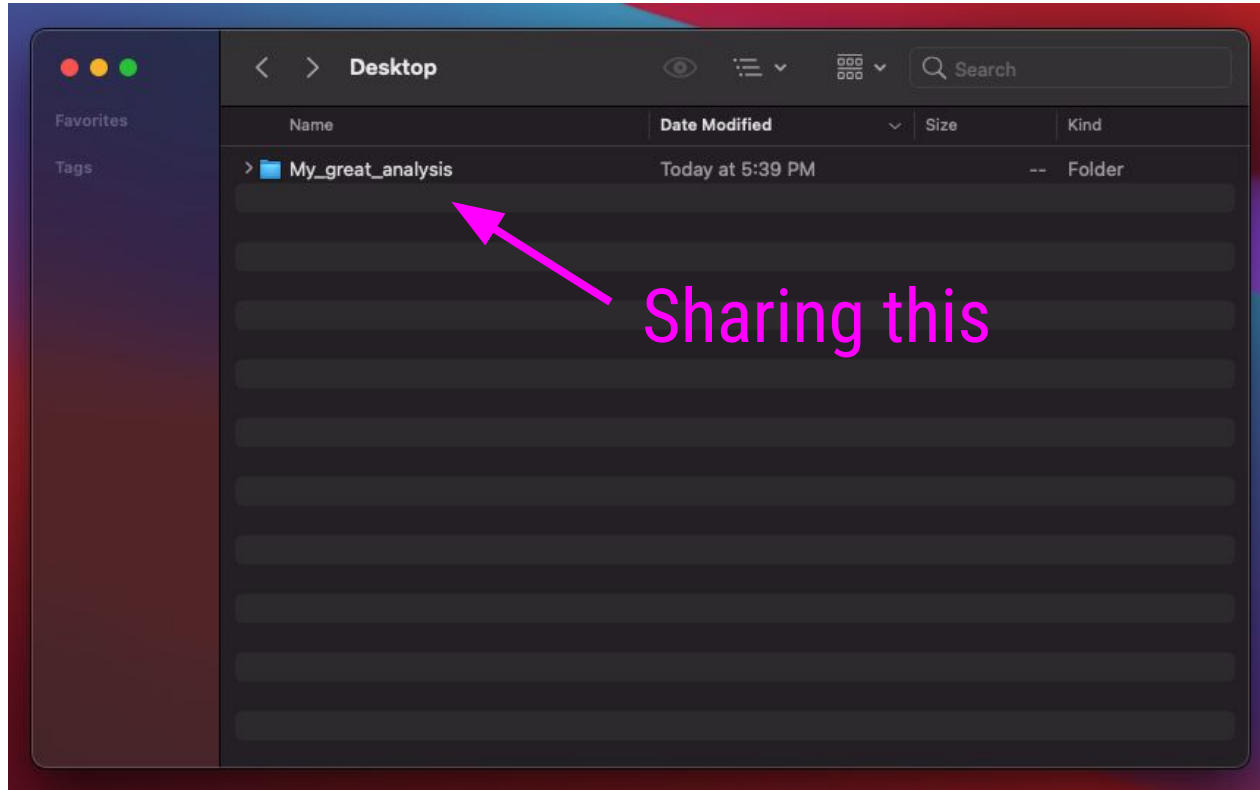
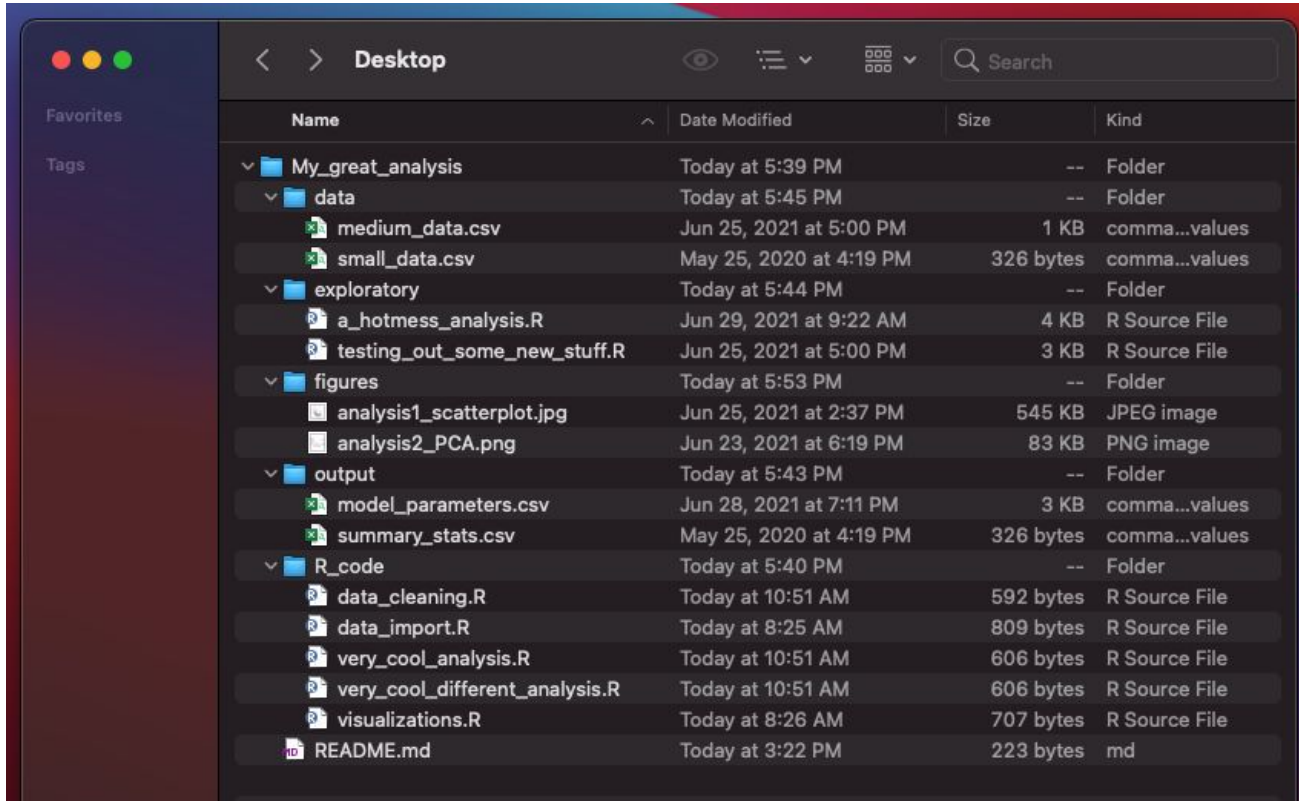


Version control with GitHub

What is the goal of making code?

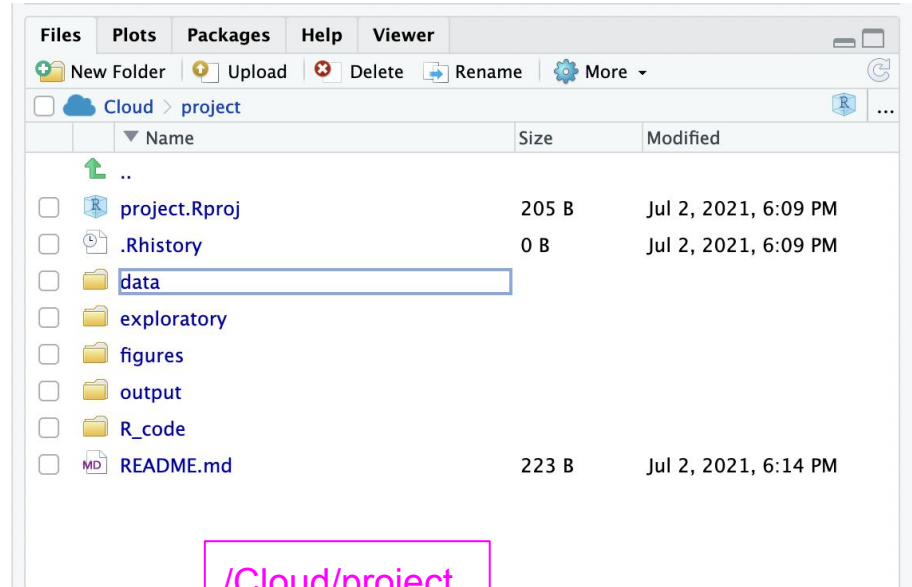
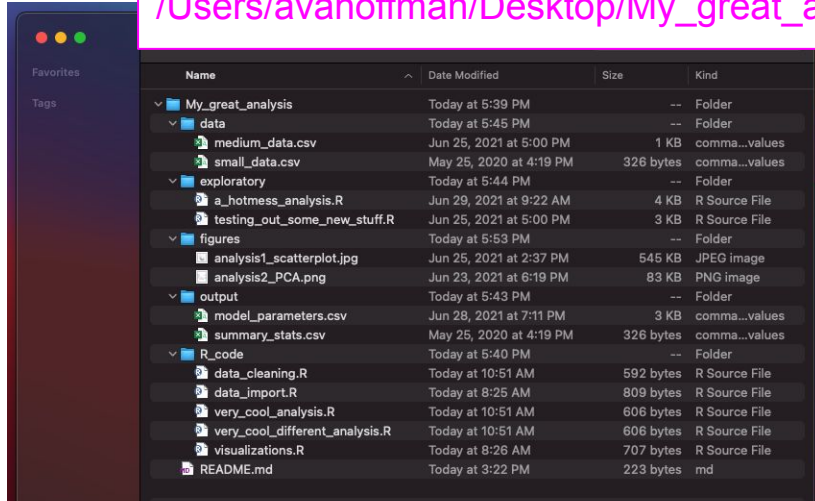


What is the goal of making code?



