

@allison_horst

Reproducible Research Reports

1. RStudio

2. R Markdown

Controls

Text + Code + Output

Bullets

- * bullet 1
- * bullet 2

Numbered list

1. item 1
2. item 2



Bullets

- bullet 1
- bullet 2

Numbered list

1. item 1
2. item 2

Reproducible Research Reports

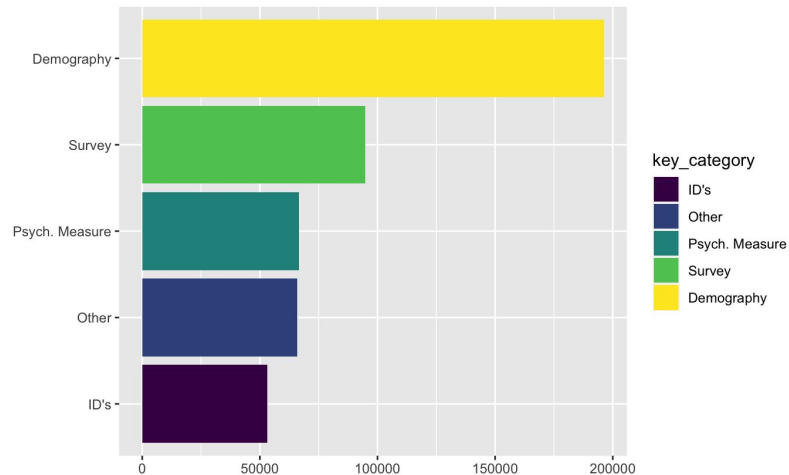
1. RStudio

2. R Markdown

3. Meta-Viz

Visualizing
Data Availability

```
```{r}
metaviz_long %>%
 drop_na(value) %>%
 count(key_category) %>%
 mutate(key_category = fct_reorder(key_category, n)) %>%
 ggplot(aes(x = key_category, y = n, fill = key_category)) +
 geom_col() +
 coord_flip() +
 labs(x = "", y = "")
```
```



