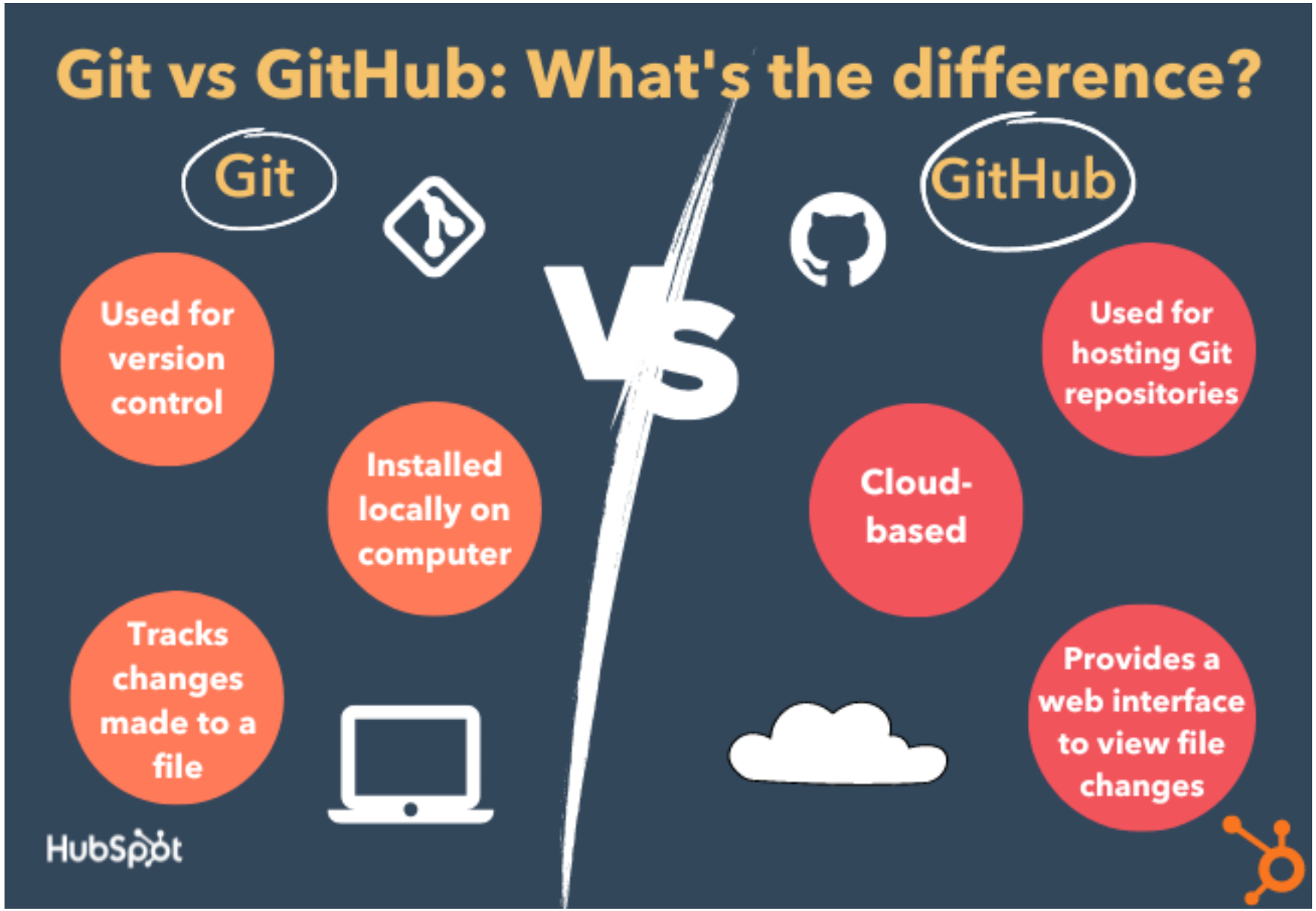
Git and GitHub

KCL Geocomputation, March 2025


Git vs GitHub: What's the difference?
Git
GitHub
VS
Used for version control
Installed locally on computer
Tracks changes made to a file
Used for hosting Git repositories
Cloud-based
Provides a web interface to view file changes
HubSpot

source

Tour de GitHub

- Profile page
  - How to customize
- Repositories (‘repos’)
  - About – Structure Tips – Best Practices
- Engaging with Others
  - Stars (bookmarks and ‘likes’) – Organising (Lists)
  - Watching (get notifications about repo changes)
  - Following (get notifications about user activity)
  - Dashboard (your news feed, based on stars, watching, following)

