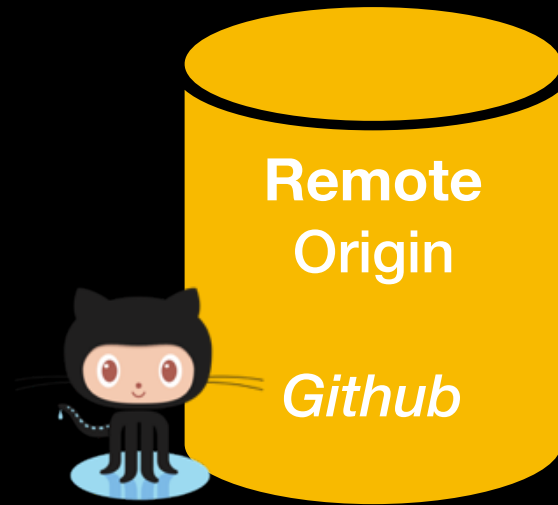
Interfaces to GitHub

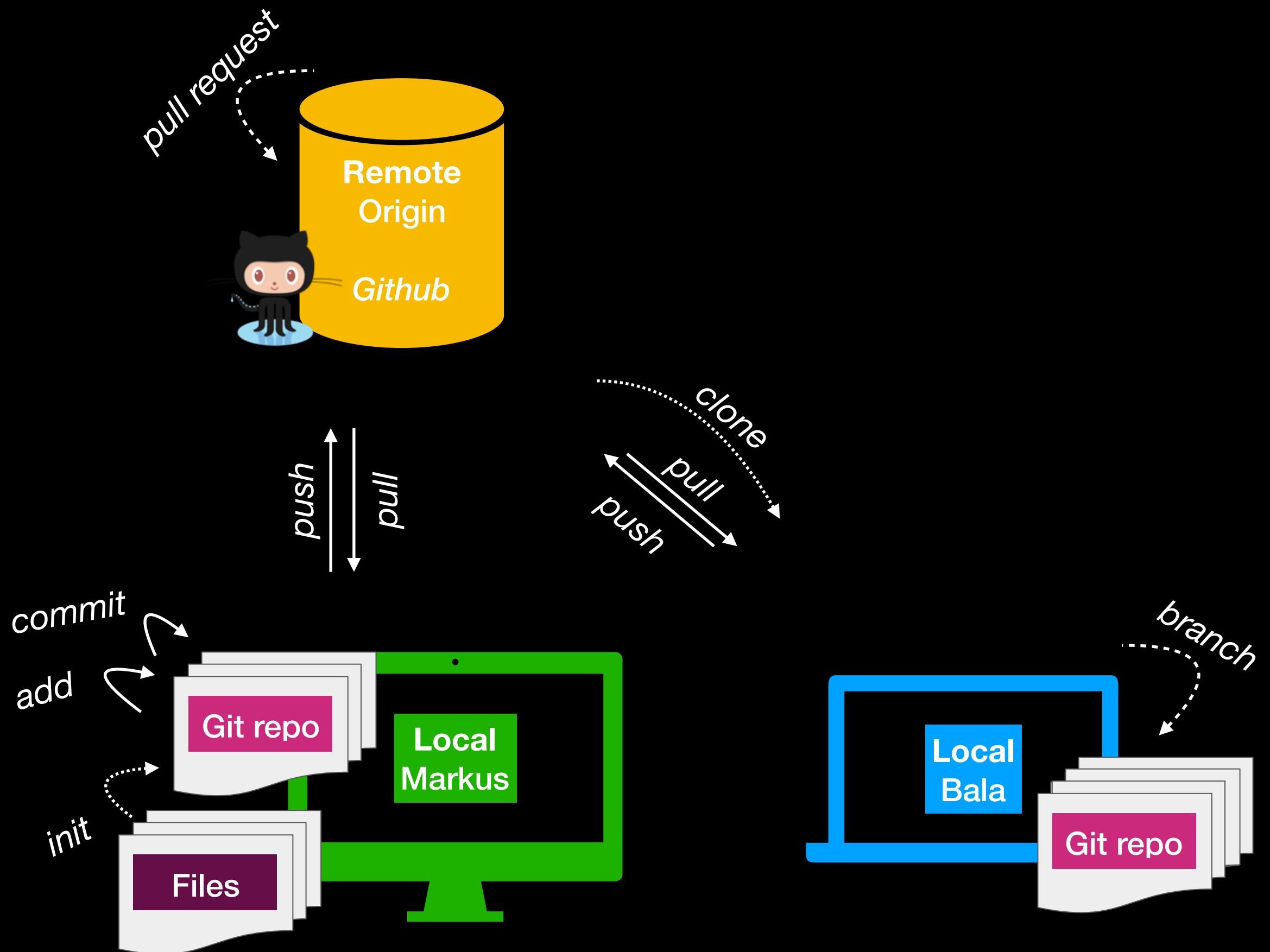
- directly online
- with the Github Desktop App
- via the command line using 'git'
- via IDEs (RStudio, PyCharm, etc.)

