Working with Git and GitHub in R

R-Ladies DC Workshop 2018

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Homage to Jenny Bryan’s Work

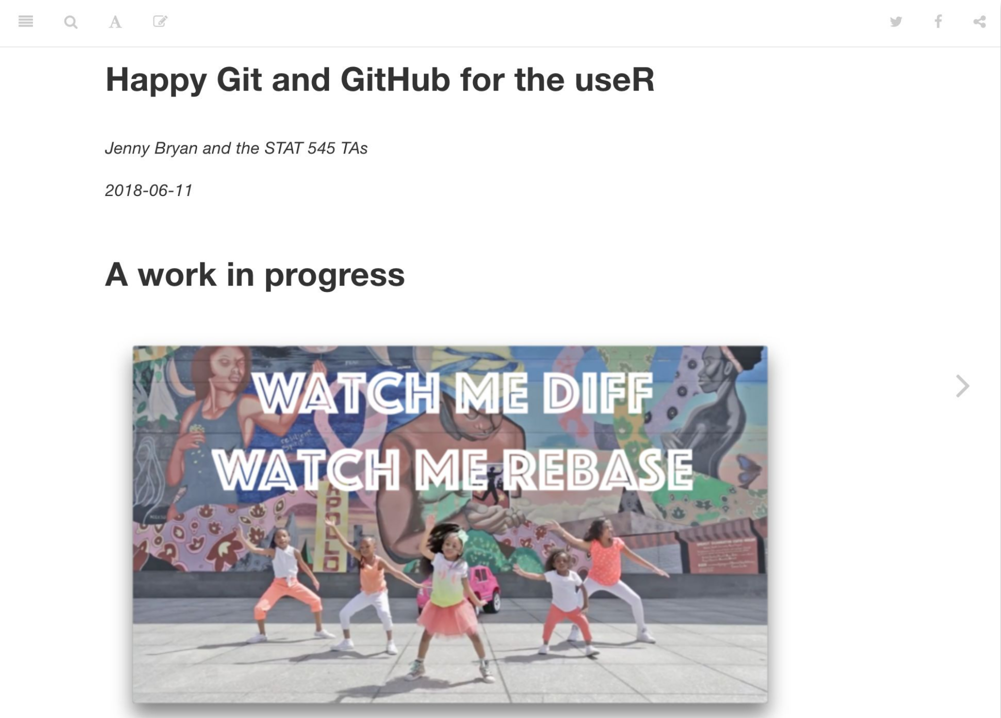
Happy Git and GitHub

The Bookdown

The RStudio Webinar

Jenny Bryan

@JennyBryan



Happy Git and GitHub for the useR

Jenny Bryan and the STAT 545 TAs

2018-06-11

A work in progress

Git and GitHub

Git

“The stupid content tracker”

GitHub

“The home for your git-based projects on the internet”

Version Control Systems

Were created to help groups of people develop software together

Why Even Use Git?

You’re probably already trying to do version control - especially when collaborating