But first.. Where are we?

/Users/avahoffman/Desktop/My_great_analysis



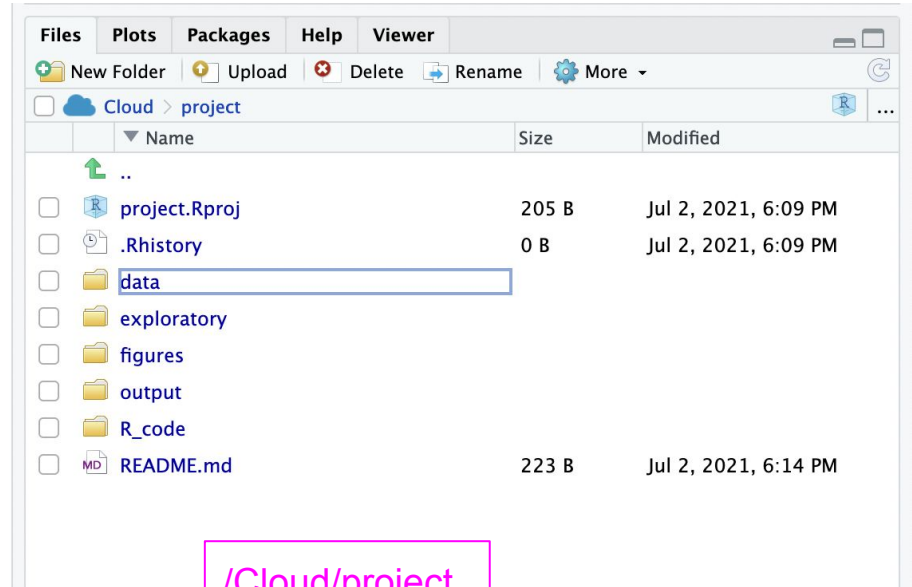
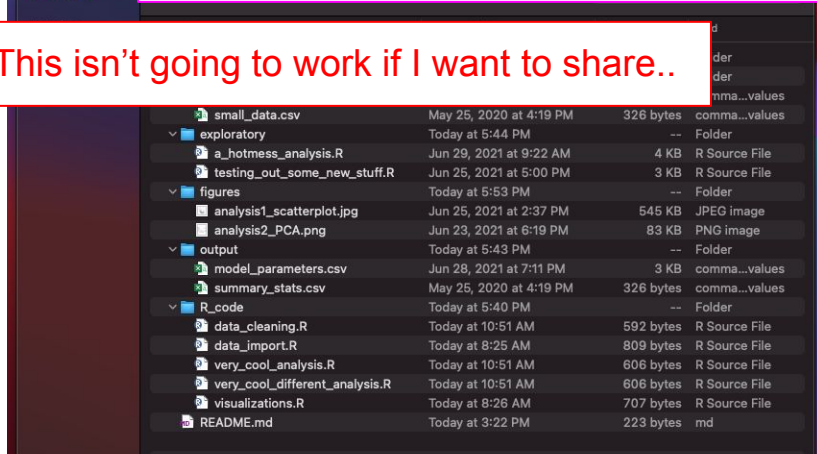
/Cloud/project

Absolute path Starts at the root directory: /

But first.. Where are we?

`/Users/avahoffman/Desktop/My_great_analysis`

This isn't going to work if I want to share..

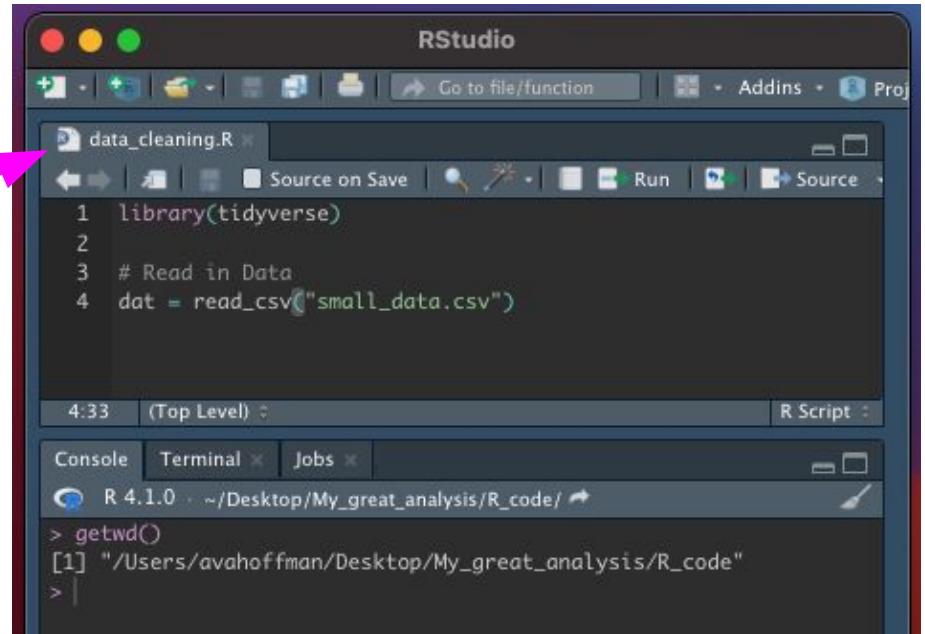
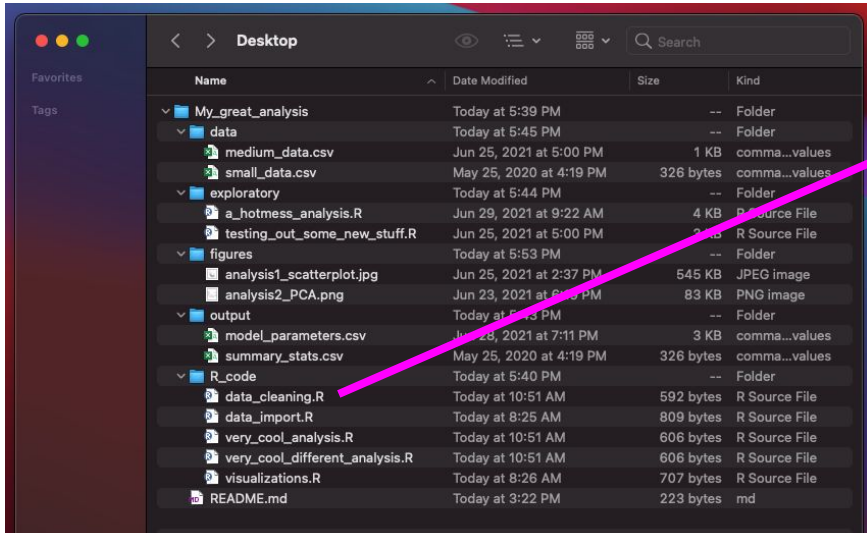


`/Cloud/project`

Absolute path Starts at the root directory: `/`

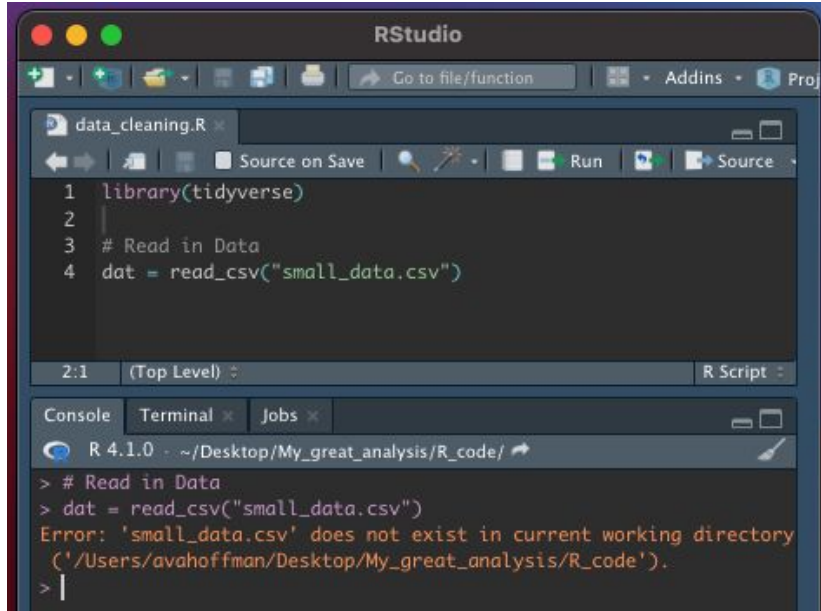
Enter the *relative* path!

Launch "data_cleaning.R"



R looks in /Users/avahoffman/Desktop/My_great_analysis/R_code

Enter the *relative* path!



