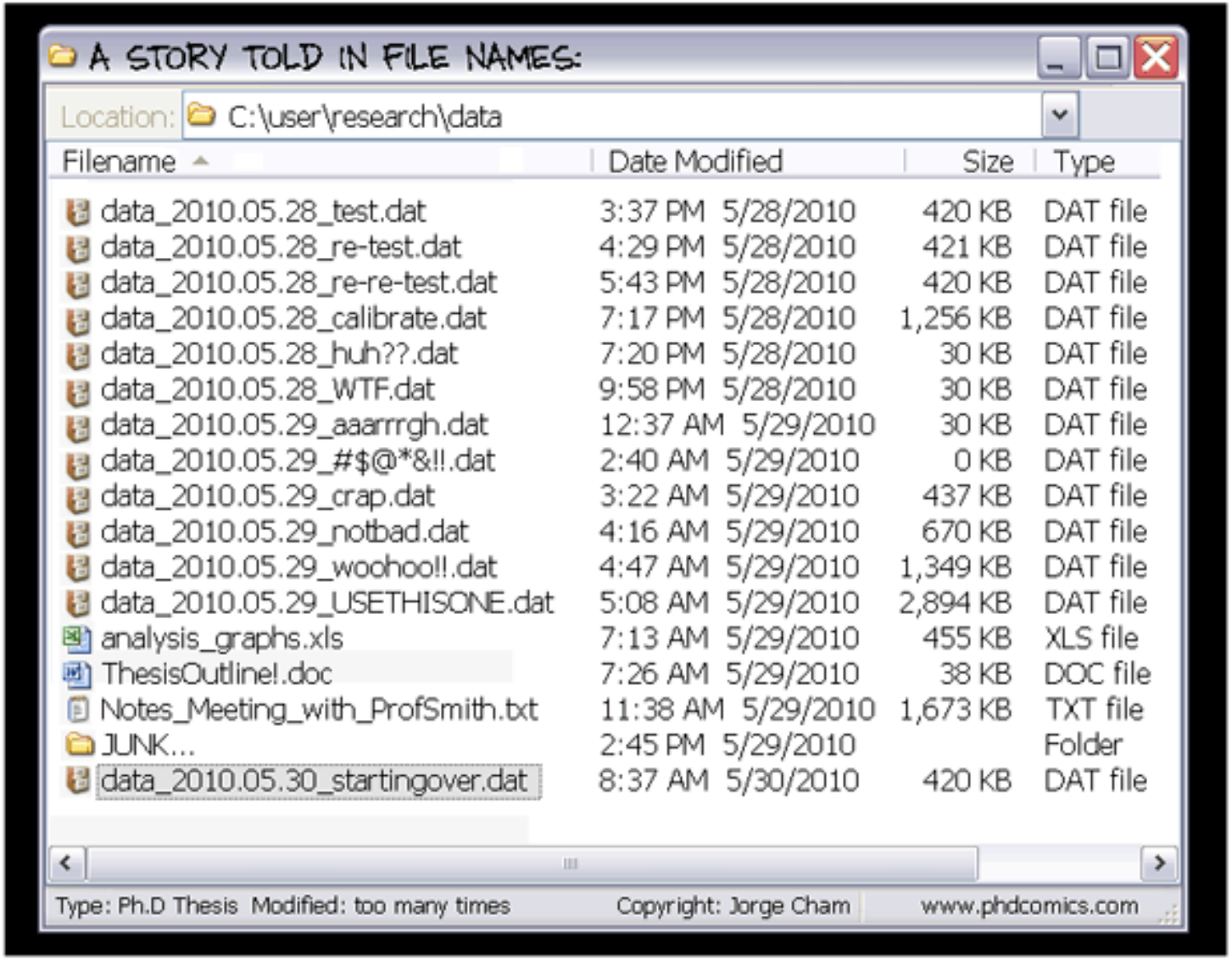
Efficient workflows with git & GitHub

Francisco Rodriguez-Sanchez

@frod_san

https://frodriguezsanchez.net