The Saving Files Naming Convention Method

analysis-results.R

analysis-results-recent.R

analysis-results-feedback.R

analysis-res-feedback1.R

analysis-results-FINAL-june.R

results-FINAL-june15.R

Horrifying email chain and multiple file folder locations

The Git Commit Method

analysis-results.R

analysis-results.R

analysis-results.R

analysis-results.R

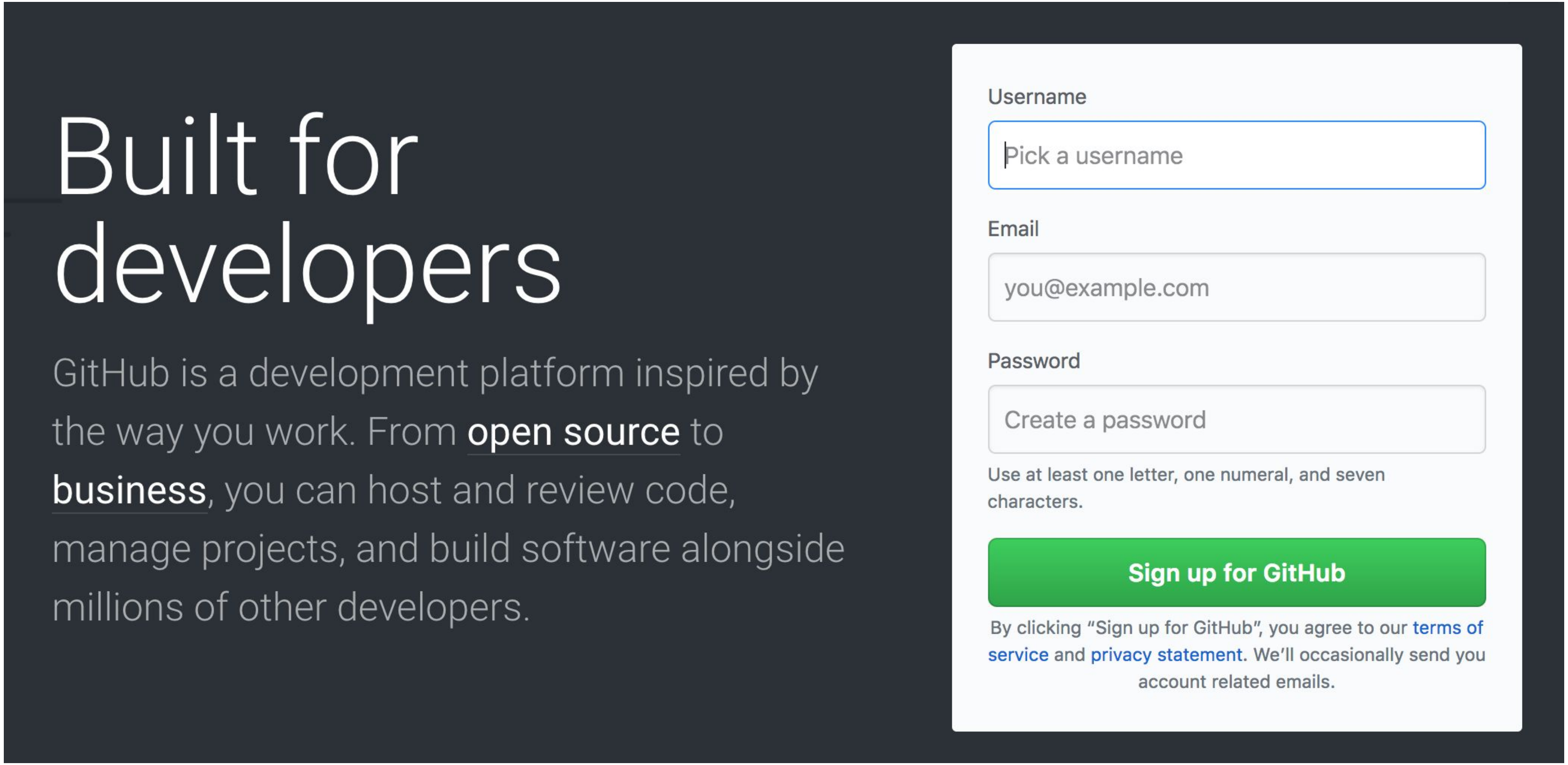
analysis-results.R

analysis-results.R

No email - access in the cloud

Entire file change history is maintained

Activity: Create a GitHub Account



Built for developers

GitHub is a development platform inspired by the way you work. From open source to business, you can host and review code, manage projects, and build software alongside millions of other developers.