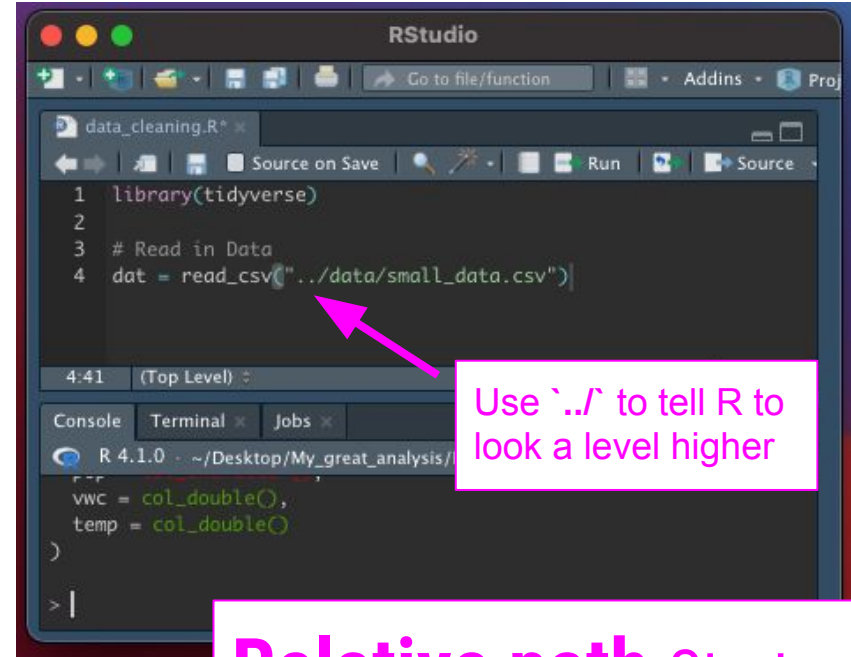
The screenshot shows the RStudio interface with a script editor containing the following code:

```
1 library(tidyverse)
2
3 # Read in Data
4 dat = read_csv("small_data.csv")
```

The console output shows the following error message:

```
> # Read in Data
> dat = read_csv("small_data.csv")
Error: 'small_data.csv' does not exist in current working directory
('/Users/avahoffman/Desktop/My_great_analysis/R_code').
> |
```

The data isn't in
/Users/avahoffman/Desktop/My_great_analysis/R_code !



The screenshot shows the RStudio interface with the script editor containing the following code:

```
1 library(tidyverse)
2
3 # Read in Data
4 dat = read_csv("../data/small_data.csv")
```

The console output shows the following code:

```
4:41 (Top Level) :
Console Terminal Jobs
R 4.1.0 - ~/Desktop/My_great_analysis/
vwc = col_double(),
temp = col_double()
)
> |
```

A pink arrow points to the relative path in the code. A callout box contains the text:

Use `../` to tell R to look a level higher

Relative path Starts
relative to another file

Enter the *relative* path + `.Rproj`

The screenshot shows the RStudio interface. The script editor on the left contains the following code:

```
1 library(tidyverse)
2 |
3 # Read in Data
4 dat = read_csv("/data/small_data.csv")
5 |
6 |
```

The console at the bottom shows the R prompt and the current directory: `R 4.0.3 · /cloud/project/`.

The file explorer on the right shows the contents of the `project` directory:

Name	Size	Modified
..		
.Rhistory	0 B	
data		
exploratory		
figures		
output		
project.Rproj	205 B	Jul 2, 2021, 6:
R_code		
README.md		

A pink arrow points from the `project.Rproj` file in the file explorer to the `dat = read_csv("/data/small_data.csv")` line in the script editor.

When a project is open, R knows to look relative to the `.Rproj` file

Click **File > New Project...** on your local machine if you need one

Relative path Starts *relative* to another file

Enter the *relative* path + .Rproj

The screenshot shows the RStudio interface with the following components:

- Script Editor:** Contains R code for loading libraries and reading a CSV file. The `here` package is being used to define a relative path.
- Console:** Shows the execution of the `here()` function, which returns the current project directory: `"/cloud/project"`.
- Environment Panel:** Shows the current project directory as `"/cloud/project"`.
- Files Panel:** Lists the project's directory structure, including `..`, `.Rhistory`, `data`, `exploratory`, `figures`, `output`, `project.Rproj`, `R_code`, and `README.md`.

A pink arrow points from the `here()` function in the console to the `here()` function in the script editor.

```
1 library(tidyverse)
2 library(here)
3
4 here()
5
6 # Read in Data
7 dat = read_csv("/data/small_data.csv")
8
9
```

```
R 4.0.3 - /cloud/project/
> here()
[1] "/cloud/project"
>
```

Name	Size	Modified
..		
.Rhistory	0 B	Jul 2, 2021, 6:
data		
exploratory		
figures		
output		
project.Rproj	205 B	Jul 2, 2021, 6:
R_code		
README.md		

here () defines your base directory to be the directory where you have a .Rproj file

Relative path Starts *relative* to another file

Enter the *relative* path + .Rproj

The screenshot displays the RStudio interface. The top-left pane shows an R script named 'data_cleaning.R' with the following code:

```
1 library(tidyverse)
2 library(here)
3
4 small_dat_path = here("data", "small_data.csv")
5
6 # Read in Data
7 dat = read_csv(small_dat_path)
8
9
```

The bottom-left pane shows the R console output:

```
R 4.0.3 · /cloud/project/
> small_dat_path = here("data", "small_data.csv")
> small_dat_path
[1] "/cloud/project/data/small_data.csv"
>
```

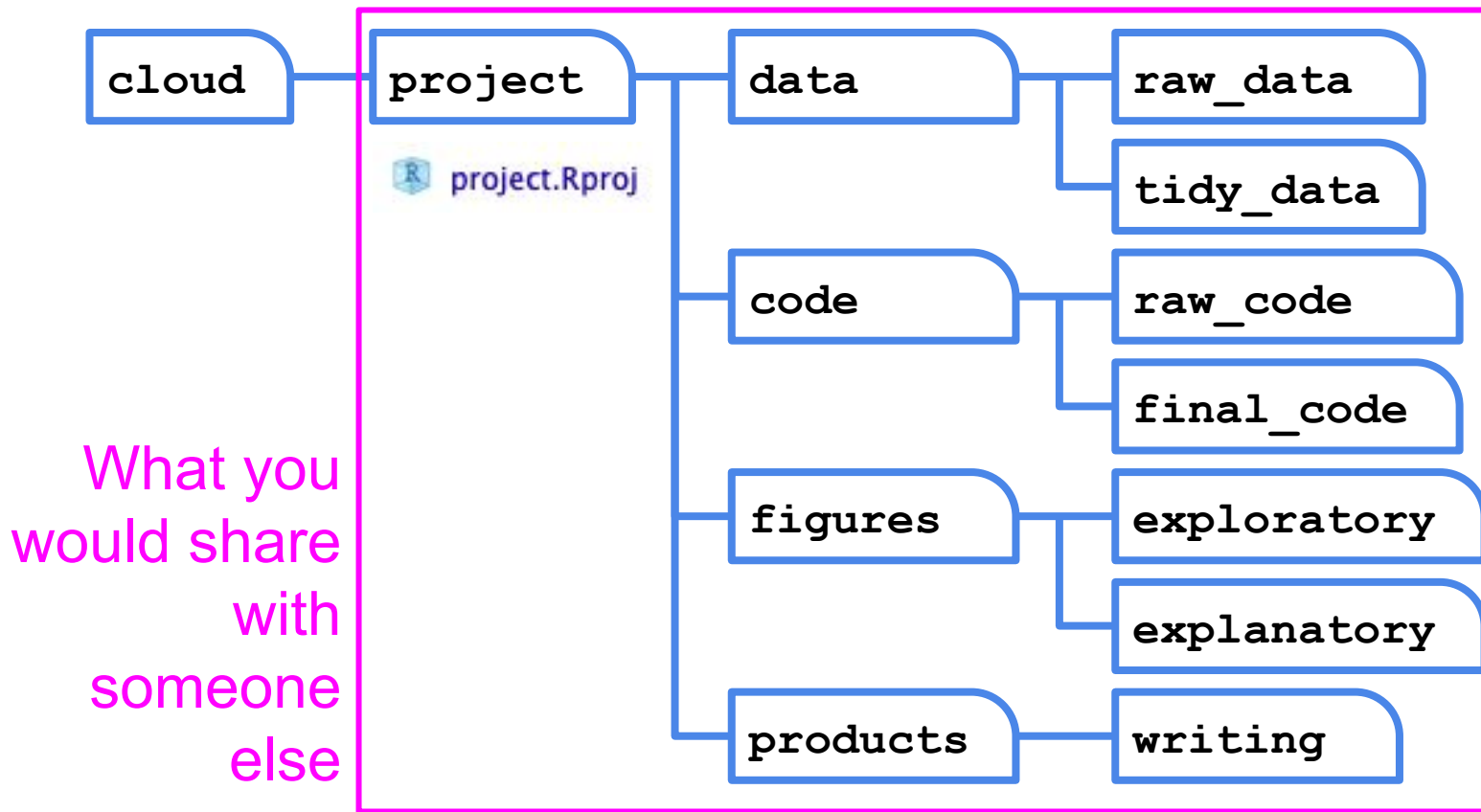
The right-hand pane shows the file explorer with the following table:

Name	Size	Modified
..		
medium_data.csv	1.2 KB	Jul 2, 2021, 6:
small_data.csv	326 B	Jul 2, 2021, 6:

Two pink arrows point from the text boxes to the code and console output. The top-right box explains the use of the `here()` function, and the bottom-right box explains that the relative path starts relative to another file.