Version control without git



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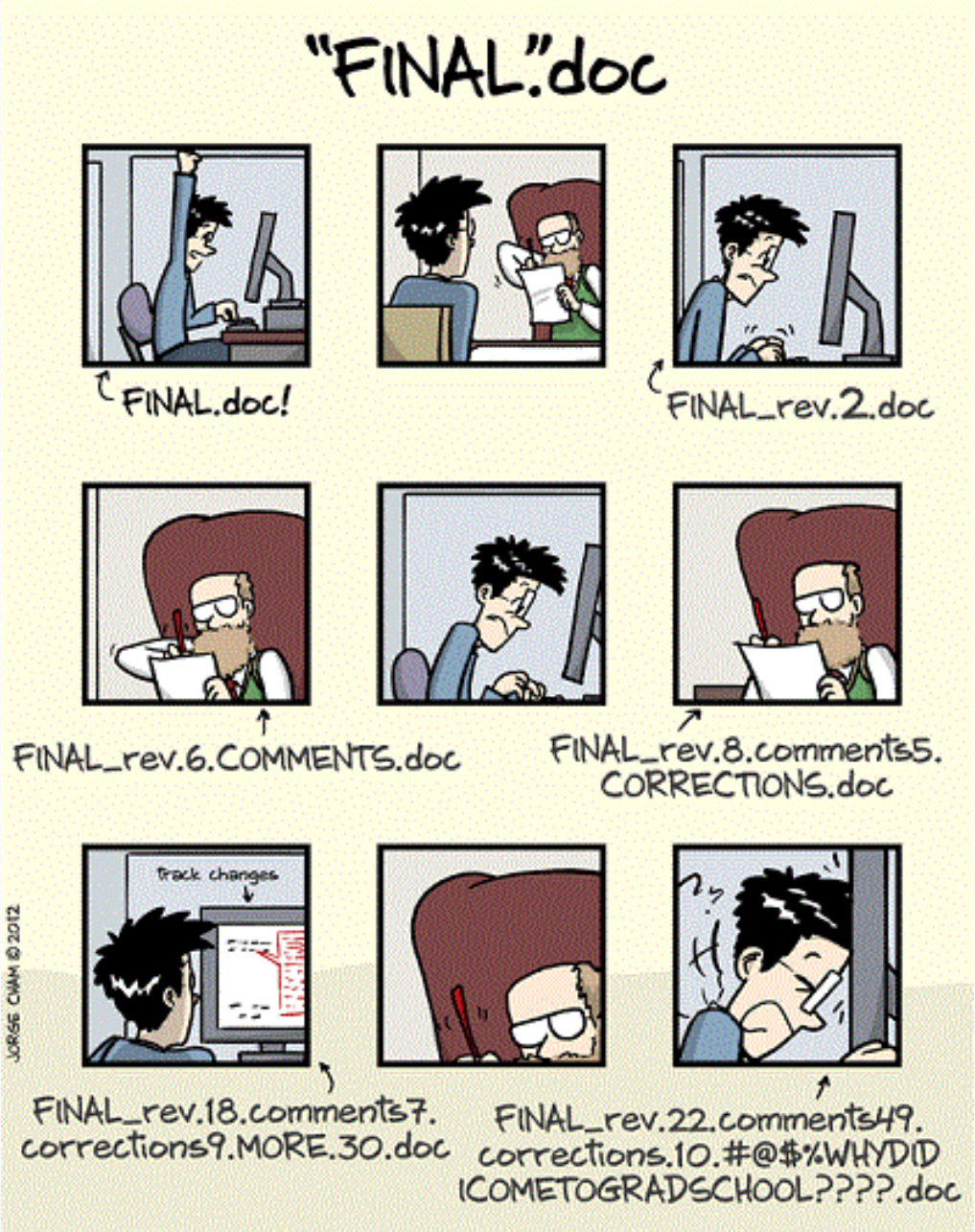