Username

Pick a username

Email

you@example.com

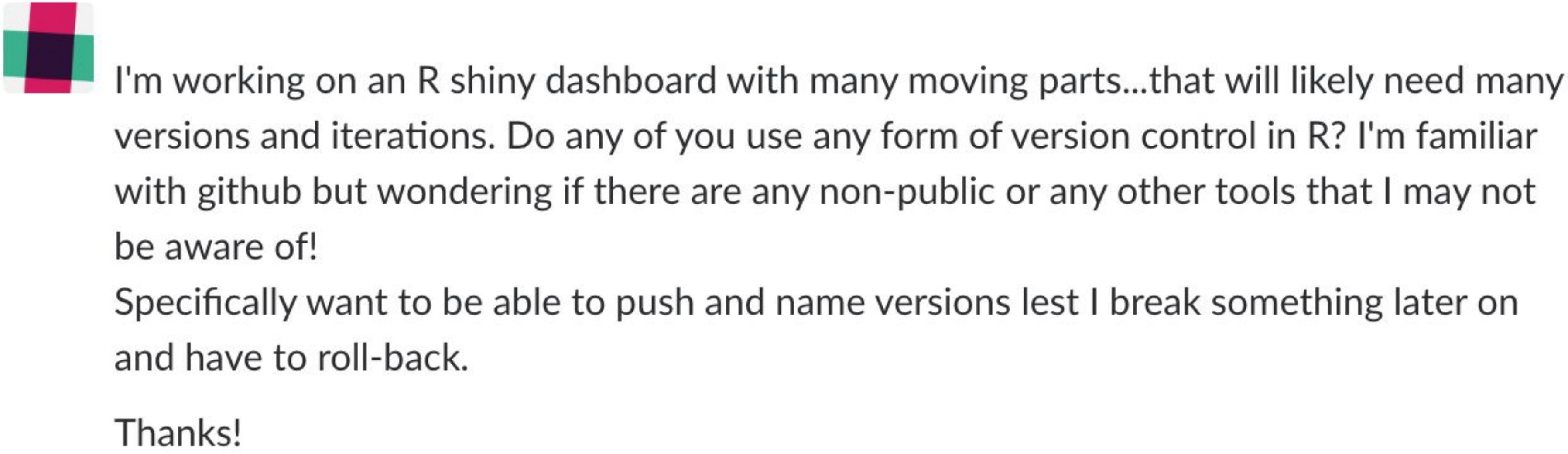
Password

Create a password

Use at least one letter, one numeral, and seven characters.

By clicking "Sign up for GitHub", you agree to our terms of service and privacy statement. We'll occasionally send you account related emails.