Reproducible Research Reports

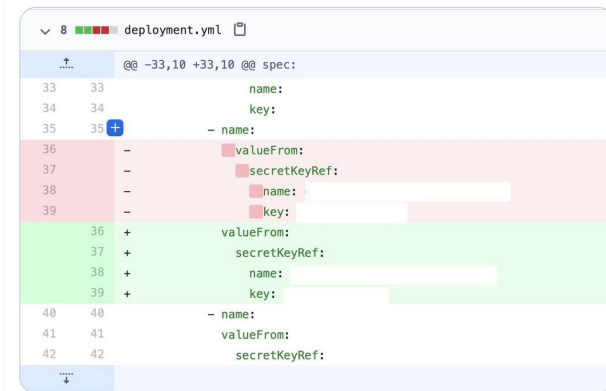
1. RStudio

2. R Markdown

3. Meta-Viz

4. Websites

Creating websites
with R Markdown



5:06 vorm. · 10. Feb. 2021 · Twitter Web App

Reproducible Research Reports

1. RStudio

2. R Markdown

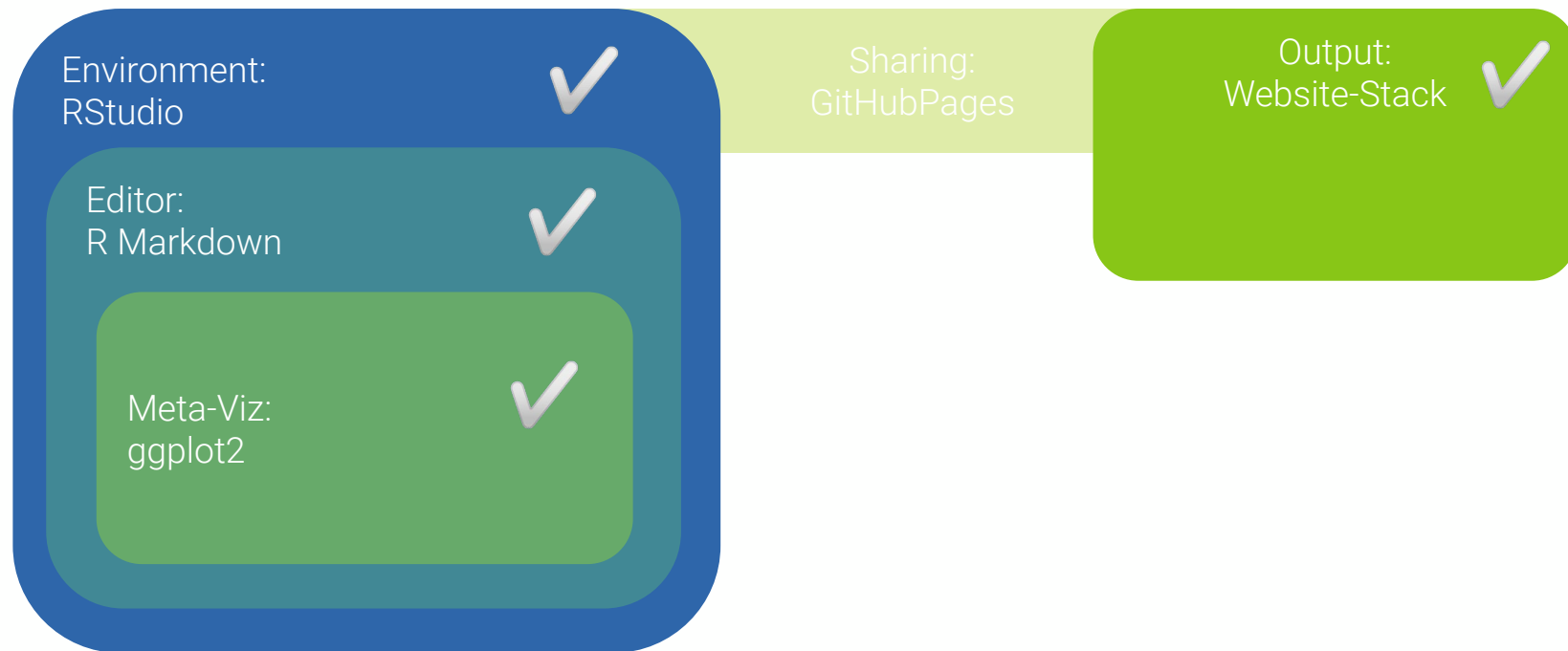
3. Meta-Viz

4. Websites

5. Git + GitHub
Pages

Sharing websites
with many people

Review: Reproducible Research Reports



Lunch Time

Thursday



09:00 - 10:30 Welcome & RStudio Intro

10:30 - 11:00 Break

11:00 - 12:30 R Markdown Intro

12:30 - 13:30 Lunch

13:30 - 15:00 Meta-Viz and ggplot2

15:00 - 15:30 Break

15:30 - 17:00 R Markdown: website features

Friday (half-day)

09:00 - 10:30 Git + GitHubPages

10:30 - 11:00 Break

11:00 - 12:30 Putting all the pieces together

12:30 - 13:00 Wrap-up

In case of fire



1. git commit



2. git push



3. leave building

5

GitHubPages

Goal



Learn Git Basics & Vocabulary



Share a website via GitHubPages

Hands-on

GitHub Time



Head over to GitHub and create repositories

Git

- One version control system

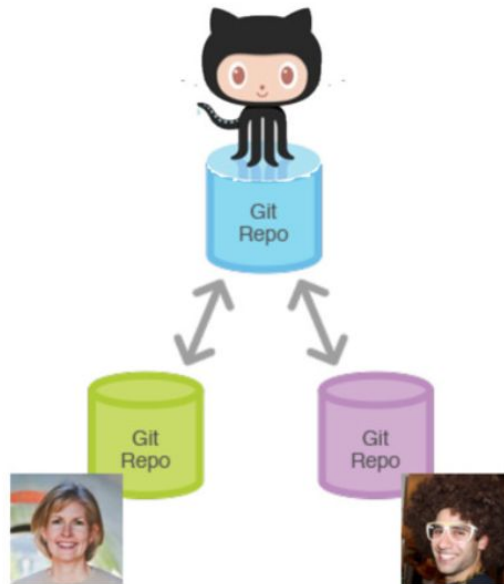
GitHub

- many hosting services (e.g. BitBucket, GitLab, GitHub)
- they provide a home for your Git based projects on the internet

Git & GitHub

- Track changes on steroids
- Think Google Docs

Git + GitHub



Why Git & GitHub?

- Exposure (Sharing Code and Analyses)
- Tracking Progress
- Collaboration

"FINAL".doc



FINAL.doc!



FINAL_rev.2.doc



FINAL_rev.6.COMMENTS.doc



FINAL_rev.8.comments5.
CORRECTIONS.doc



FINAL_rev.18.comments7.
corrections9.MORE.30.doc



FINAL_rev.22.comments49.
corrections.10.#@\$%WHYDID
ICOMETOGRADSCHOOL?????.doc

JORGE CHAM © 2012

WWW.PHDCOMICS.COM

1. R-Studio

2. R-Markdown

3. Meta-Viz

4. Websites

5. GitHubPages

Git vocabulary: repo(sitory)

