How do I manage my software?

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Survey

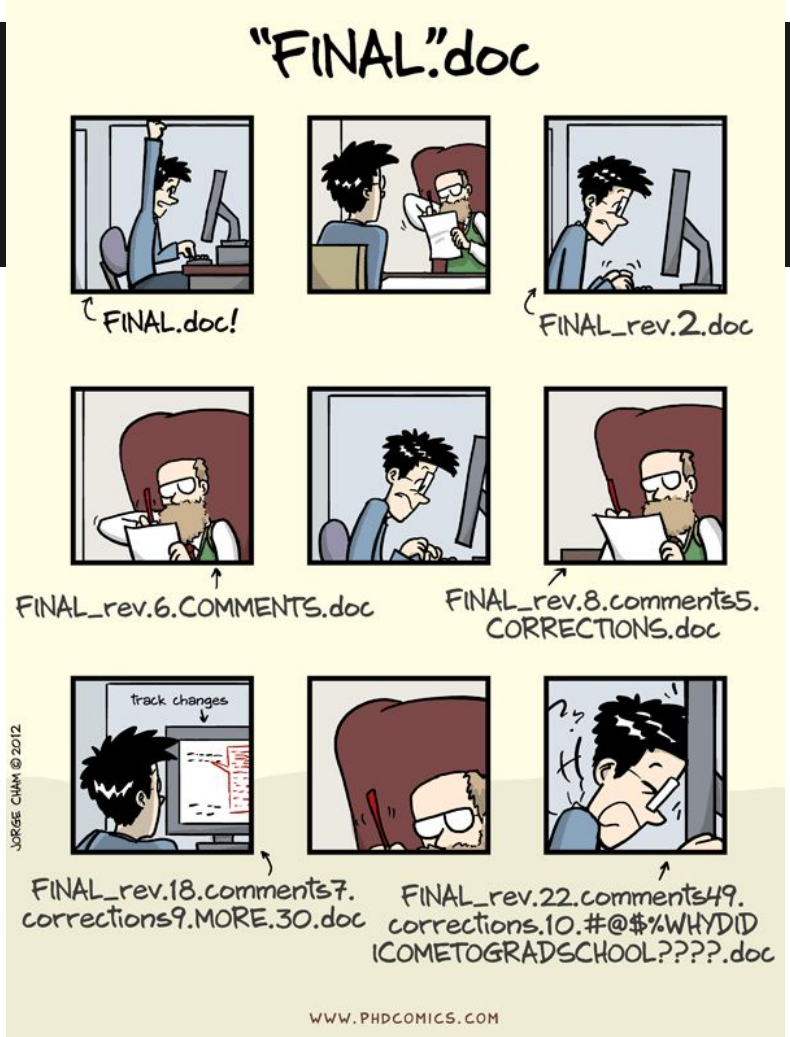
- who ever used subversion or git?
- who ever used Dropbox?

Intro

Who uses a version control system?

Intro

We all do



Version control features

See wikipedia: bit.ly/ucsd-wikipedia

Log of all changes, for each:

- Unique identifier
- Time and date
- Commit message

Common user cases

- Documents: papers/grants/lectures in TeX or Markdown or text format (No Word/Excel…)
- Analysis code in any programming language
- Tabular and text data

Example:

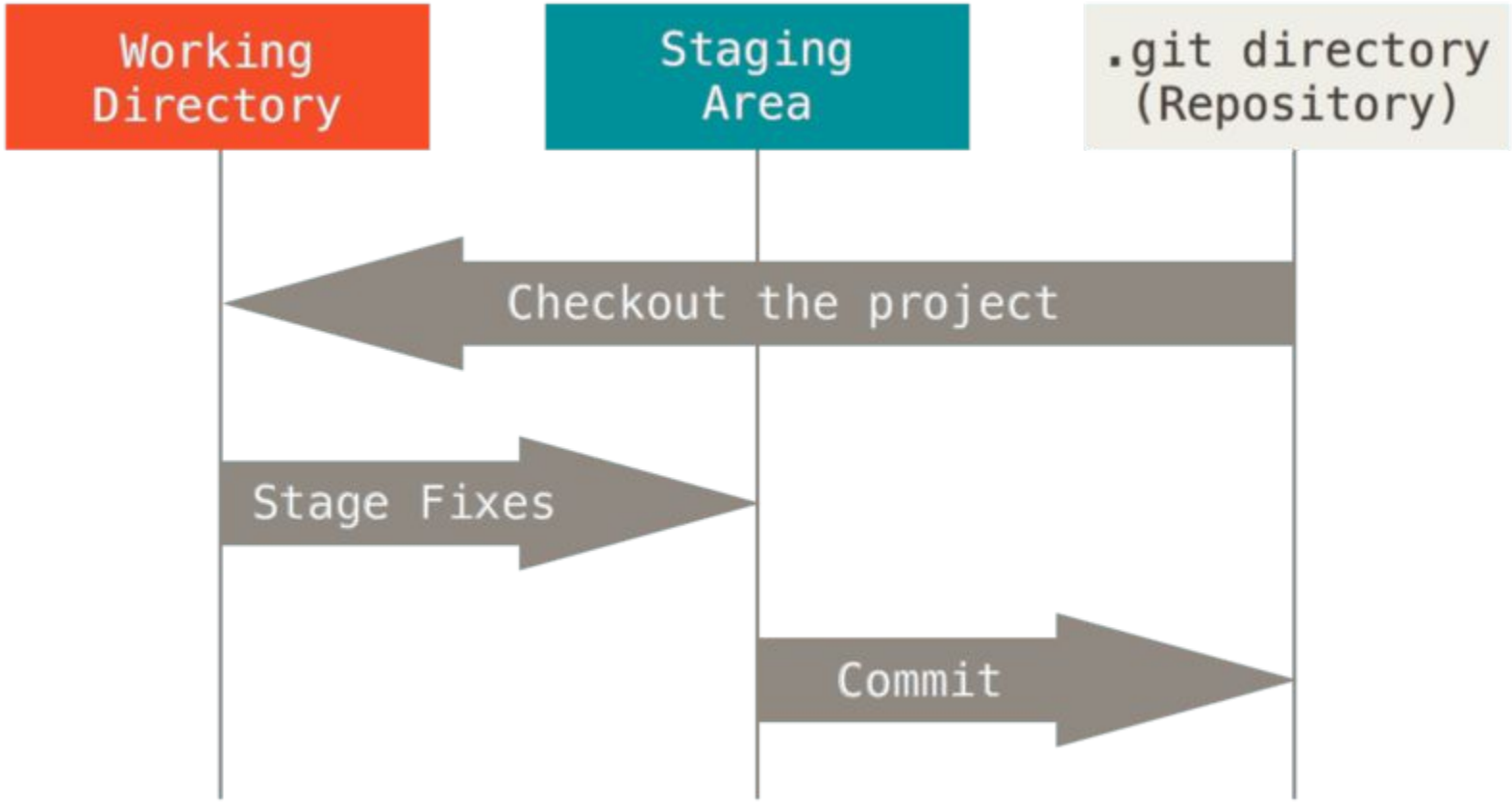
https://github.com/dib-lab/

Using git promotes:

- **Reproducibility** : logging of every step
- **Peace of mind** : a robust backup system
- **Flexibility** : zero-cost branching
- **Collaboration** : synchronization across multiple computers/ people

Tutorial

hands-on tutorial


Working Directory
Staging Area
.git directory (Repository)
Checkout the project
Stage Fixes
Commit

Workflow - small fixes

```
git checkout master
git pull origin master
git add modified-file.py
git commit -m "commit message"
git push
```

Workflow - large feature

```
git checkout master
git checkout -b improve-logging
# work and make several commits
git fetch # fetch updates from others
git rebase origin/master # rebase yours
git push origin improve-logging
# create a pull request and merge on github
```

Where to host your code

- Bitbucket.com: unlimited free private hosting for academia (.edu email)
- GitHub.com: offers 5 free private repositories for academia (.edu email)
- Both offer unlimited public repositories

Where to go from here

Use version control for every programming task, no exceptions!

Self-study material:

- http://swcarpentry.github.io/git-novice/