Public/Private Work on the Internet

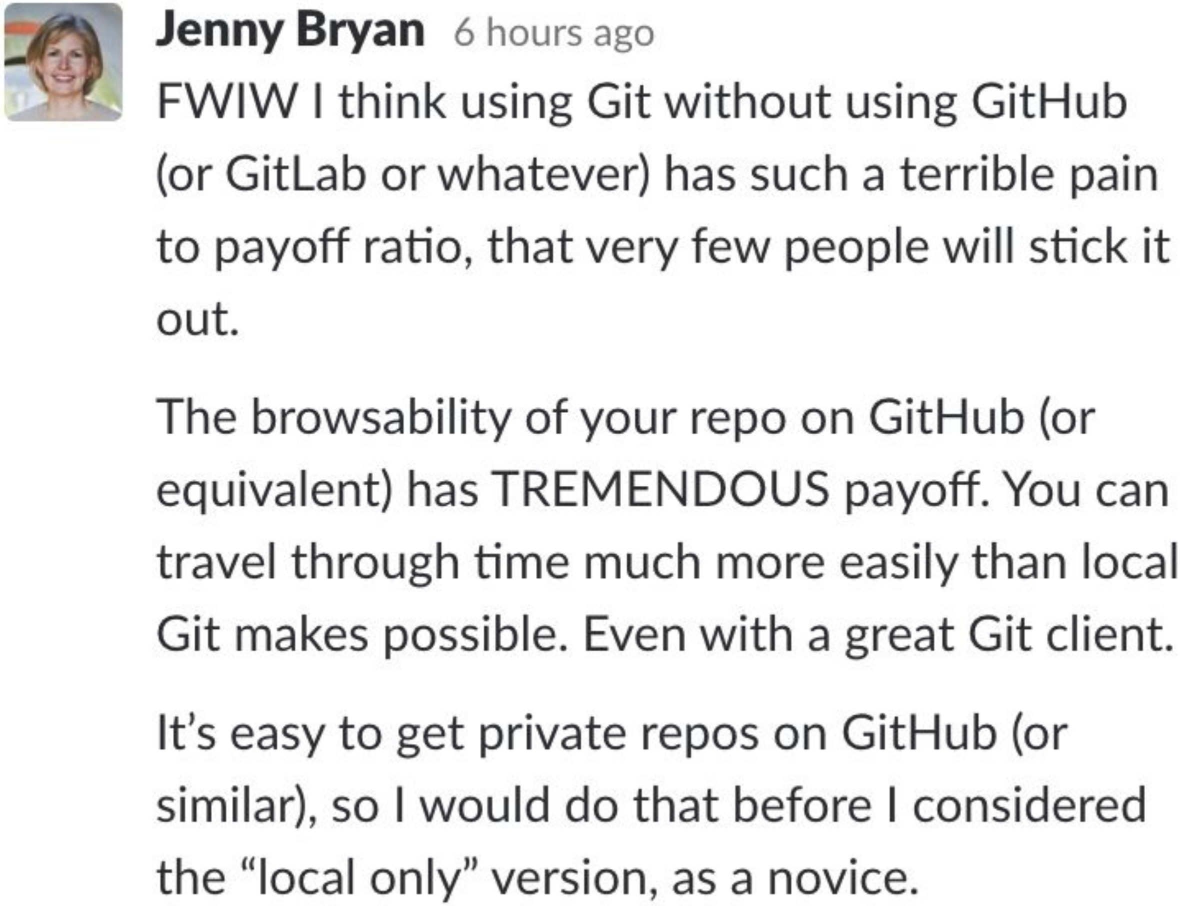


I'm working on an R shiny dashboard with many moving parts...that will likely need many versions and iterations. Do any of you use any form of version control in R? I'm familiar with github but wondering if there are any non-public or any other tools that I may not be aware of!
Specifically want to be able to push and name versions lest I break something later on and have to roll-back.

Thanks!

You can use git without GitHub or any web-based remote.

But...



Jenny Bryan 6 hours ago

FWIW I think using Git without using GitHub (or GitLab or whatever) has such a terrible pain to payoff ratio, that very few people will stick it out.

The browsability of your repo on GitHub (or equivalent) has TREMENDOUS payoff. You can travel through time much more easily than local Git makes possible. Even with a great Git client.

It’s easy to get private repos on GitHub (or similar), so I would do that before I considered the “local only” version, as a novice.

Check: Do you have Git?

http://happygitwithr.com/install-git.html#install-git

Go to the Workshop README and find this link in the Install Git Section.

```
which git
```

```
git --version
```

Check: Do you have Git configured?

Note:

If you are on a work computer and should not have personal GitHub configured for whatever reason, please don't do this!

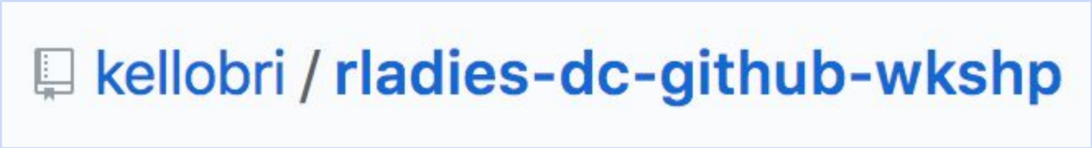
```
git config --global --list
```

```
git config --global user.name 'kellobri'
git config --global user.email
'kelly@rladies.org'
```