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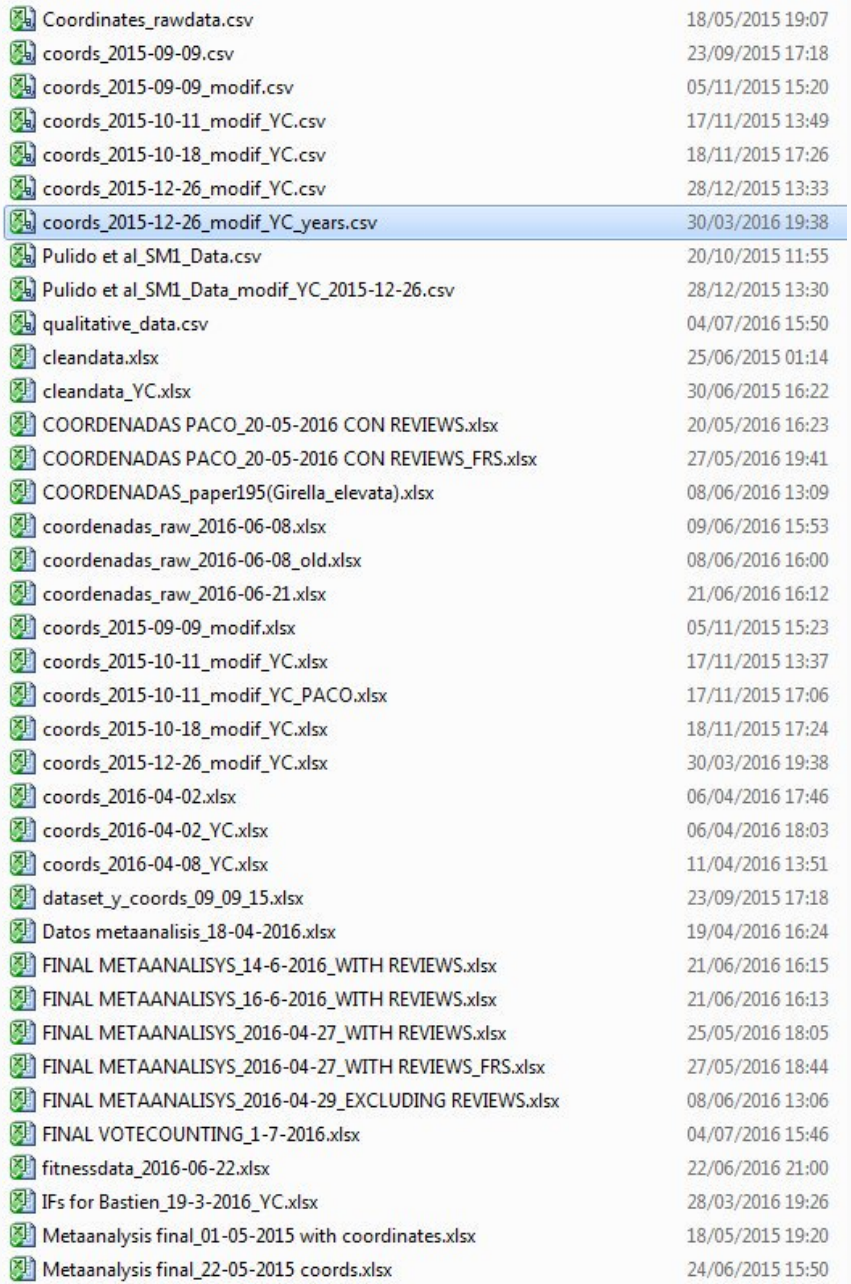

Collaborating without git

You've got email:

> *I'm attaching the final dataset to this email. Hope the analysis goes well!*

Later:

> *We just found a mistake in the data so I'm attaching the* ***revised final*** *dataset. Sorry about that!*

