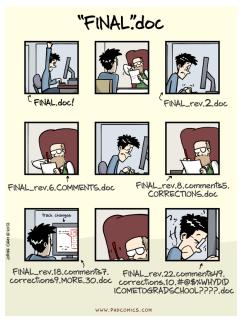
Make Incremental Changes

Version Control with git and GitHub



http://www.phdcomics.com/comics/archive.php?comicid=1531

Methods for tracking versions

- ▶ Don't keep track
- ► Save numbered files
- ► Formal version control

Suppose it stops working...

- Don't keep track
 - Good luck!
- Save numbered files
 - Manually compare files (with diff)
- Formal version control
 - Easy to study changes back in time
 - Easy to jump back and test



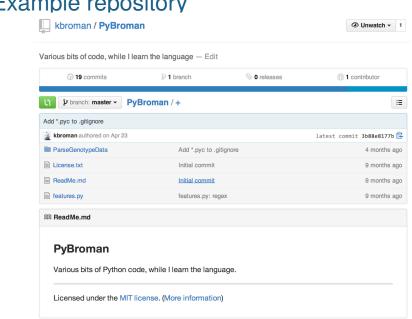


@mtholder motivating git: You mostly collaborate with yourself, and me-from-two-months-ago never responds to email. @swcarpentry

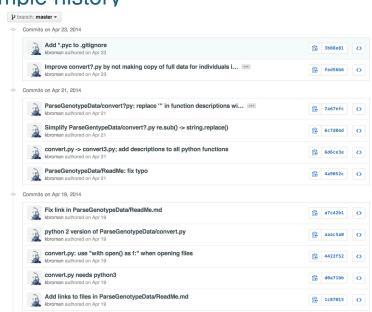
Why use formal version control?

- Backup files that are changing
- Store a history of those changes
- Explore that history
- No worries about breaking things that work
- Merge changes from multiple people

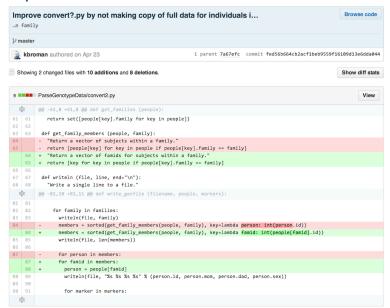
Example repository



Example history



Example commit



Why git?

- ▶ It's fast
- You don't need access to a server
- Amazingly good at merging simultaneous changes
- It's popular
- ► GitHub

Why git?

- ▶ It's fast
- You don't need access to a server
- Amazingly good at merging simultaneous changes
- It's popular
- ▶ GitHub
 - A home for git repositories
 - Interface for exploring git repositories
 - Like facebook for programmers (and data scientists)

It's not just for software

You can track any content (but mostly plain text files)

- source code
- data analysis projects
- manuscripts
- presentations
- websites