`here()` can then be used to create absolute paths to files

Relative path Starts *relative* to another file



So how do you efficiently share projects or folders structured like this with other people?

GitHub!

Unfortunate truth

<https://twitter.com/mtrc/status/617075570761965568>



Michael Cook

@mtrc



"Version control is a truly vital concept that has unfortunately been implemented by madmen." Amen.

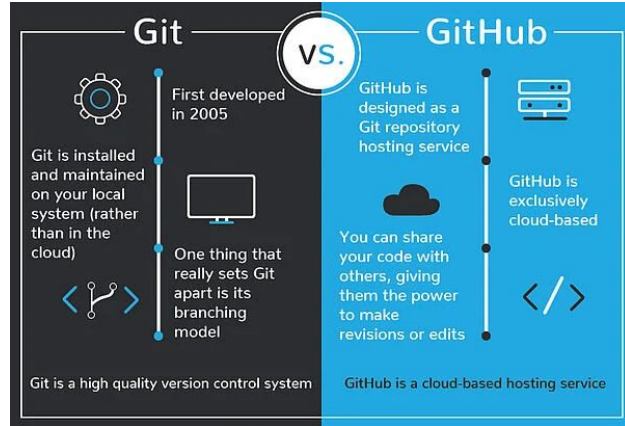
[twitter.com/Pentadact/stat...](https://twitter.com/Pentadact/status/617075570761965568)

5:00 PM - 3 Jul 2015

↩️ ↻ 9 ★ 11

Git commands have convenience
in mind, not intuition

What's the difference between Git and GitHub?



In Simple Terms

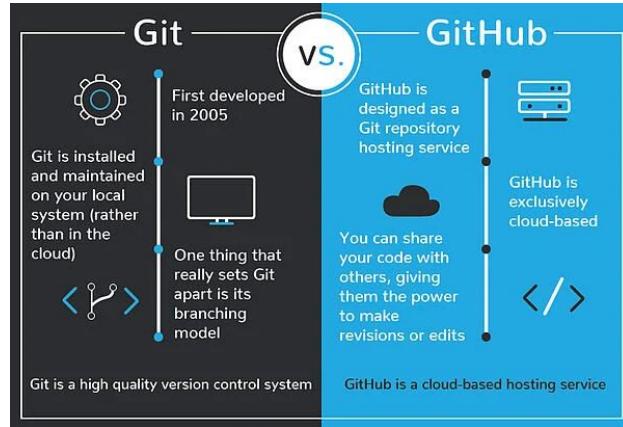
Git

is a version control system that lets you manage and keep track of your source code history

Git
Hub

is a cloud-based hosting service that lets you manage Git repositories

What's the difference between Git and GitHub?



In Simple Terms

Git is a version control system that lets you manage and keep track of your source code history

Git Hub is a cloud-based hosting service that lets you manage Git repositories

Git

Your entire work history

GitHub

LinkedIn

Git is a **free and open source** distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

Git is **easy to learn** and has a **tiny footprint with lightning fast performance**. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like **cheap local branching**, convenient **staging areas**, and **multiple workflows**.



About

The advantages of Git compared to other source control systems.



Documentation

Command reference pages, Pro Git book content, videos and other material.



Downloads

GUI clients and binary releases for all major platforms.



Community

Get involved! Bug reporting, mailing list, chat, development and more.



Pro Git by Scott Chacon and Ben Straub is available to [read online for free](#). Dead tree versions are available on [Amazon.com](#).

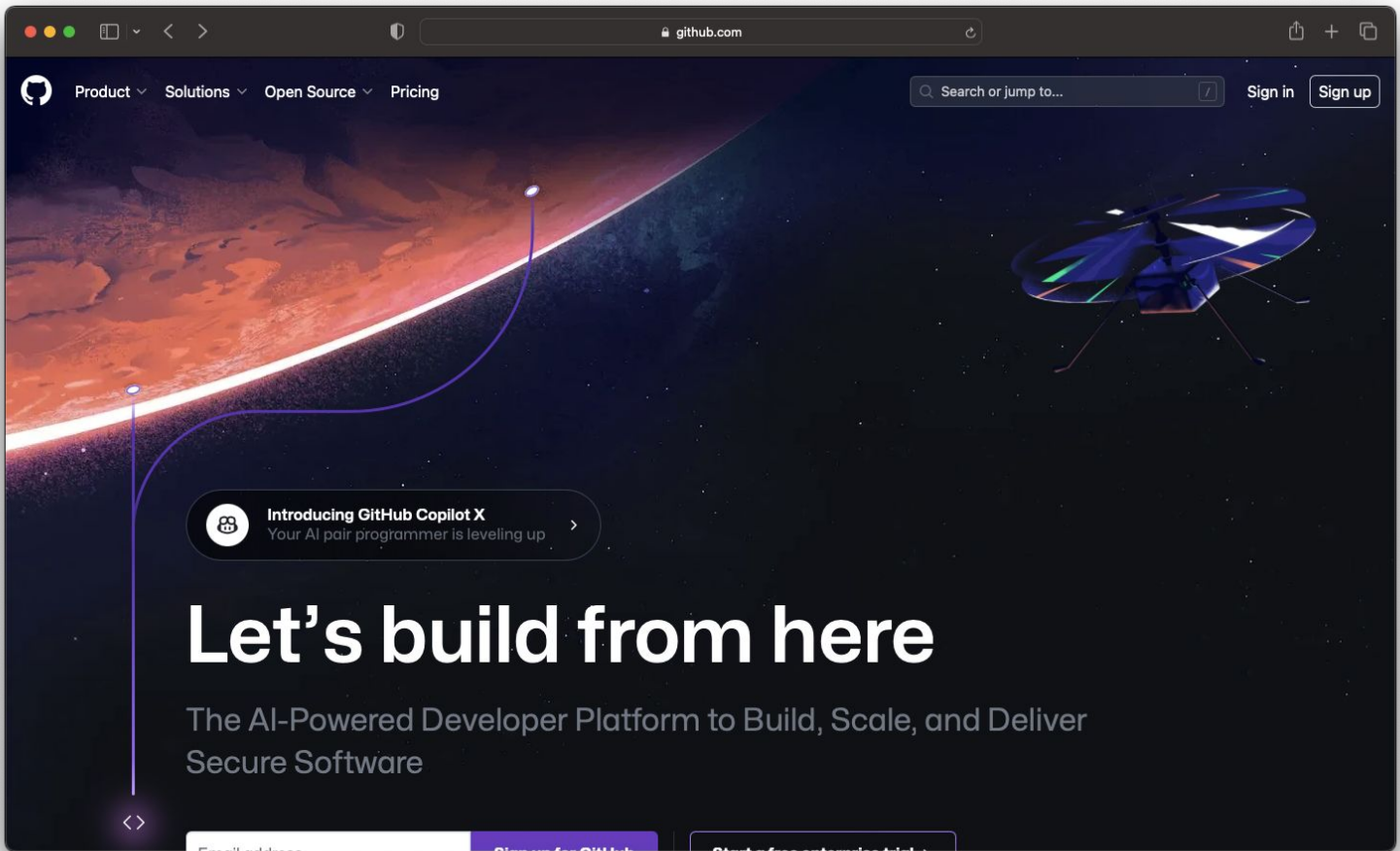


 [Mac GUIs](#)

 [Tarballs](#)

 [Windows Build](#)

 [Source Code](#)



<https://github.com/>

It's like a shared Dropbox folder that you have to sync yourself, on each of your computers, in specific orders

Why not just use Dropbox?

The screenshot shows a web browser window displaying the commit history of a GitHub repository. The browser's address bar shows the URL `https://github.com/jtleek/jtleek.github.io/commits/master?page=2`. The page lists several commits, with pink arrows highlighting specific ones:

- A commit titled "Merge pull request #14 from hammer/patch-1" by jtleek, committed on May 4, 2015, with commit hash `5964f0c`.
- A commit titled "Fix typo on papers.md" by hammer, committed on May 4, 2015, with commit hash `83d1130`. This commit is highlighted by a pink arrow pointing to the title and another pink arrow pointing to the hash.
- A commit titled "region report paper" by jtleek, committed on May 1, 2015, with commit hash `613ec7f`.
- A commit titled "added boosting lecture" by jtleek, committed on Apr 30, 2015, with commit hash `14de511`.
- A commit titled "polyester paper" by jtleek, committed on Apr 30, 2015, with commit hash `ae537a`.

Other visible commits include "updated papers with rail" (hash `05d3ebd`) and "jtleek committed on May 8, 2015". The browser's taskbar at the bottom shows various applications like "Apps", "Inbox", "Simply Statistics", "Google Scholar", "Google Music", "datastyle", and "Biostat-spreadsheet".