Version control with git

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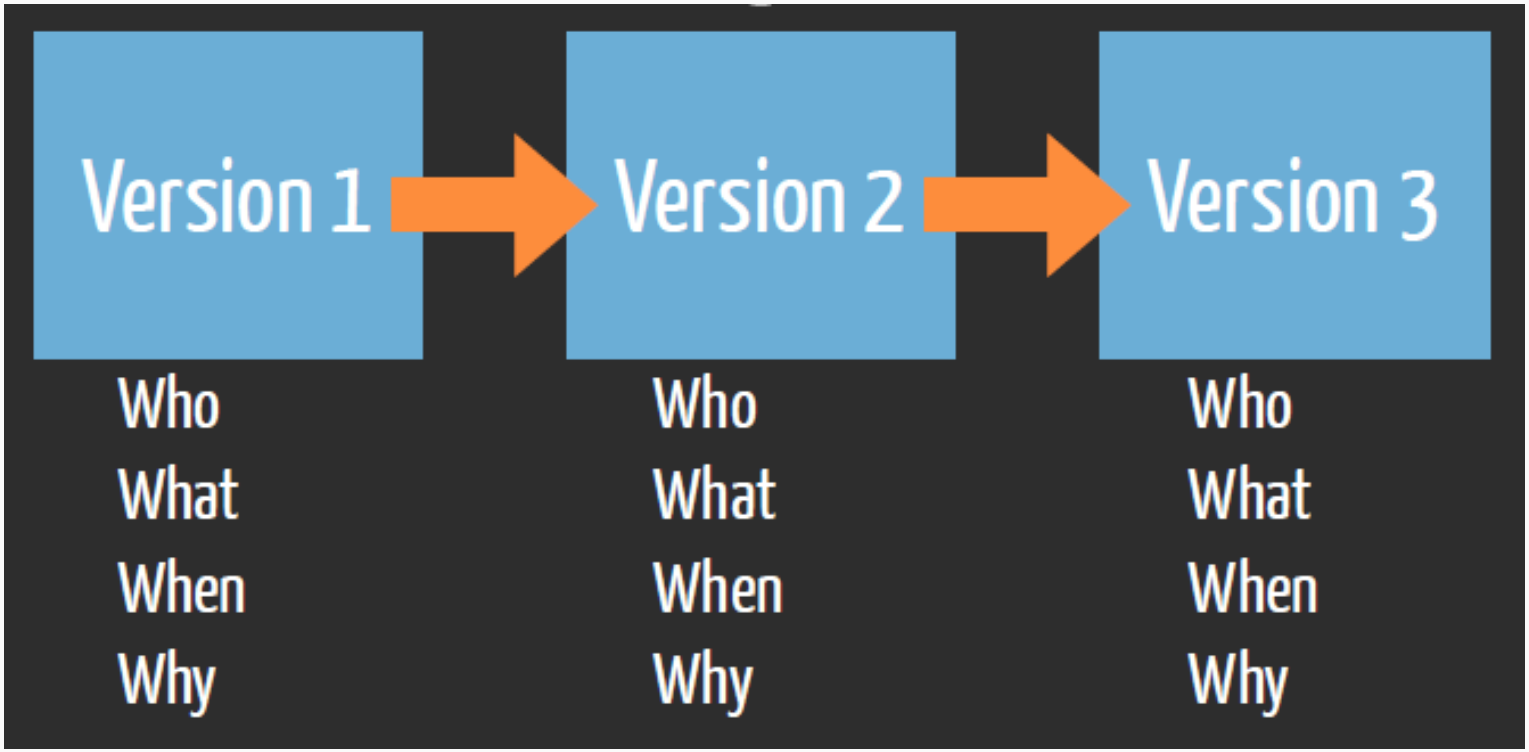

