Git Introduction

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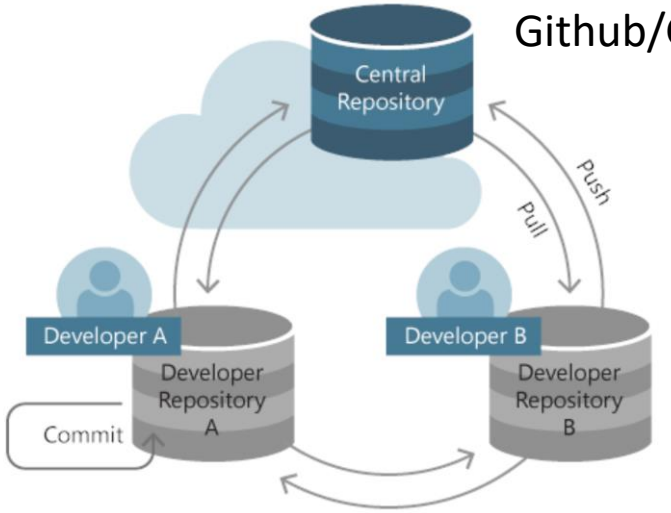
Github/Gitlab

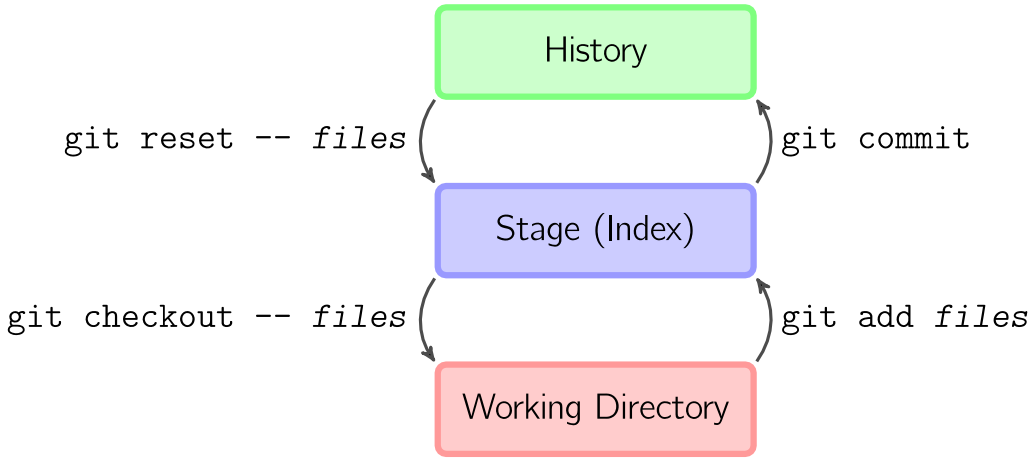
Why git?

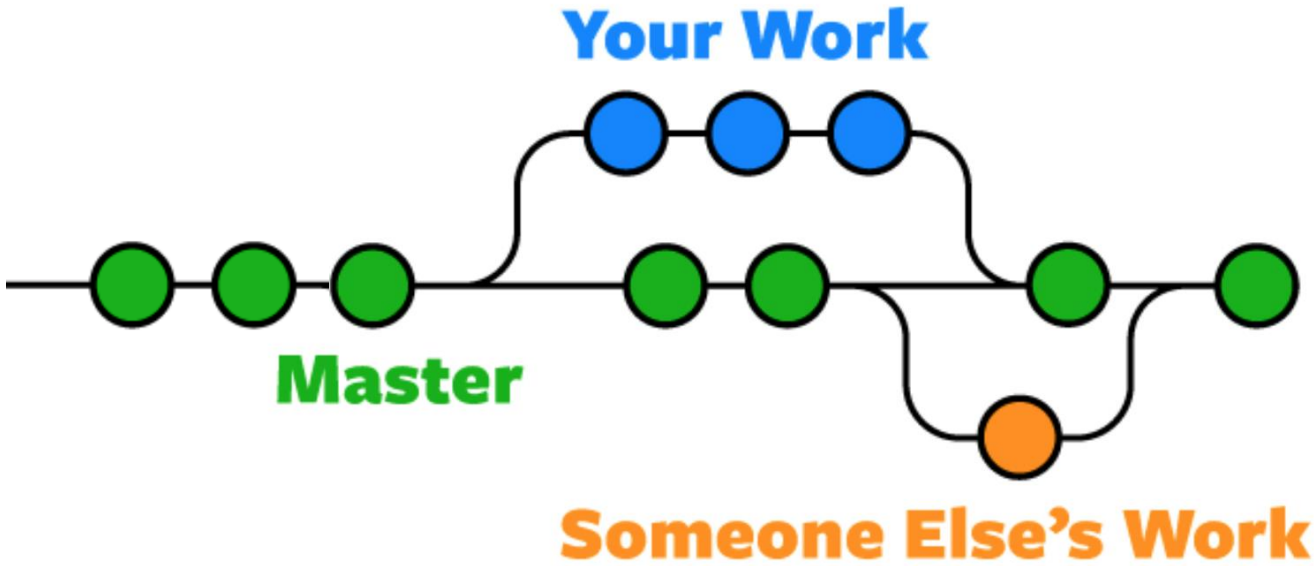


- Working together on the same code without disaster
- Version control: See changes over time. Being able to go back to previous state easily. (Not: Filename_V1, Filename_V2, …)
- Standard method in industry.
- Use for text-based file formats (.cs, .tex, .csv, …), but also for binary files (.excl, .docx, ….) helpful.

What is git?

- Save state of **repository** in **commits**. Create **branches** and **merge** them.





- Controlled by terminal commands. (Or different GUIs, best start with terminal)

Demo

Have a Gitlab account

- ETH is providing a Gitlab account to you. Sign in with your nethz login: https://gitlab.ethz.ch/users/sign_in

Install Git

- Windows: https://gitforwindows.org

- Once installed,
- Each commit has an author. Provide your name and mail address.
- Open terminal:
  - git config --global user.name "YOUR_USERNAME"
  - git config --global user.email "your_mail_address "

Create ssh key and add it to Gitlab account

- With SSH keys, you can connect to GitHub/GitLab without supplying your username or password at each visit
- Create ssh key: https://gitlab.ethz.ch/users/sign_in
  (Use GitHub)
- Add it to Gitlab account:
  https://docs.gitlab.com/ee/ssh/#add-an-ssh-key-to-your-gitlab-account

Other tutorials / further references

- Decent introduction:
  - https://www.freecodecamp.org/news/learn-the-basics-of-git-in-under-10-minutes-da548267cc91/
    (start from step 2)
- Commiting only part of current changes : git add –p
  https://gist.github.com/mattlewissf/9958704
- Cheatsheet with most common commands:
  https://about.gitlab.com/images/press/git-cheat-sheet.pdf

Good practices

- Commit small pieces!
- Name each commit reasonably, so that it is descriptive.
- Push your changes from time to time to the remote repo on a branch with the same name. Creating a backup was never easier.
  Especially create such a remote backup before performing local git commands that you are not familiar with.