SISBID / Data-Wrangling

Unwatch 13 Star 51 Fork 76

Code Issues Pull requests Actions Projects Wiki Security Insights

gh-pages 11 branches 1 tag

Go to file Add file Code

carriewright11 Merge pull request #35 from SISBI... ✓ faef211 5 hours ago 338 commits

data	all pdfs may be created	12 months ago
labs	Merge pull request #36 from SISBID/data_cleaning	5 hours ago
lecture_notes	Merge pull request #36 from SISBID/data_cleaning	5 hours ago
.gitignore	addeed token	12 months ago
.nojekyll	updated license, added webpage	6 years ago
Google_Doc_Syll.url	updating data io lab	12 months ago
LICENSE	updated license, added webpage	6 years ago
Module1.Rproj	smaller repo	12 months ago
README.md	Update README.md	9 days ago
all_the_packages.txt	all the packages added	12 months ago
download_pdfs.R	updated index and the pdfs	12 months ago
index.Rmd	fixing links for subsetting lab from 2 to 1	2 days ago
index.html	fixing links for subsetting lab from 2 to 1	2 days ago
list_all_packages.R	all the packages added	12 months ago

About

Teaching material for Summer Institute in Statistics for Big Data Module 1.

- Readme
- View license

Releases 1

2019 Final SISBID ... Latest on Jun 30, 2020

Packages

No packages published Publish your first package

Contributors 8



SISBID / Data-Wrangling

Unwatch 13 Star 51 Fork 76

Code Issues Pull requests Actions Projects Wiki Security Insights

gh-pages 11 branches 1 tag

Go to file Add file Code

	carriewright11 Merge pull request #35 from SISBI...	✓ faef211 5 hours ago	338 commits
data	all pdfs may be created		12 months ago
labs	Merge pull request #36 from SISBID/data_cleaning		5 hours ago
lecture_notes	Merge pull request #36 from SISBID/data_cleaning		5 hours ago
.gitignore	addeed token		12 months ago
.nojekyll	updated license, added webpage		6 years ago
Google_Doc_Syll.url	updating data io lab		12 months ago
LICENSE	updated license, added webpage		6 years ago
Module1.Rproj	smaller repo		12 months ago
README.md	Update README.md		9 days ago
all_the_packages.txt	all the packages added		12 months ago
download_pdfs.R	updated index and the pdfs		12 months ago
index.Rmd	fixing links for subsetting lab from 2 to 1		2 days ago
index.html	fixing links for subsetting lab from 2 to 1		2 days ago
list_all_packages.R	all the packages added		12 months ago

About

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Releases 1

2019 Final SISBID ... Latest on Jun 30, 2020

Packages

No packages published Publish your first package

Contributors 8



Install Git/Github Locally (for later)

<http://happygitwithr.com/install-git.html>

and

<https://try.github.io/levels/1/challenges/1>

Many cloud tools already have git installed!

Step 1: New repo on GitHub

avahoffman

Repositories

Find a repository...

- SISBID/Data-Wrangling
- jhudsl/AnVIL_Book_Getting_Started
- avahoffman/blue-grama-gene-expression
- jhudsl/intro_to_r
- avahoffman/DESeq2-viz-demo
- jhudsl/jhudsl.github.io
- avahoffman/CV-and-resumes

Show more

Recent activity

Add Instructor checklist as...



All activity

carriewright11 pushed to SISBID/Data-Wrangling 5 hours ago

- 6 commits to gh-pages
 - 98387ee fixing links for subsetting lab from 2 to 1
 - faef211 Merge pull request #35 from SISBID/subsetting_part2
 - 4 more commits »

carriewright11 pushed to SISBID/Data-Wrangling 2 days ago

- 1 commit to subsetting_part2
 - 98387ee fixing links for subsetting lab from 2 to 1

KatherineCox pushed to jhudsl/AnVIL_Book_Getting_Started 2 days ago

- 1 commit to main
 - 00d7503 Render bookdown

<https://github.com/>

The image shows a screenshot of the GitHub website. At the top, there is a navigation bar with the GitHub logo, a search bar, and links for Pulls, Issues, Marketplace, and Explore. On the right side of the navigation bar, there is a user profile icon and a plus sign icon. A pink box highlights the plus sign icon, and a pink arrow points from it to a dropdown menu. The dropdown menu is open and contains the following options: "New repository", "Import repository", "New gist", "New organization", and "New project". The "New repository" option is highlighted in blue. Below the navigation bar, the main content area is divided into two columns. The left column shows the user's profile information, including the name "avahoffman" and a list of repositories. The right column shows the "All activity" section, which lists recent pushes to various repositories. The first activity is a push by "carriewright11" to "SISBID/Data-Wrangling" 5 hours ago, with 6 commits to "gh-pages". The second activity is another push by "carriewright11" to "SISBID/Data-Wrangling" 2 days ago, with 1 commit to "subsetting_part2". The third activity is a push by "KatherineCox" to "jhudsl/AnVIL_Book_Getting_Started" 2 days ago, with 1 commit to "main".

Search or jump to... / Pulls Issues Marketplace Explore

avahoffman ▾

Repositories New

Find a repository...

- [SISBID/Data-Wrangling](#)
- [jhudsl/AnVIL_Book_Getting_Started](#)
- [avahoffman/blue-grama-gene-expression](#)
- [jhudsl/intro_to_r](#)
- [avahoffman/DESeq2-viz-demo](#)
- [jhudsl/jhudsl.github.io](#)
- [avahoffman/CV-and-resumes](#)

Show more

Recent activity

- [Add Instructor checklist as...](#)

All activity

carriewright11 pushed to **SISBID/Data-Wrangling** 5 hours ago

6 commits to [gh-pages](#)

- [98387ee](#) fixing links for subsetting lab from 2 to 1
- [faef211](#) Merge pull request #35 from SISBID/subsetting_part2

4 more commits »

carriewright11 pushed to **SISBID/Data-Wrangling** 2 days ago

1 commit to [subsetting_part2](#)

- [98387ee](#) fixing links for subsetting lab from 2 to 1

KatherineCox pushed to **jhudsl/AnVIL_Book_Getting_Started** 2 days ago

1 commit to [main](#)

- [00d7503](#) Render bookdown

<https://github.com/>

Create a new repository


A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository](#).

Repository template

Start your repository with a template repository's contents.

No template ▾

Owner *

 avahoffman ▾

Repository name *

my_first_project ✓

Great repository names are short and memorable. Need inspiration? How about [fuzzy-pancake?](#)

Description (optional)

My first project files



Public

Anyone on the internet can see this repository. You choose who can commit.



Private

You choose who can see and commit to this repository.

Initialize this repository with:

Skip this step if you're importing an existing repository.



Add a README file

This is where you can write a long description for your project. [Learn more](#).



Add .gitignore

Choose which files not to track from a list of templates. [Learn more](#).



Choose a license

A license tells others what they can and can't do with your code. [Learn more](#).

This will set `main` as the default branch. Change the default name in your [settings](#).

Create repository

<https://github.com/new>



Search or jump to...

Pulls Issues Marketplace Explore



avahoffman / my_first_project

Unwatch 1

Star 0

Fork 0

Code

Issues

Pull requests

Actions

Projects

Wiki

Security

Insights



main

Go to file

Add file

Code

About



avahoffman Initial commit



README.md

Initial commit

Clone



HTTPS SSH GitHub CLI

https://github.com/avahoffman/my_first



Use Git or checkout with SVN using the web URL.



Open with GitHub Desktop



Download ZIP

README.md

my_first_project

My first project files

My first project files

Readme

Releases

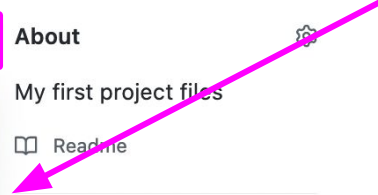
No releases published

[Create a new release](#)

Packages

No packages published

[Publish your first package](#)



Step 2: Create “local” link



File

Edit

Code

View

Plots

Session

Build

Debug

Profile

Tools

Help



Go to file/function



Addins

Console

Term

Create a project



R 4.2.0 · ~/

```
R version 4.2.0 (2022-04-22) -- "Vigorous Calisthenics"  
Copyright (C) 2022 The R Foundation for Statistical Computing  
Platform: x86_64-pc-linux-gnu (64-bit)
```

```
R is free software and comes with ABSOLUTELY NO WARRANTY.  
You are welcome to redistribute it under certain conditions.  
Type 'license()' or 'licence()' for distribution details.
```

New Project Wizard

Create Project



New Directory

Start a project in a brand new working directory



Existing Directory

Associate a project with an existing working directory



Version Control

Checkout a project from a version control repository



Cancel

) -- "Vigorous Calisther
undation for Statistical
nu (64-bit)
s with ABSOLUTELY NO WAR
bute it under certain co
e()' for distribution de
but running in an Englis
t with many contributors
ore information and
R or R packages in pub
s, 'help()' for on-line
browser interface to he

123 MiB

Environment is empty

Viewer

Upload Delete

Size

New Project Wizard

Back

Create Project from Version Control



Git

Clone a project from a Git repository



Subversion


Checkout a project from a Subversion repository



Cancel

New Project Wizard

[Back](#) **Clone Git Repository**



Repository URL:

Project directory name:

Create project as subdirectory of:
 [Browse...](#)

[Create Project](#) [Cancel](#)

Avoid placing on OneDrive (Dropbox seems to be ok)

Step 3: Change stuff

```
my-script.R x  
1 # My first script
```

Console Terminal x Jobs x
R 4.2.0 · ~/my_first_project/

R version 4.2.0 (2022-04-22) -- "Vigorous Calisthenics"
Copyright (C) 2022 The R Foundation for Statistical Computing
Platform: x86_64-pc-linux-gnu (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

Environment History Connections Git Tutorial
Import Dataset 230 MiB
R Global Environment
Environment is empty