R. Fitzjohn (https://github.com/richfitz/reproducibility-2014)

Why version control

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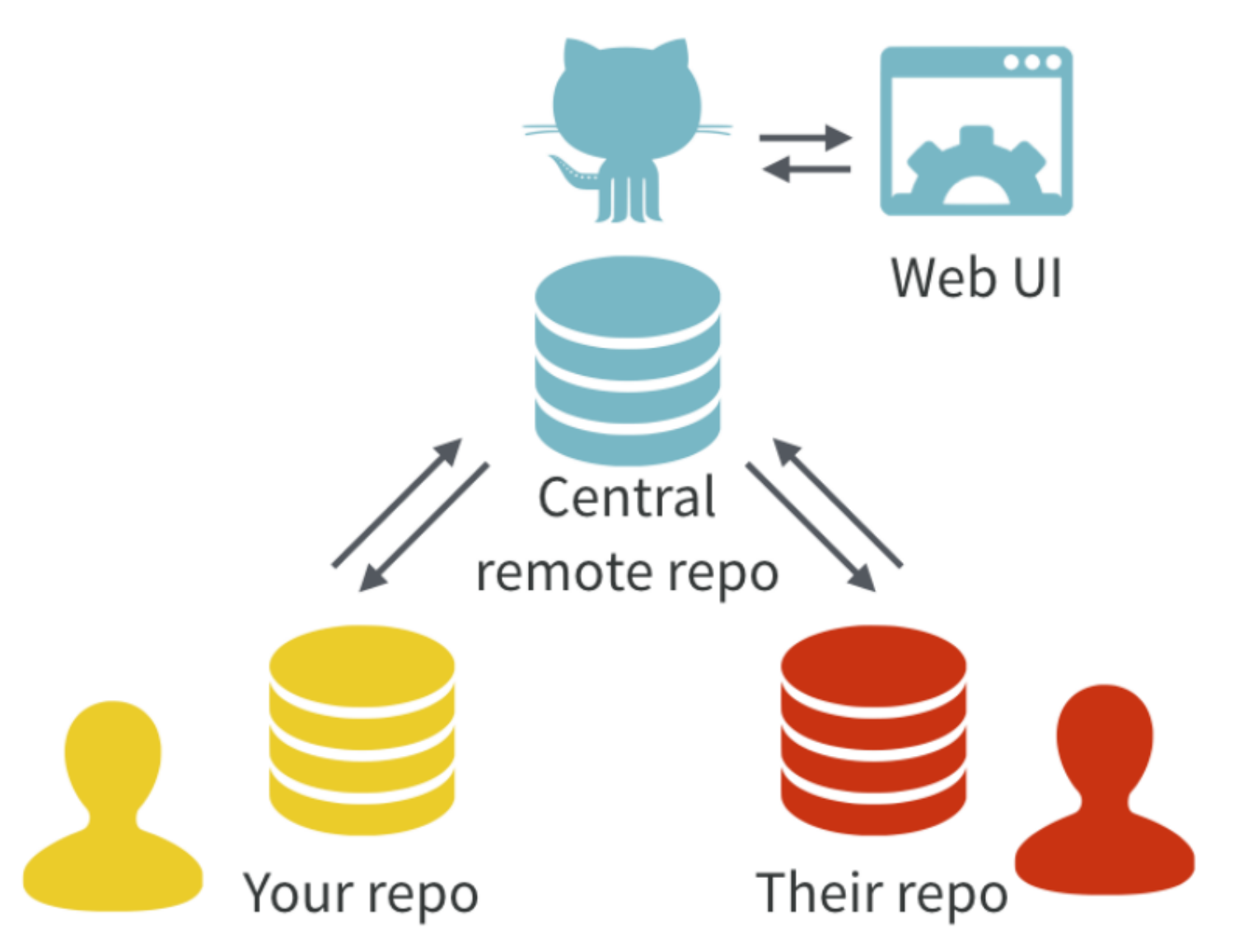
- Easy collaboration (GitHub, GitLab...)

Distributed version control



J. Bryan: Excuse me, do you have a moment to talk about version control?

Advantages of GitHub / GitLab...

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- Easy web deployment
- Continuous integration (GitHub Actions)