The screenshot shows the GitHub interface for the repository 'lisallreiber / R-workshop-git'. At the top, there are navigation tabs: 'Code' (selected), 'Issues', 'Pull requests', 'Actions', 'Projects', 'Wiki', 'Security', 'Insights', and 'Settings'. Below these tabs, there are buttons for 'main' (selected), '1 branch', '0 tags', 'Go to file', 'Add file', 'Code', and a green 'Use this template' button. The repository name 'lisallreiber / R-workshop-git' is followed by a 'Template' label. On the right, there are buttons for 'Unwatch', '1' (watchers), 'Star' (0), and 'Fork' (0). The main content area shows a list of files and folders: 'data' (add template content, 5 hours ago), 'docs' (adjust template files, 4 hours ago), '.gitignore' (Initial commit, 5 hours ago), '00_packages.R' (adjust template files, 4 hours ago), 'LICENSE' (Initial commit, 5 hours ago), and 'README.md' (Initial commit, 5 hours ago). On the right side, there is an 'About' section with a description: 'This repo can be used to learn git within our R-Workshop. It contains only the most important files to build a website with two pages (index and template-analysis)'. Below the 'About' section, there are links for 'Readme' and 'MIT License'. At the bottom, there is a 'Releases' section.

lisallreiber / R-workshop-git Template

Unwatch 1 Star 0 Fork 0

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

main 1 branch 0 tags Go to file Add file Code Use this template

lisallreiber adjust template files ✓ 06e0b66 4 hours ago 3 commits

| | | |
|---------------|-----------------------|-------------|
| data | add template content | 5 hours ago |
| docs | adjust template files | 4 hours ago |
| .gitignore | Initial commit | 5 hours ago |
| 00_packages.R | adjust template files | 4 hours ago |
| LICENSE | Initial commit | 5 hours ago |
| README.md | Initial commit | 5 hours ago |

About

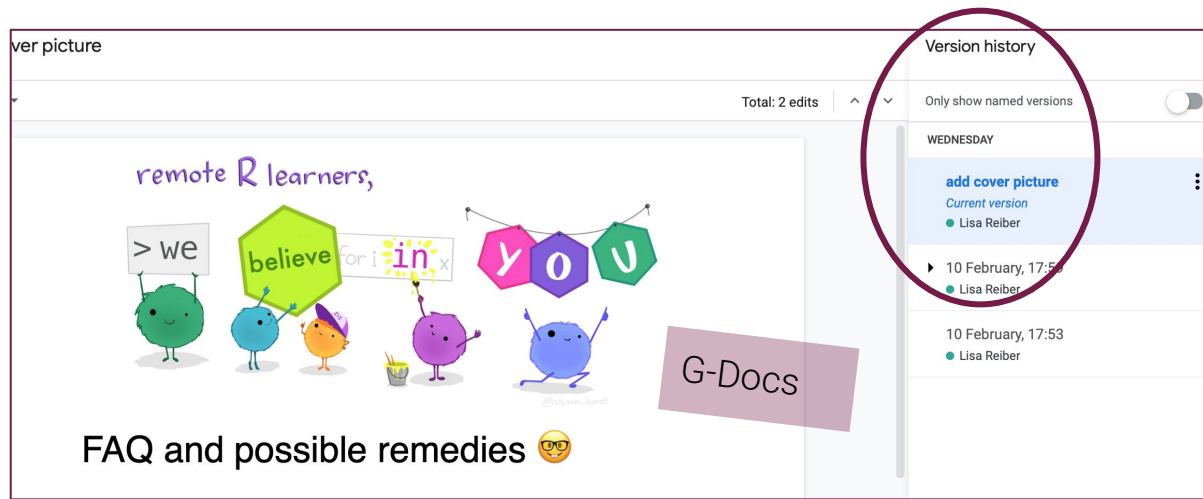
This repo can be used to learn git within our R-Workshop. It contains only the most important files to build a website with two pages (index and template-analysis)