Files Plots Packages Help Viewer

Home > my_first_project

Name	Size	Modified
..		
.gitignore	40 B	Jul 24, 2022, 9:42 PM
my_first_project.Rproj	205 B	Jul 24, 2022, 9:42 PM
my-script.R	17 B	Jul 24, 2022, 9:43 PM

Environment History Connections Git Tutorial

Diff Commit [down arrow] [up arrow] [clock icon] [gear icon] main [refresh icon]

Staged	Status	Path
<input type="checkbox"/>	? ?	.gitignore
<input type="checkbox"/>	? ?	my-script
<input type="checkbox"/>	? ?	my_first_project.Rproj

1

2

Changes History main Stage Revert Ignore

Pull Push

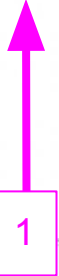
Staged	Status	Path
<input checked="" type="checkbox"/>	A	.gitignore
<input checked="" type="checkbox"/>	A	my-script.R
<input checked="" type="checkbox"/>	A	my_first_project.Rproj

Commit message 22 characters

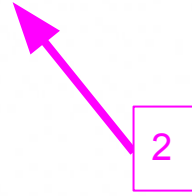
Created my script file

Amend previous commit

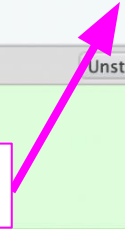
Commit



1



2



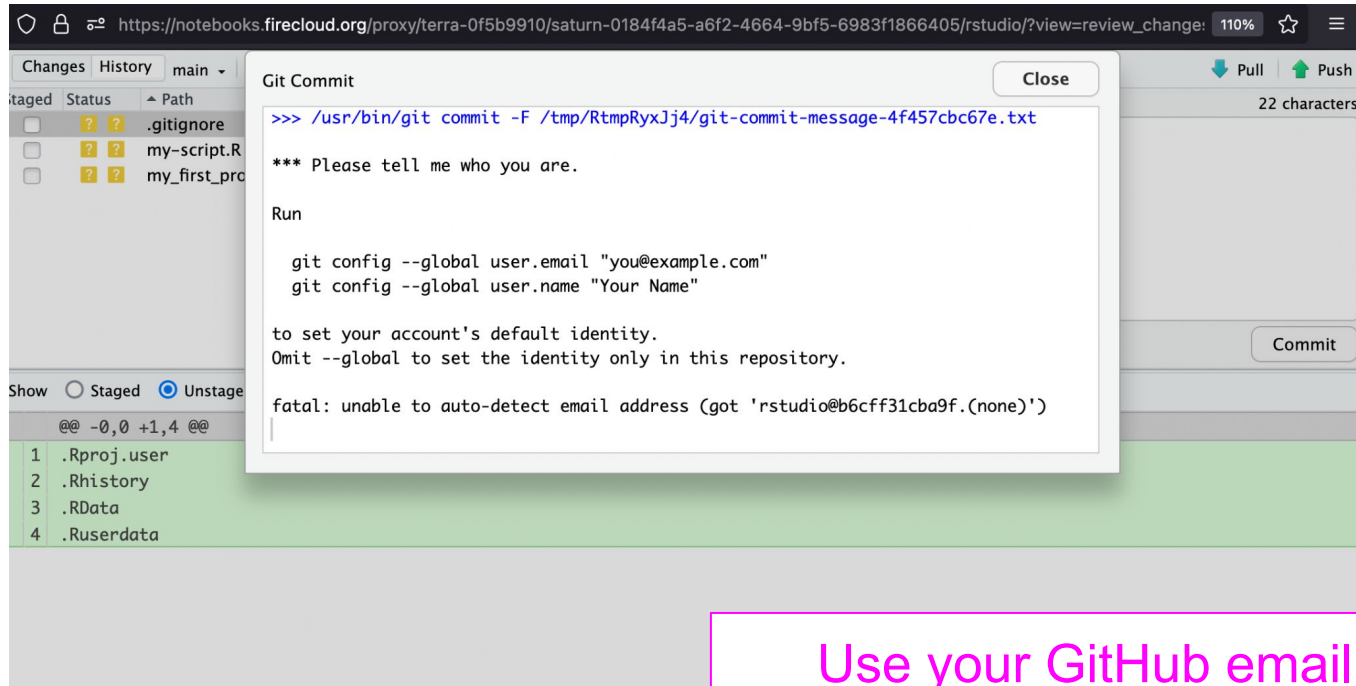
3

Staged Unstaged Context 5 lines Ignore Whitespace Unstage All

```
@@ -0,0 +1,4 @@  
1 .Rproj.user  
2 .Rhistory  
3 .RData  
4 .Ruserdata
```

Unstage chunk

You might be prompted for more information



The screenshot shows a web browser window with a URL from `https://notebooks.firecloud.org`. A modal window titled "Git Commit" is open, displaying a terminal session. The terminal shows the command `>>> /usr/bin/git commit -F /tmp/RtmpRyxJj4/git-commit-message-4f457cbc67e.txt` and the prompt `*** Please tell me who you are.`. Below this, it says "Run" and shows the commands `git config --global user.email "you@example.com"` and `git config --global user.name "Your Name"`. A message follows: "to set your account's default identity. Omit --global to set the identity only in this repository." The terminal ends with a fatal error: `fatal: unable to auto-detect email address (got 'rstudio@b6cff31cba9f.(none)')`. The background shows a file explorer with files like `.gitignore`, `my-script.R`, and `my_first_pro`, and a "Commit" button.

Use your GitHub email and display name

You might be prompted for more information



The screenshot shows the RStudio interface with a terminal window open. The terminal title is 'Terminal 1' and the current directory is '/home/rstudio/my_first_project'. The terminal output shows three lines of commands and their results:

```
rstudio@b6cff31c1ba9f:~/my_first_project$ git config --global user.email "avamariehoffman@gmail.com"
rstudio@b6cff31c1ba9f:~/my_first_project$ git config --global user.name "AM Hoffman"
rstudio@b6cff31c1ba9f:~/my_first_project$
```

A pink arrow points from a pink-bordered box containing the text 'Use the RStudio Terminal' to the 'Terminal 1' tab in the RStudio interface.

Use the RStudio Terminal

ory main ▾

is ahead of 'orig

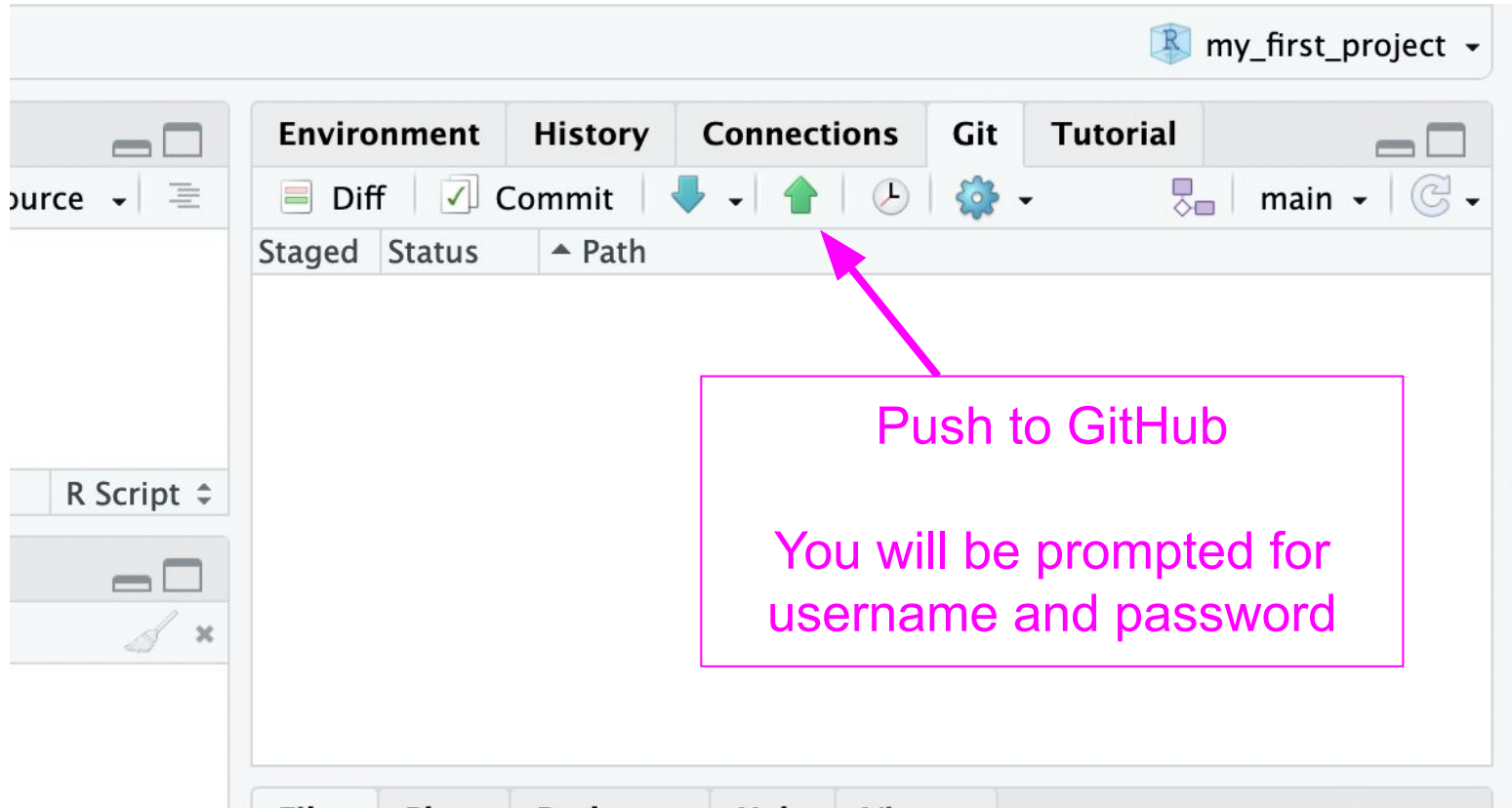
▲ Path

d Unstage

Git Commit






Close

```
>>> /usr/bin/git commit -F /tmp/RtmpRyxJj4/git-commit-message-4f4261ceab0.txt
[main 0e67afd] Created my script file
3 files changed, 18 insertions(+)
create mode 100644 .gitignore
create mode 100644 my-script.R
create mode 100644 my_first_project.Rproj
```



