

‘git’ Lab

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What is git?

git is a very powerful tool for tracking, managing, and sharing changes to a set of files.

It's mostly used for computer code, but is also excellent for LaTeX, configuration files, websites, presentations, ...

What's the big deal?

- Powerful underlying formalism that essentially **solves** the problem of dealing with multiple people independently working on different components of the same project.
- Insanely well-engineered.
- Awesome for backups.
- Awesome for helping you understand your project.
- **Awesome for reproducibility.**
- Important for **becoming a better coder.**

[GitHub.com](https://github.com): >4.5 million users in <6 years; 6 million projects.

How does it work?

Special directories called **repositories** contain not just your files, but also a hidden set of snapshots and metadata used by git.

You do whatever you want to do with your files, but periodically **commit** changes, and possibly fetch updates from other people working on other copies of the same repository.

Git never forgets anything. It stores **every version of every file you ever commit**. Part of its fundamental magicalness is that it manages to do this ridiculously efficiently.

Is git right for me?

Yes. Yes, **yes**, yes, yes, yes, yes. Yes!

But it's a sophisticated tool and takes some time to learn. Practice is key. Just remember: those 5 million GitHub users are probably on to something.

Even if you're working on personal projects, the versioning capabilities are very helpful. Your future self will thank you.

Let's go to it!

It's time to partner up and start working on the lab!

- Make as much progress as you can in the time we have. You're encouraged to finish later on your own!
- No whispering!
- Take turns at the keyboard.
- The Hierarchy of Help:
 1. Your partner.
 2. Your neighbors.
 3. The lab assistants.
- Use "nano" to edit files.
- Prompts with bold braces **{like this}** mean you need to replace the braced portion with something that you have to figure out or choose on your own.
- If a program prints something, read it carefully!