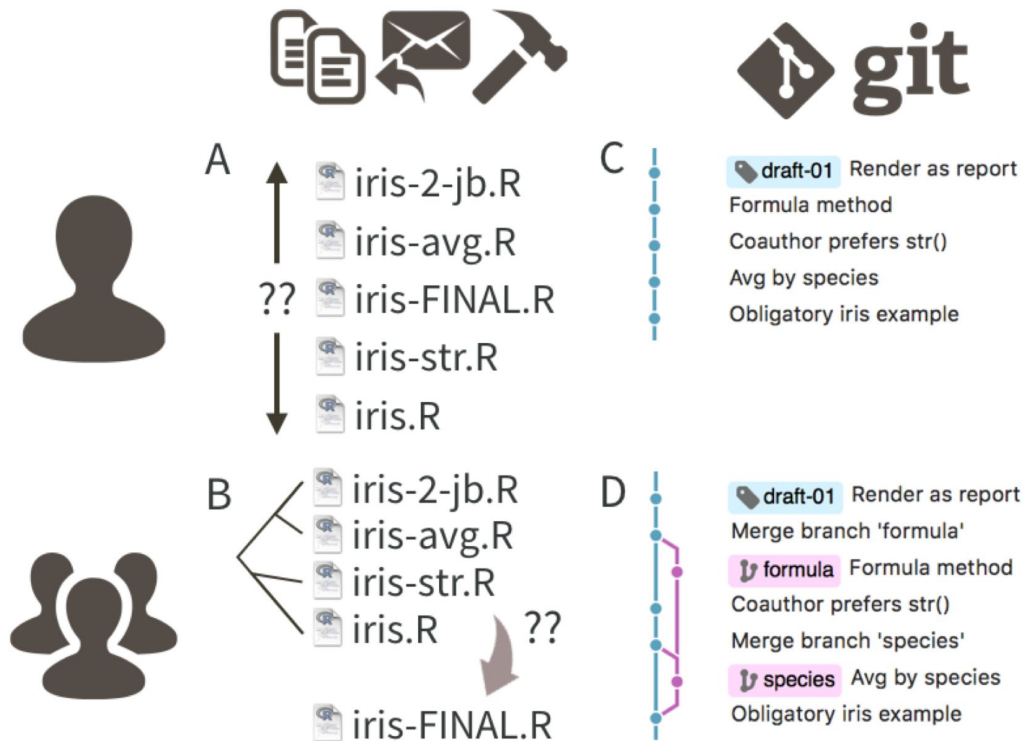
Readme MIT License

Releases

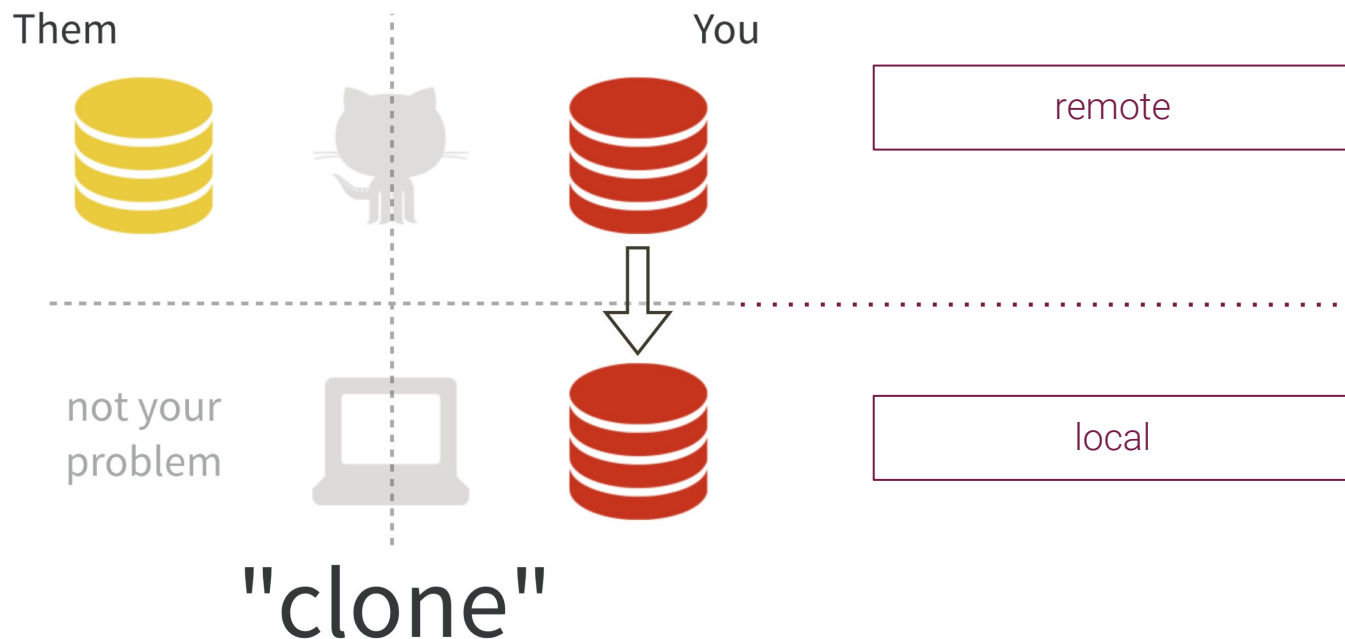
Git vocabulary: commits

- **Commits** are how files evolve
- **Commit messages** are short descriptions of what changed or why it changed

