Version control & Automation

[git & make]

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Outline

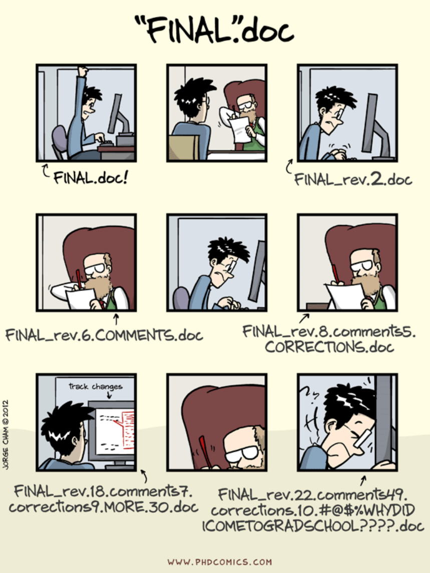
Version control

- What
- Why
- How (`git`)

Task automation

- What
- Why
- How (`make`)

Version control - *What* (not)



Version control

What

The modern scientist's lab notebook

- Keep track of changes in a project *as the occur*
- Document the changes
- Archive the history in a way that allows to easily roll back
- Tell differences with other versions (collaboration) and be able to merge them

Why

- **Sanity**: nothing "committed" is lost
- **Archival**: keep record on when what changed how
- **Collaboration**: work simultaneously with colleagues, properly merge and manage conflicts

git

Today:

- Set up a new project
- Track changes as you work
- Examine the change history
- Compare different versions
- Restore old versions of a file
- Other tricks to better manage your git project

Not today (but you should check it out):

- Collaboration with git
- Conflicts in git

git - Requirements & Setup

Task automation - *What*

- Avoid manually repeating tasks
- Scripting. . .

Task automation - *Why*

- Lazier/more efficient
- Less prone to errors

For this session, we have borrowed important amounts of inspiration and material from **Software Carpentry**'s session on git.