Automatic data checks, integration & website

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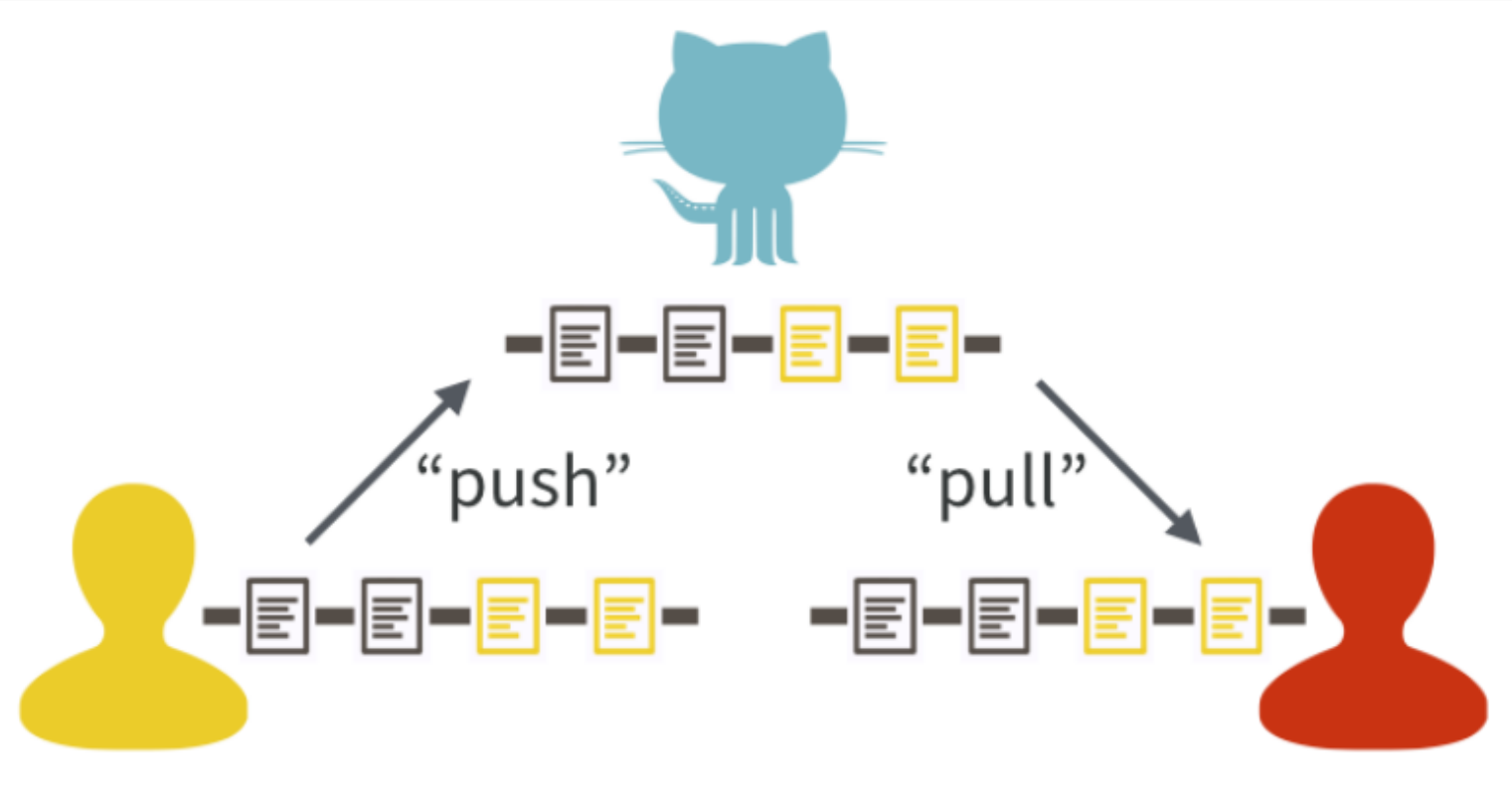
RESEARCH ARTICLE

Methods in Ecology and Evolution | BRITISH ECOLOGICAL SOCIETY

Developing an automated iterative near-term forecasting system for an ecological study

Ethan P. White[1,2,3] | Glenda M. Yenni[1] | Shawn D. Taylor[4] | Erica M. Christensen[1] | Ellen K. Bledsoe[4] | Juniper L. Simonis[1] | S. K. Morgan Ernest[1,3]