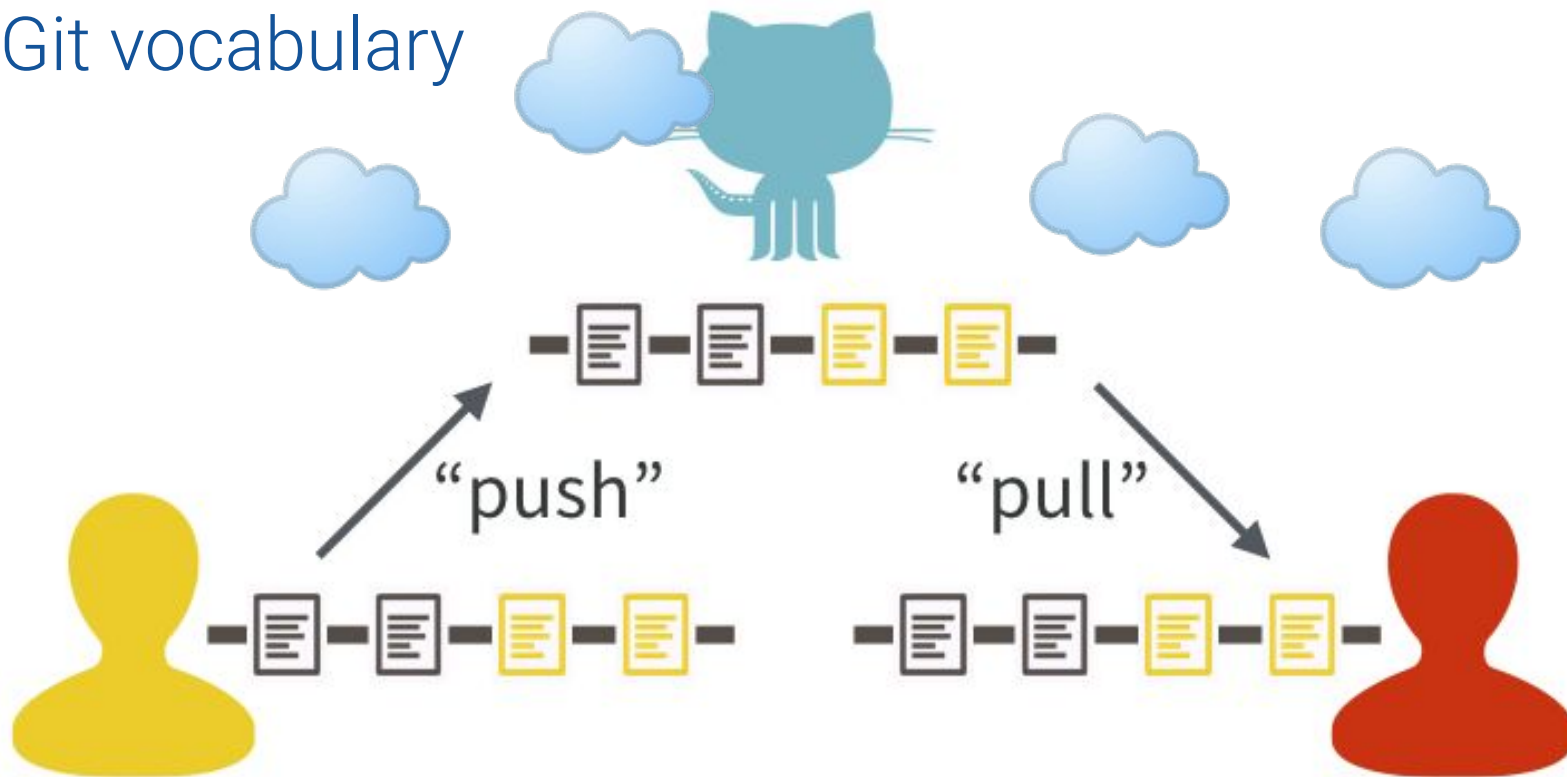




Git vocabulary: clone



Git vocabulary



Diff's

Indicate
the change
from one commit
to the next

The screenshot shows a GitHub pull request interface. At the top, navigation tabs include Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. The pull request title is "make dataset smaller // add resources" and it was committed by Jane Doe 2 hours ago. The diff shows 2 changed files with 4 additions and 0 deletions. One of the changed files is "data-processed/metaviz_long.rds", which is a binary file. The other file is "docs/README.md". The diff for "docs/README.md" shows several changes, including the addition of a new resource link and the removal of some existing ones. A red circle highlights the pull request title, and a red arrow points from it to the diff view.

✓ make dataset smaller // add resources

master

Jane Doe committed 2 hours ago

Showing 2 changed files with 4 additions and 0 deletions.

Unified Split

▼ BIN -4.93 MB (9.2%) data-processed/metaviz_long.rds

Binary file not shown.