main 2 branches 0 tags

Go to file Add file Code

 avahoffman Update README.md	0bf19d7 now	5 commits
 .gitignore	Created my script file	4 minutes ago
 README.md	Update README.md	now
 my-script.R	Created my script file	4 minutes ago
 my_first_project.Rproj	Created my script file	4 minutes ago

README.md

```
my_ Success!
```



About

My first project files

- Readme
- 0 stars
- 1 watching
- 0 forks

Releases

No releases published
[Create a new release](#)

Packages

No packages published
[Publish your first package](#)

Languages



Review

- You add/edit files in your project on your personal computer / cloud (your local repository).
- You publish/share these changes to a remote repository (GitHub) so that others may see them/incorporate them into their own work.
- Git commands (if you want to use command line)
 - `git status`
 - `git add .`
 - `git commit -m "A message here"`
 - `git push`

Staging files and folders with git add

<code>git add file_or_folder</code>	stages specified file or folder
<code>git add .</code>	stages new and modified files
<code>git add -u</code>	stages modified and deleted files
<code>git add -A</code>	stages new, modified, and deleted files
<code>git add *.csv</code>	Stages any files with .csv extension
<code>git add *</code>	Use with caution: stages everything

**Step 4: Incorporate changes
made by others**

<> Edit file

Preview

 Show diff

my_first_project

Here is a description of the project.

Updating the readme on remote
(on GitHub) - simulates changes
made by others



Commit changes

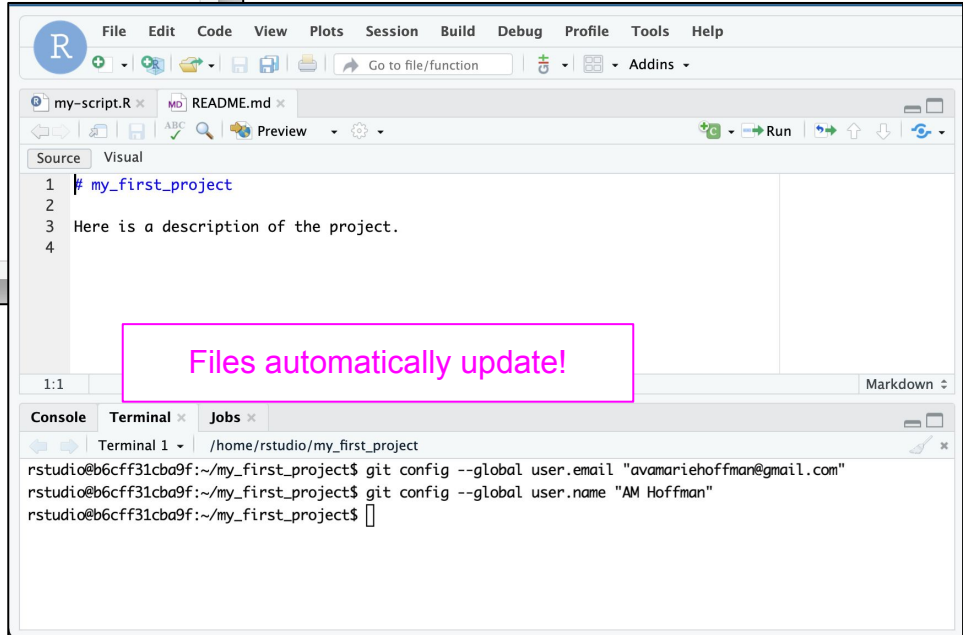
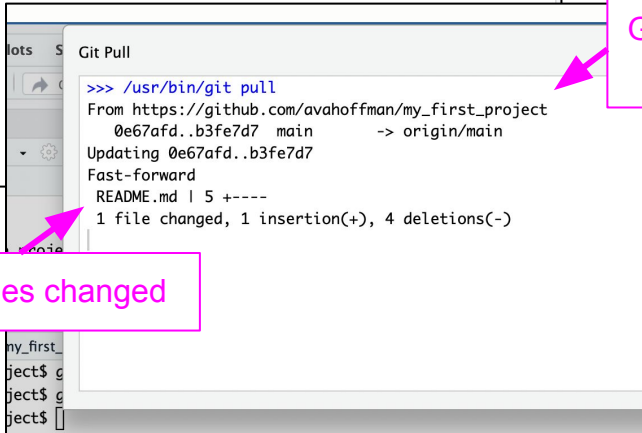
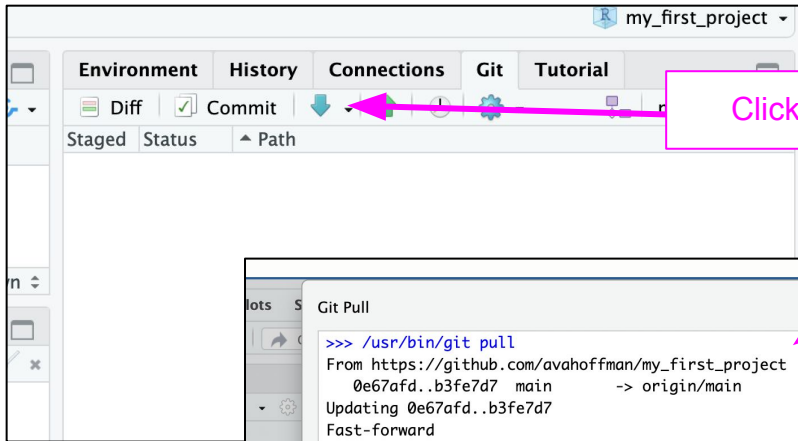
Update README.md

Add an optional extended description...

- Commit directly to the `main` branch.
- Create a **new branch** for this commit and start a pull request. [Learn more about pull requests.](#)

Commit changes

Cancel



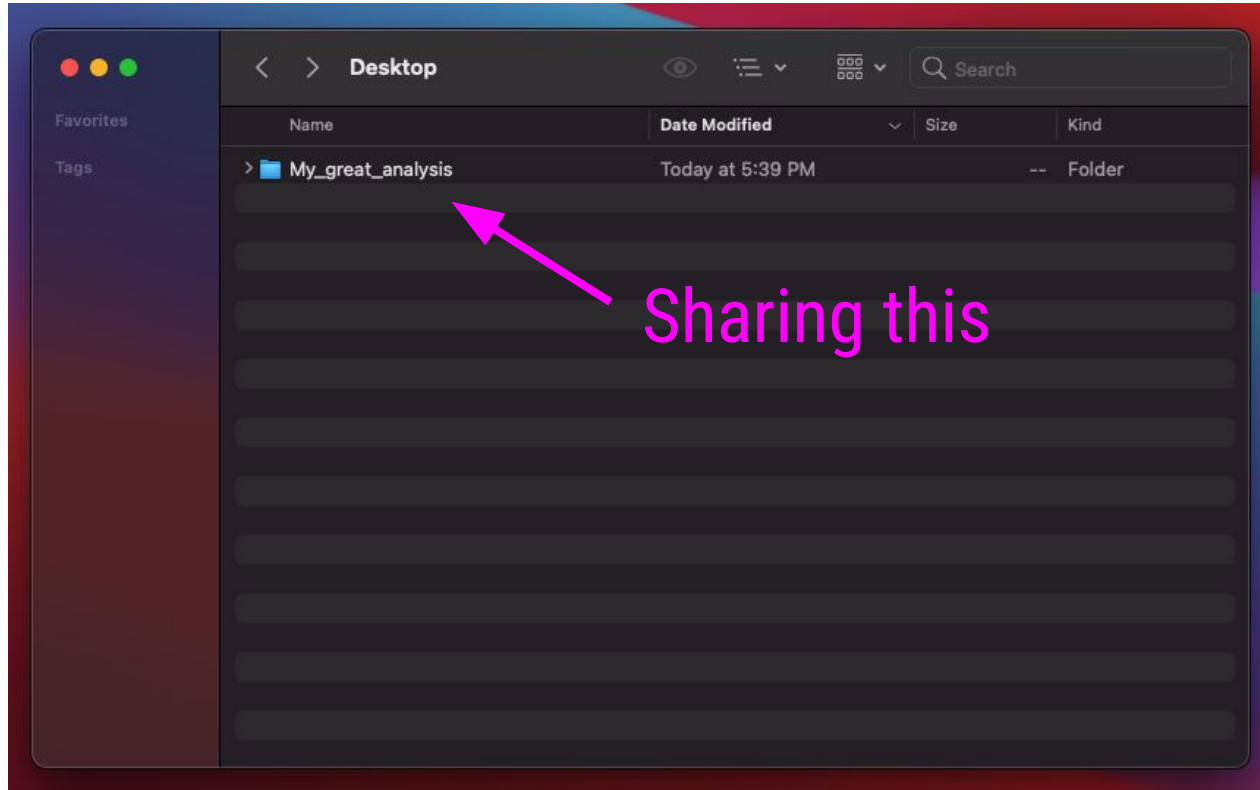
Pulling

- Others have pushed changes to the remote repository.
- You want to incorporate those changes into your local repository.
- Git commands
 - `git pull`

Pro tip: pull
before you start
working on new
local changes!