Version Control

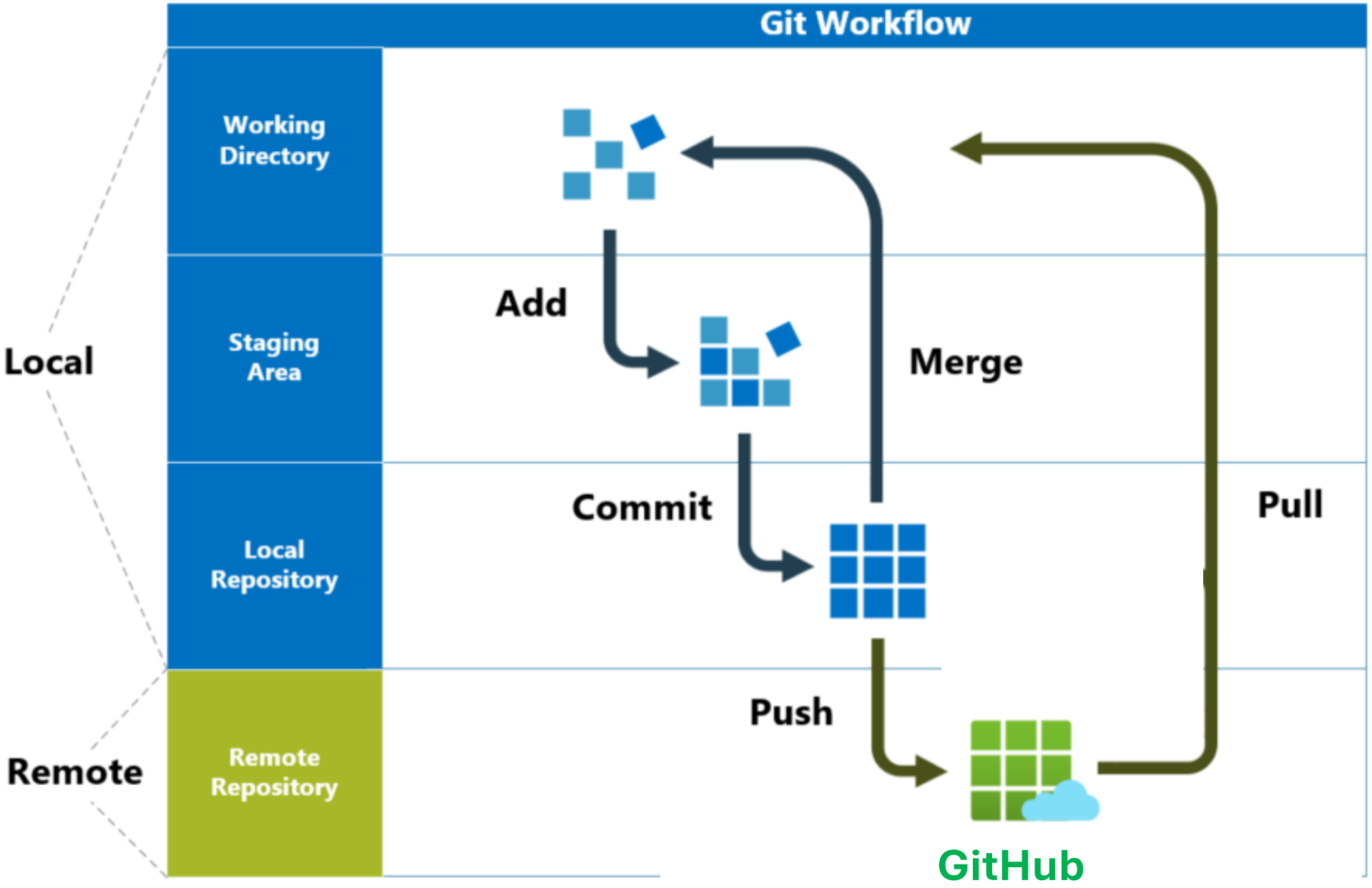
- Repository (‘repo’): *a set of files whose history of changes is tracked*
  - *Local:* a repository on your computer
  - *Remote:* a repository on an online service such as GitHub

Git tracks changes of plain text files (code, notebooks, md) but *NOT* word docs, images, etc.

Local changes are not immediately reflected on remote
(‘push’ from local to remote)

Git Commands

- Commit (and Add)
  - A ‘commit’ is a set of changes to one or more files in a repository *recorded by git*
  - Changes made to local files are not recorded by git until they are committed
  - Before committing, changes need to be ‘Added’ to the staging area
- Push
  - Moves commits in the local repo (your computer) to the remote repo (GitHub)
- Pull (or Clone, initially)
  - Copies the latest version of files in the remote repo to your local repo
  - Clone creates a local repo from a remote repo if it does not yet exist



(or Clone, initially)

source

Learning by doing

1. Create the repo on GitHub
2. Clone locally (‘clone’)
   - 1+2 could be done using ‘init’ locally (but then we would separately need to create a remote repo on GitHub)
3. Create a text file and add it to the working directory
4. Stage the changes (‘add’) then commit locally (‘commit’)
5. Push local changes to remote (‘push’)
6. Check GitHub to see the changes!

Useful Resources

- https://git-is-my-lab-book.net/
- https://happygitwithr.com/
- https://github.com/jamesdamillington/git-guide