Distributed version control



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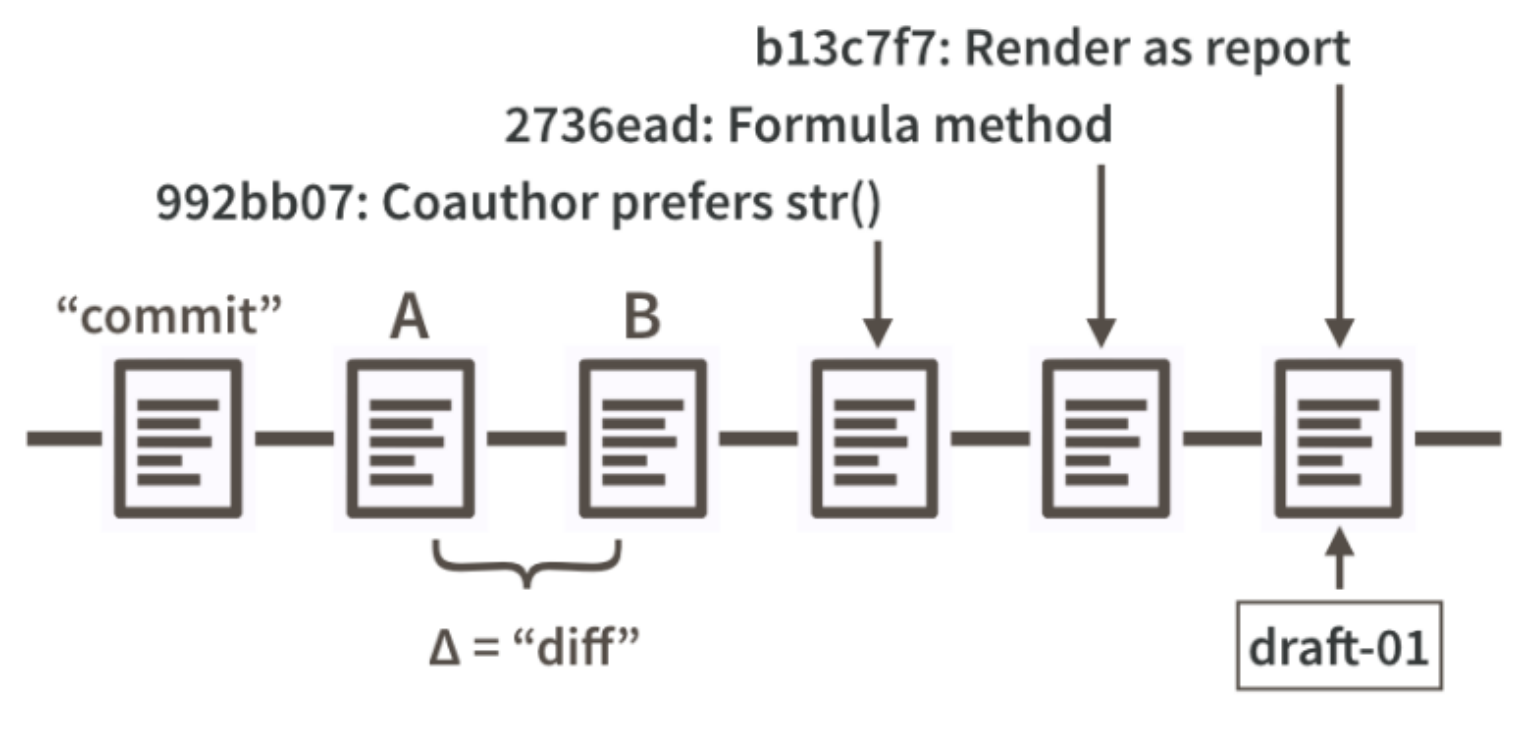
Commits save snapshots of project



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Set up

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https://happygitwithr.com/

https://git-scm.com/

https://github.com/

Sign up on GitHub

https://github.com/

Advice: https://happygitwithr.com/github-acct.html

Install R

https://cran.r-project.org/

Install RStudio

https://www.rstudio.com/products/rstudio/download/#download

Install git

https://happygitwithr.com/install-git.html

Introduce yourself to git

Use same email as GitHub!

```
install.packages("usethis")

library("usethis")

use_git_config(user.name = "Jane Doe",
               user.email = "jane@example.org")
```

Create and save Personal Access Token (PAT)

```
usethis::create_github_token()
```

Will open GitHub webpage

Click ‘Generate token’ (green button)

Paste and store you PAT:

```
gitcreds::gitcreds_set()
```

READY?

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- History
- Branching & merging

Collaborating via GitHub

- Issues

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- Forks & pull requests

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- Granting repository access to collaborators

Collaborating via GitHub

- Issues
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- Granting repository access to collaborators
- Merge conflicts

Sharing reports on GitHub

output: github_document

Website deployment

Repository settings -> Pages

Social network

- Follow

Social network

- Follow
- Star

Social network

- Follow
- Star
- Contribute (issues, pull requests)