▼ 4 docs/README.md

```
@@ -99,6 +99,7 @@ Here you can find a list of resources specifically to the topics we cover in the
99 99 - [YAML Options Overview](https://zsmits17.github.io/rmarkdown_crash-course/lesson-4-yaml-headers.html)
100 100 - [Parameterized Reports](https://zsmits17.github.io/rmarkdown_crash-course/lesson-7-parameterized-reports.html)
101 101 - [Overview of all R Markdown formats](https://rmarkdown.rstudio.com/formats.html)
102 102 + [Rendering .R scripts with the rmarkdown package](https://rmarkdown.rstudio.com/articles_report_from_r_script.html)
103 103
104 104 ##### Data Viz
105 105 - [TidyTuesday Live Coding from David Robinson](https://www.youtube.com/watch?v=WxKSauh0Y4g)
@@ -110,6 +111,9 @@ Here you can find a list of resources specifically to the topics we cover in the
110 111 - [Happy Git & GitHub for the user](http://happygitwithr.com/) (bookdown site, hilarious)
111 112 - [List of Git Tutorials and Documentation](https://git-scm.com/doc/ext)
112 113 - [Git: The Simple Guide](https://rogerdudler.github.io/git-guide/index.html)
114 114 + [What is a fork?](https://docs.github.com/en/github/getting-started-with-github/fork-a-repo)
115 115 + [How to create a new repository? ](https://docs.github.com/en/github/getting-started-with-github/create-a-repo)
116 116 + [How to create a GithubPages Website?](https://docs.github.com/en/github/working-with-github-pages/creating-a-github-pages-site)
117 117
118 118 ##### Cheatsheets
119 119
```

Git vocabulary

- Repo(sitory)
- Commits / Commit Message
- Clone
- Push / Pull
- Diff

Hands-on

GitHub Time



Head over to GitHub



Let's connect the repository to RStudio Cloud

Git & R-projects: Recommended Workflow

1. Set up a GitHub repository. ✓
2. Create an R-project connected to the GitHub repository
3. Develop R-scripts
4. Push and pull project changes to and from GitHub

Copy the URL of YOUR repo

your username your repo-name

~~lisallreiber~~ / ~~R-workshop-git~~

Template

Unwatch

1

Star

0

Fork

0

<> Code

Issues

Pull requests

Actions

Projects

Wiki

Security

Insights

Settings

main

1 branch

0 tags

Go to file

Add file

Code

Use this template

lisallreiber adjust template file

data

docs

.gitignore

00_packages.R

LICENSE

README.md

_site.yml

Clone

HTTPS SSH GitHub CLI

<https://github.com/lisallreiber/R-workshop-git>

Use Git or checkout with SVN using the web URL.

Open with Codespaces

Open with GitHub Desktop

Download ZIP

About

This repo can be used to learn git within our R-Workshop. It contains only the most important files to build a website with two pages (index and template-analysis)

Readme

MIT License

Releases

No releases published

Hands-on

05:00

Challenge



Make a GitHub website in 5 minutes

1. R-Studio

2. R-Markdown

3. Meta-Viz

4. Websites

5. GitHubPages

How to use the R-workshop template

The screenshot shows the GitHub repository page for 'lisallreiber / R-workshop-git'. The repository name is circled in red. The 'Use this template' button is also circled in red. The repository has 1 branch, 0 tags, 1 watch, 0 stars, and 0 forks. The 'About' section describes the repository as a template for learning git within an R-Workshop, containing files for building a website with two pages (index and template-analysis). The 'Releases' section is also visible.

lisallreiber / R-workshop-git Template

Unwatch 1 Star 0 Fork 0

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

main 1 branch 0 tags Go to file Add file Code Use this template About

lisallreiber adjust template files ✓ 06e0b66 4 hours ago 3 commits

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| LICENSE | Initial commit | 5 hours ago |
| README.md | Initial commit | 5 hours ago |
| site.css | add template content | 5 hours ago |

This repo can be used to learn git within our R-Workshop. It contains only the most important files to build a website with two pages (index and template-analysis)

Readme MIT License

Releases

Copy the URL of YOUR repo

your username

lisallreiber / R-workshop-git Template

Unwatch 1 Star 0 Fork 0

<> Code Issues Pull requests Actions Projects Wiki Security Insights Settings

main 1 branch 0 tags Go to file Add file Code Use this template

lisallreiber adjust template file

data docs .gitignore 00_packages.R LICENSE README.md _site.yml

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R-Workshop

Sharing:
GitHubPages

The website is made up by RMarkdown generated .html files

index.html

Each website needs a “homepage”. GitHub Pages expects the contents of the homepage to be found in the index.html. Don't forget to generate it.

docs/

in your Git repository, make sure to have a folder that contains all of your generated html files. This is the folder that GitHub Pages reads in order to display your website.