Use your GitHub username and email here

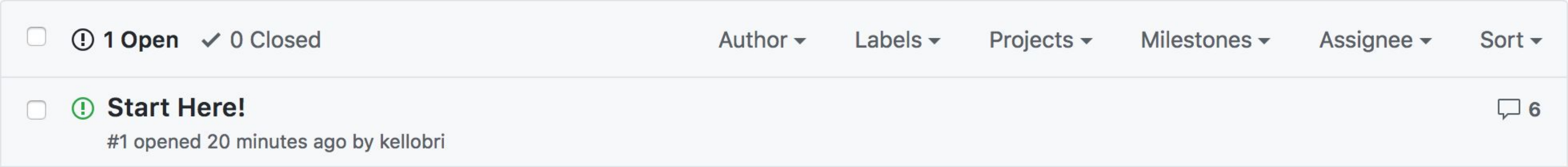
Activity: GitHub Issues

1. Find my repository:



kellobri / **rladies-dc-github-wkshp**

2. Go to the Issues tab and open the Start Here! Issue (should be the only one)



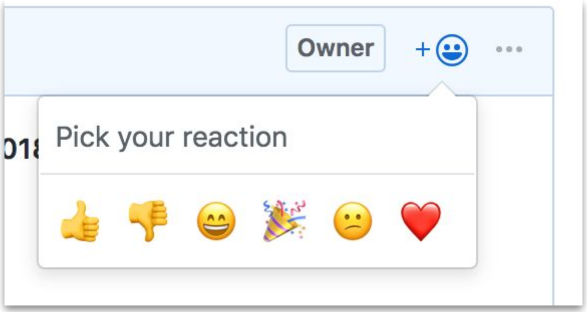
□ ⓘ **1 Open** ✓ 0 Closed Author ▾ Labels ▾ Projects ▾ Milestones ▾ Assignee ▾ Sort ▾

□ ⓘ **Start Here!** 💬 6

#1 opened 20 minutes ago by kellobri

3. React to some comments you like or dislike

4. Make your own comment (optional)



Owner +☺ ···

Pick your reaction

👍 👎 😄 🎉 😕 ❤️

Explore GitHub

Dig into R Packages

- Fix typos in README files
- Submit your own vignettes
- Report bugs or issues with **reprexes**

Find Awesome R Resources:

- R for Education Resources
- R Admin Guide to Professional Tooling and Integration

Start Contributing to R Open Source projects and community works in simple ways, progress as you get more comfortable with collaboration and git workflows.

Activity: Make a PR (Pull Request)

https://github.com/kellobri/rladies-dc-github-wkshp/blob/master/ggplot2-readme-problems.md

- Edit this .md file directly in GitHub
- Make a commit
- Submit a PR (a request for your changes to be incorporated into my doc)

I’ve added several typos and links that go to places they shouldn’t. You can search for those and correct them, create even more typos, or just add some random practice text.

Activity: Create a GitHub Repository

1. Create a new GitHub repo
2. Use RStudio to slurp it down locally
3. Do some work on it locally
4. Push that work back up to the master copy on GitHub

In Happy Git with R, this is the "GitHub First Workflow"

Activity: The Importance of PULL

1. Edit your README again on GitHub
2. Commit your changes directly to master branch
3. Pull those remote changes to your local project
4. Always good to Pull before you start work

Advanced Topics: Collaboration Danger Avoidance

Always pull before starting new work

Branching strategies - Sprint branches, Issue branches

Git client GUIs for helping to navigate merge conflicts

Try not to make “monster” commits

Why R and GitHub?

R + markdown + GitHub = presentability BAKED IN to your workflow

Stuff you need to write → Stuff people like to read

.R (scripts)

.Rmd (Rmarkdown docs)

.md (markdown)

.html (web content)

Activity: Rmarkdown knit to github_docment

.Rmd on github renders readably but code chunks will not be run

Knitting to .html on github renders raw html - not good to read

Knitting to github_document will render github markdown with rendered code chunks!

1. Add a default Rmd to your project
2. Knit to github_document
3. Commit and Push to GitHub
4. View the rendered files on GitHub

Activity: GitHub Pages!

R-Ladies DC Presentations: https://rladies.github.io/meetup-presentations_dc/

Turn your repo README into a hosted site - helpful for obscuring the use of the GitHub interface to consumers

1. Go to Settings
2. Scroll to GitHub Pages section
3. Select source: master branch
4. (optional) Select a theme
5. Visit your new site

References for Mess Ups - Oh shit, git!

Oh shit, I did something terribly wrong, please tell me git has a magic time machine!?!