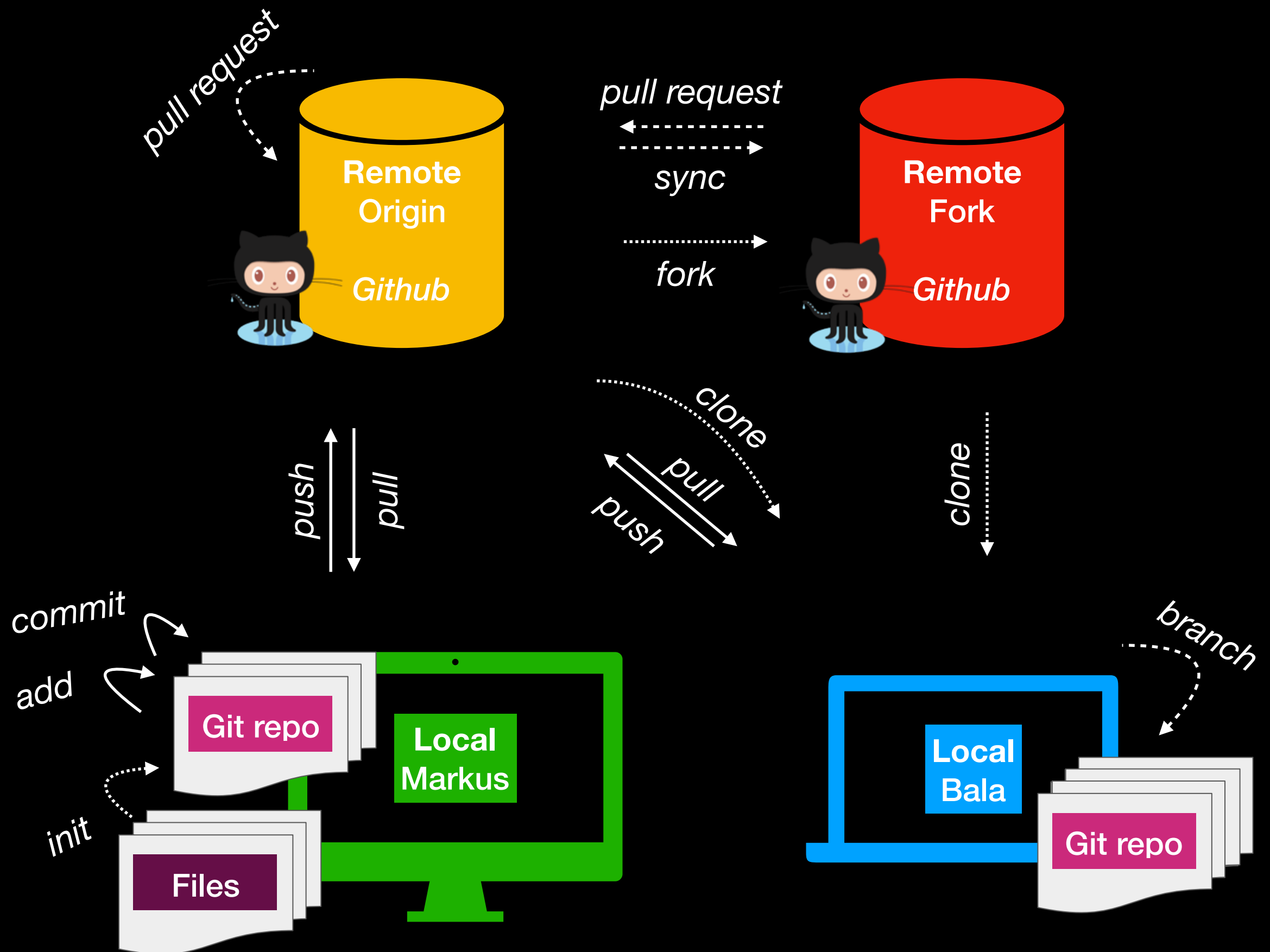


Demo









Resources

- **Github intro:** all slides adapted from <https://kirstiejane.github.io/friendly-github-intro/> (CC BY 4.0 license, Mozilla Science Lab & Kirstie Whitaker)
- **Software carpentry tutorials:** <http://rits.github-pages.ucl.ac.uk/software-carpentry/>
- **GUIs:** Github Desktop, GitKraken, Sourcetree, among others
- **Alternatives:** GitLab

Questions?

Feedback!

<https://balamurugans.typeform.com/to/IVyuH8>