This file contains your default YAML code for all R markdowns in the same folder. It defines the look of the website, the content of the header and which website is displayed where.

_site.yml

You can create the content (text, graphs, links etc) with R-Markdown scripts. Set the output to html_document.

Editor:
R-Markdown

5

GitHubPages

Recap

- ✓ We created a github repository
- 🧐 We know “commit, push and pull”
- ☁ We shared a website via GitHubPages

6

Theme oriented groups

Theme oriented groups

1. Keep working on git
2. Revisit RMarkdown - Plots
3. Revisit RMarkdown - Websites
4. Other?

Use the resources:

<https://lisallreiber.github.io/R-Workshop/>

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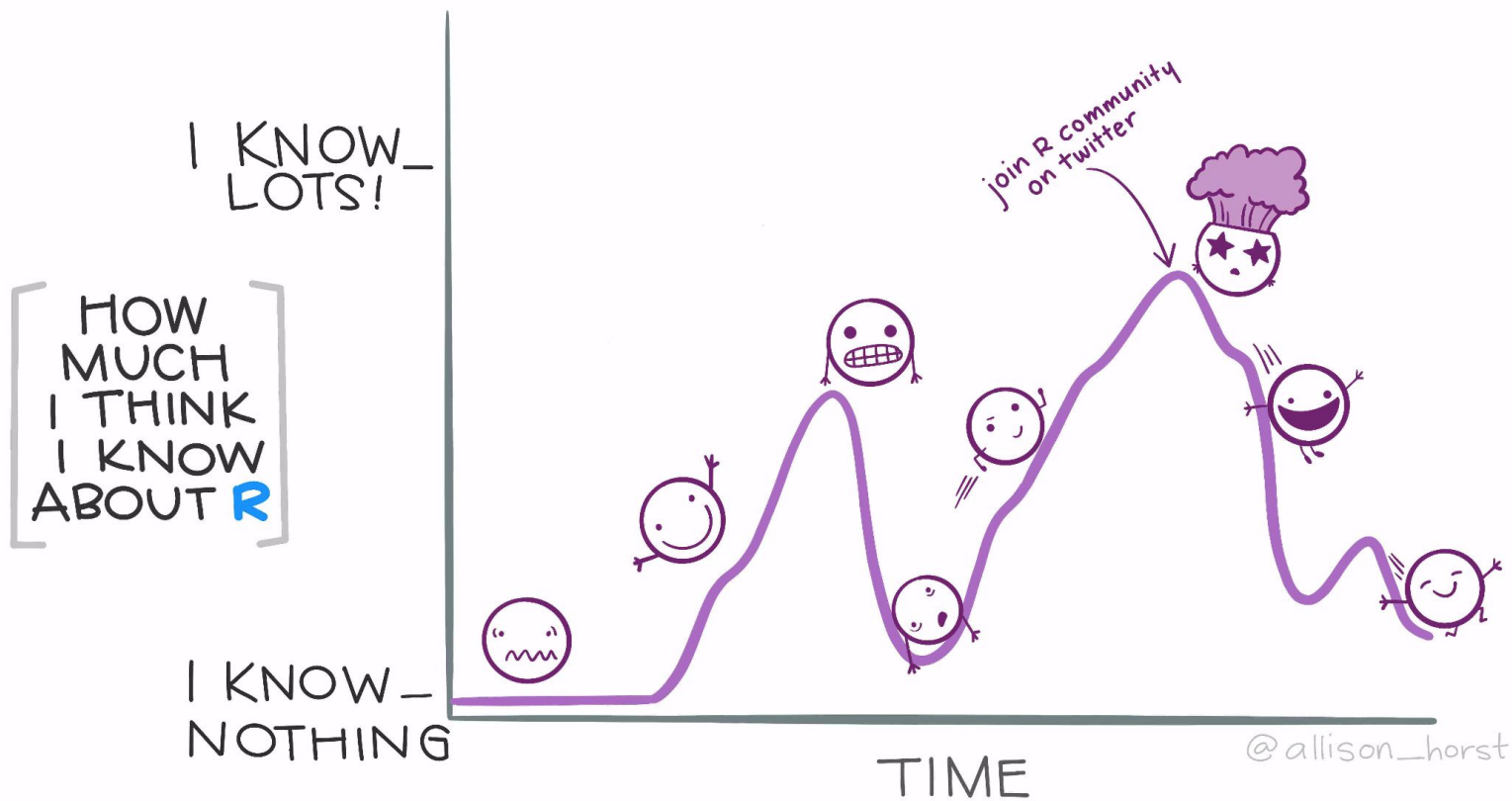
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Reproducible Data Availability Visualization with GitHub Pages

