Git collaboration best practices

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Why use it? or better, why not use it?

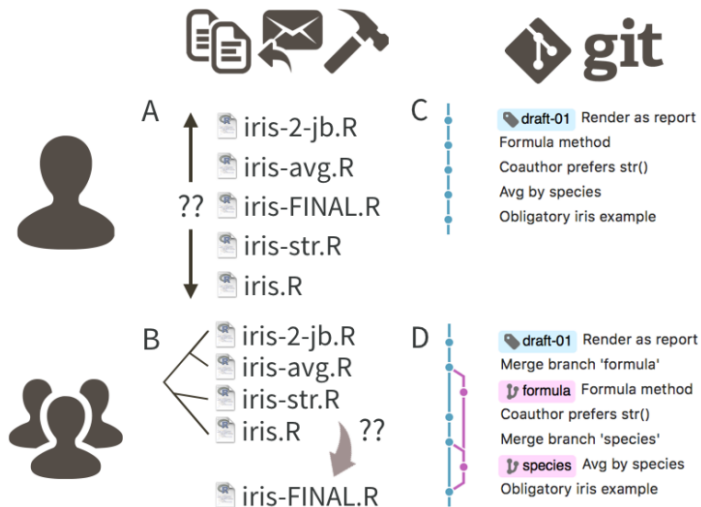► Everyone uses version control – this is a way to formalize it

Figure 1: A: Solo work with DIY version control via filename. B: Collaborative work with

Why use it? or better, why not use it?

- Project management
- It is your project's web presence, and part of your personal web presence; in some fields it is almost an expectation
- Part of a suite of open science tools

Arguments against

- It does take some buy-in from everyone participating
- (perceived to have) a steep learning curve

Stories?

- Does anyone have any good stories or horror stories?

Use cases

During

- ▶ use it solo to organize your work
- ▶ multiple team members can contribute to a repository simultaneously

After

- ▶ publish a repository to the web (e.g. to make results from a publication open and reproducible)
  - ▶ Note: this may require ongoing maintenance!

How it works

- what is git
- github and gitlab - central repository to keep all collaborators synchronized
- definition of master
- definition of fork and clone
- definition of push and pull

Git in RStudio

- Creating a new project under version control
- Making changes, committing, and pushing
- Pulling
- Branches (master vs other branches)

R package workflow

- ▶ Use this as a way to demonstrate how you would maintain a published product, and/or contribute to other people's projects

- ▶ introduce pull requests and issues (can be used internally or externally), issues can be used to track tasks/for project mgmt.

- ▶ there are other options for project management

- ▶ another example is submitting assignments in a class as issues to a repo that point to a commit

Example: Q's personal GitHub

- https://github.com/qdread
- DISCLAIMER: this does not entirely embody best practices!!!

Example: SESYNC Cyberinfrastructure GitHub

- https://github.com/sesync-ci/
  - Project containing all lessons in curriculum – good demonstration of project management
  - rslurm package – note the issues and pull requests

Outside resources

- Using zenodo to get a DOI for your published git repository
- Hadley Wickham's book on packages
- Excuse me, do you have a moment to talk about version control? Excellent paper by Jenny Bryan, which I shamelessly copied from for this presentation

SESYNC resources

- basic git lesson
- document with resources on learning GitHub Pages – this is still a draft in progress!