Short Intro Git

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What is it used for?

▶ Imagine have to code large model with coauthors: many functions in different files, different parametrizations, some versions code work others not, don't know what coauthors have changed...

▶ **Version control system (VCS):** Is a system that records changes to a file or set of files over time so that you can recall specific versions later.

▶ **Distributed VCS:** the complete codebase, including its full history, is mirrored on every developer's computer. Enables automatic management branching and merging, speeds up most operations (except pushing and pulling), improves the ability to work offline, and does not rely on a single location for backups
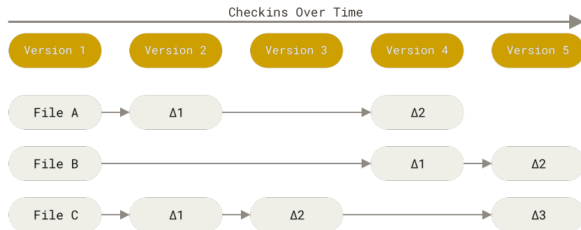
▶ Git is distributed

Git difference

Figure 4. Storing data as changes to a base version of each file
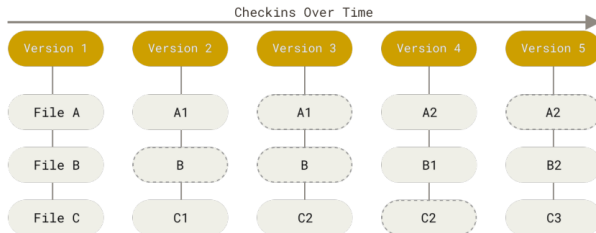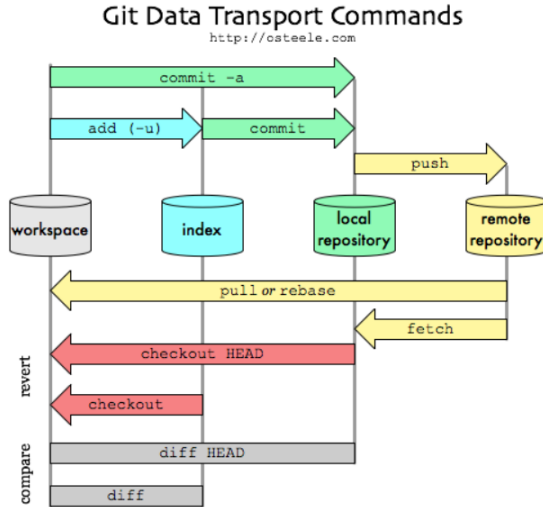

Figure 5. Storing data as snapshots of the project over time

Useful basics
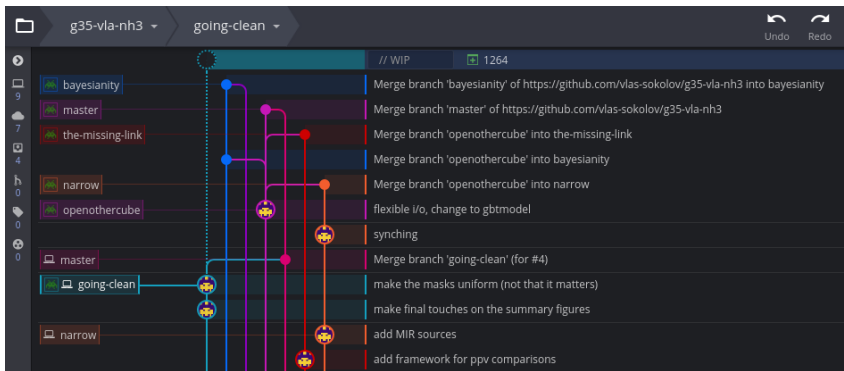
- **Clone existing repository: basically you get a copy of a repository on your computer (or dropbox)**
- So instead of going to DynamicProgramming repository in the GitHub webpage, can just have it in a folder in your computer
- First thing you do when start contributing to a repository

Useful basics: Push and pull

https://stackoverflow.com/questions/2745076/what-are-the-differences-between-git-commit-

Branching

▶ Branching means you diverge from the main line of development and continue to do work without messing with that main line.

▶ Branching works very well with git

(Gitkraken)

GitHub and user interfaces

- ▶ GitHub is the single largest host for Git repositories

- ▶ Can use Git directly on command line. But easier to use user interfaces:
    - ▶ Most popular: GitHub Desktop and GitKraken (recommended by Andreas)

If want to know more

Read: https://git-scm.com/book/en/v2
Sections 2, 3, 5, and 6 most important