University of Basel: February 11th-12th 2021

Lisa Reiber
 @lisa_reiber

Credits

Some of the workshop materials are modifications of the following resources

[Kara Woo, Jenny Bryan, and Jim Hester's Rstudio::conf\(2020\)](#)

[RStudio Webinar](#)

[Olivier Gimenez's R Markdown Talk](#)

[Ulrik Lyngs' R Markdown Workshops](#)

[Aaron Peikert's Repro Workshop](#)

[Jenny Brian's Talk Happy Git and GitHub for useR](#)

Illustrations

[Allison Horst](#)

[unsplash](#)

[giphy](#)

[9gag](#)

Virtual Environment

[RStudioCloud](#)

[gather.town](#)

Additional Slides

Working with data



```
"~/mm/nope.csv"  
setwd("/haha/good/luck/")  
setwd('c:\\iamyournightmare\\!')  
setwd("C:\\user\\oh\\no")  
setwd("path/that/only/works/on/my/machine")
```



```
mockdata <- read_csv(  
  here::here("data/mockdata.csv")  
)
```

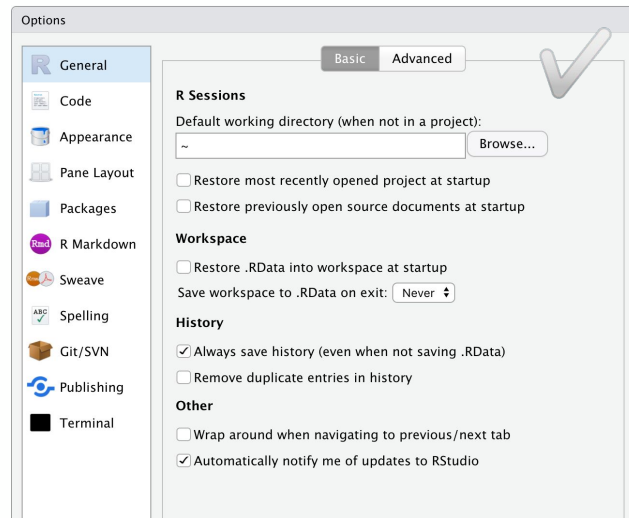
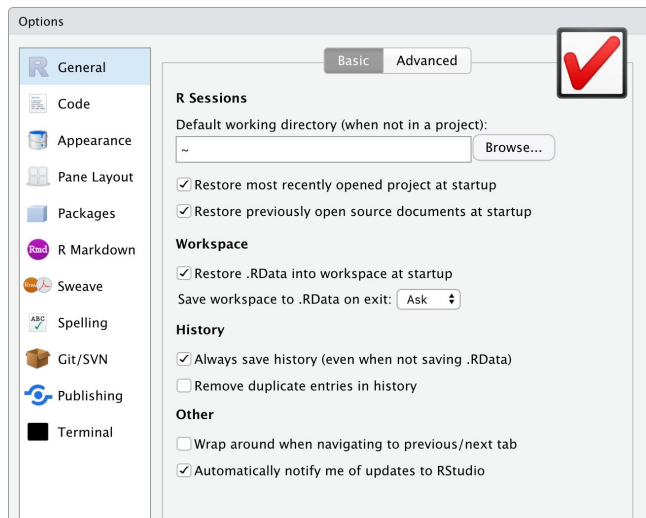


Where to get help

- Resources within RStudio: Help > Cheatsheets
- Stackoverflow
- Your local Corralaid Chapter
- Try turning it on and off again

Bonus tip: Global and Project options

- It's a good idea to stop RStudio from saving and restoring your workspace state.
- Set this in Tools > Global Options... || Tools > Project Options...



Workflow

Use R projects

JB's naming advice

data/data-raw/

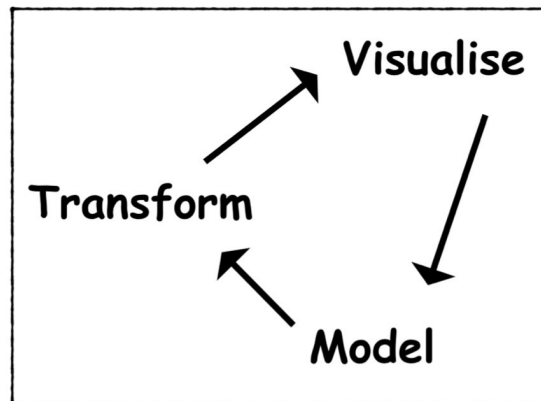
Import → **Tidy** →

data_tidying.Rmd

data/data-processed/

Alison Hill's style:

```
{r load_scripts, include=FALSE}  
source('scripts/01-import.R')  
source('scripts/02-clean-names.R')  
source('scripts/03-tidy.R')  
etc.
```



report.Rmd

→ **Communicate**

Explore

data_analysis.Rmd