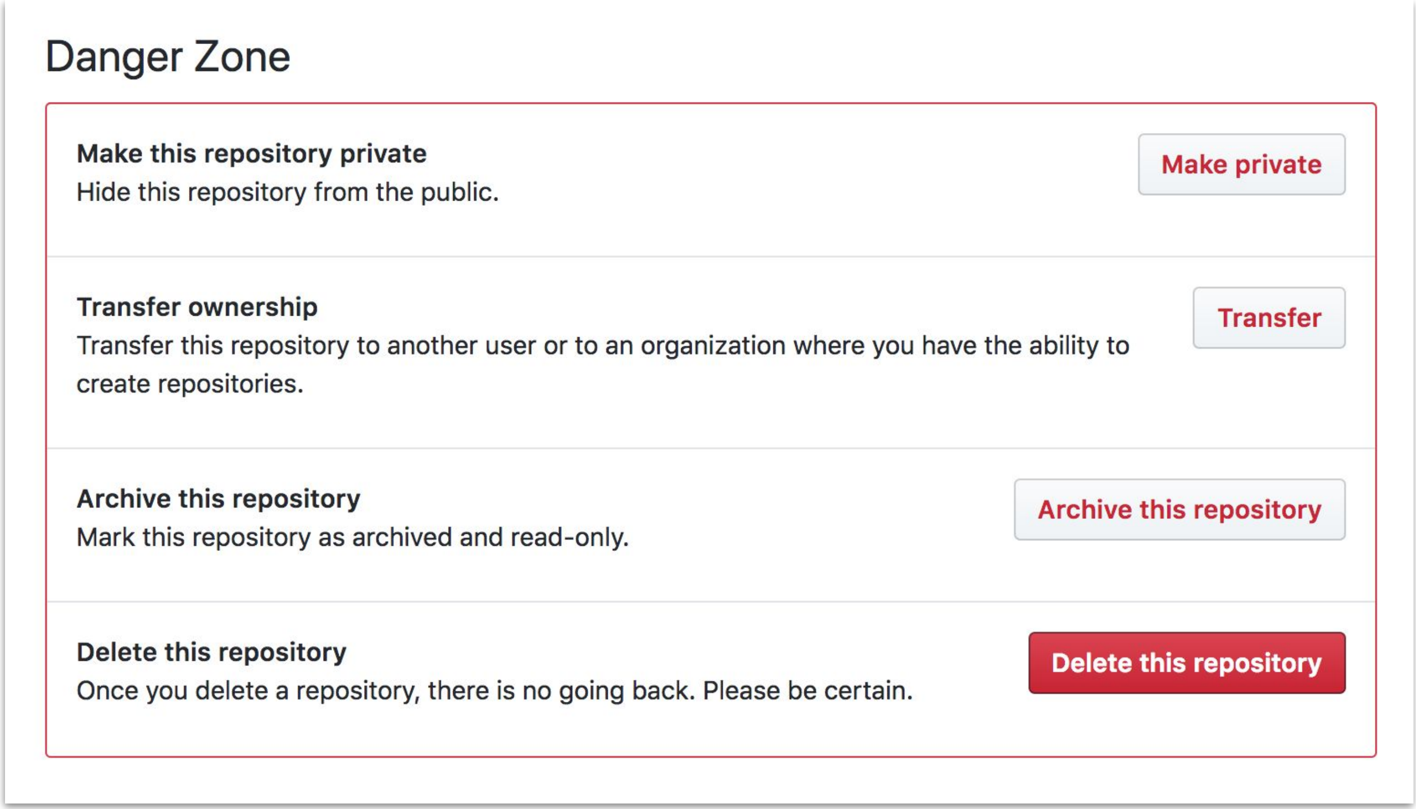
Oh shit, I committed and immediately realized I need to make one small change!

Oh shit, I need to change the message on my last commit!

Oh shit, I accidentally committed to the wrong branch!

Fuck this noise, I give up.

Delete A GitHub Repo: Settings



Danger Zone

Make this repository private

Hide this repository from the public.

Transfer ownership

Transfer this repository to another user or to an organization where you have the ability to create repositories.

Archive this repository

Mark this repository as archived and read-only.

Delete this repository

Once you delete a repository, there is no going back. Please be certain.

Git Clients

- RStudio IDE is a very lightweight git client. If you're serious about git collaboration with other people, I recommend getting a Git Client.

- Git Clients are great because they give you a GUI for untangling git messes

- Which client you should use is largely operating system dependent

- Google: "best git clients" to get a sense of what's popular and try one out!

Git and MS Word Docs

Git and GitHub have enjoyed huge success in our industry, but their platforms are limited to plain text (with no support for the rich formatting offered by Microsoft Word), making them unsuitable for many other industries.

People have been trying to build solutions to this for years.

I’m sure there are solutions that exist, I don’t know enough to recommend any of them.