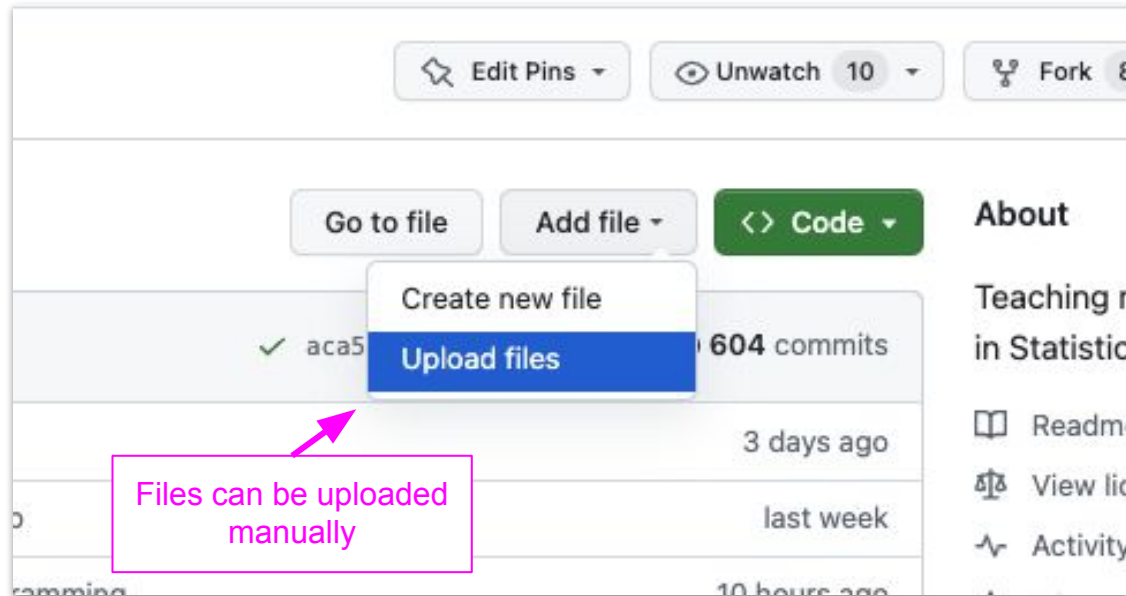
When working with others, you should create **branches** so you don't overwrite work by others. Let us know if you want to learn more about this!

What is the goal of making code?



If nothing else...

Use github as a place to store and share your code!



Resources!

<https://git-school.github.io/visualizing-git/>

<https://rogerdudler.github.io/git-guide/>

<https://www.katacoda.com/courses/git>

https://github.com/Meghansaha/please_let_me_merge?tab=readme-ov-file#resources-for-improving-git-knowledge

git cheat sheet

learn more about git the simple way at rogerdudler.github.io/git-guide/
client sheet created by N.ra. | [eschke of ninjabits.com](https://www.ninjabits.com)

create & clone

create new repository `git init`
clone local repository `git clone /path/to/repository`
clone remote repository `git clone username@host:/path/to/repository`

add & remove

add changes to INDEX `git add <filename>`
add all changes to INDEX `git add *`
remove/delete `git rm <filename>`

commit & synchronize

commit changes `git commit -m "Commit message"`
push changes to remote repository `git push origin master`
connect local repository to remote repository `git remote add origin <server>`
update local repository with remote changes `git pull`

branches

create new branch `git checkout -b <branch>`
e.g. `git checkout -b feature_x`
switch to master branch `git checkout master`
delete branch `git branch -d <branch>`
push branch to remote repository `git push origin <branch>`

merge

merge changes from another branch `git merge <branch>`
view changes between two branches `git diff <source_branch> <target_branch>`
e.g. `git diff master_x feature_y`

tagging

create tag `git tag <tag> <commit ID>`
e.g. `git tag 1.0.0 1b2e1d63ff`
get commit IDs `git log`

restore

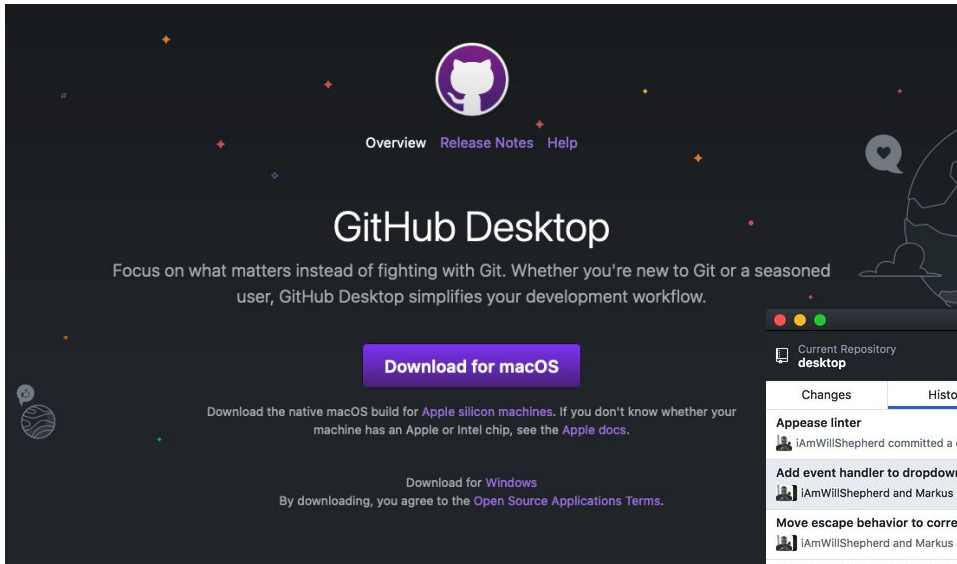
replace working copy with latest from HEAD `git checkout -- <filename>`



Tip

Want a simple but powerful
git-client for your mac?
Try Tower: www.git-tower.com/

https://rogerdudler.github.io/git-guide/files/git_cheat_sheet.pdf



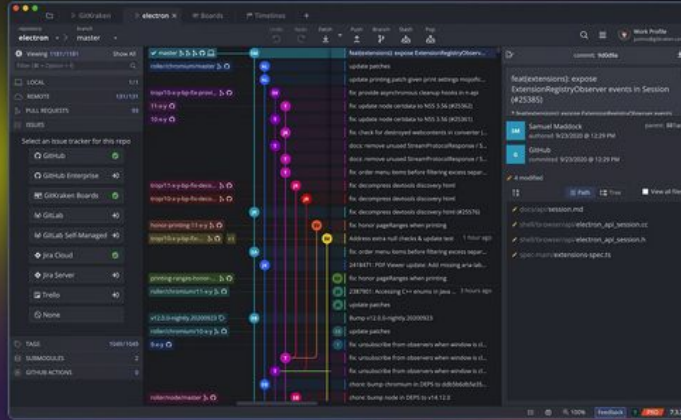
Changes	History	Diff
Add event handler to dropdown component iAmWillShepherd and Markus Olsson committed - c79e71c 1 changed file		
Co-Authored-By: Markus Olsson <nrik@users.noreply.github.com>		
app/src/ui/t.../dropdown.tsx		
145	145	<code>this.state = { clientRect: null }</code>
146	146	<code>}</code>
147	147	
148	148	<code>+ private get isOpen() {</code>
149	149	<code>+ return this.props.dropdownState === 'open'</code>
150	150	<code>+ }</code>
151	151	<code>+ }</code>
148	152	<code>private dropdownIcon(state: DropdownState): OcticonSym</code>
149	153	<code>bol {</code>
150	154	<code>// @TODO: Remake triangle octicon in a 12px version,</code>
		<code>// right now it's scaled badly on normal dpi monitor</code>
		<code>s.</code>
		<code>@@ -249,6 +253,13 @@ export class ToolbarDropdown extends</code>
		<code>React.Component<</code>
249	253	<code>}</code>
250	254	<code>}</code>
251	255	
	256	<code>+ private onFoldoutKeyDown = (event:</code>
		<code>React.KeyboardEvent<HTMLInputElement>) => {</code>
257	257	<code>+ if (!event.defaultPrevented && this.isOpen &&</code>
		<code>event.key === 'Escape') {</code>
		<code>+ event.preventDefault()</code>

<https://desktop.github.com/>



GitKraken

Legendary Git GUI client for Windows, Mac & Linux



 Download the #1 Free Git GUI

Other Platforms

See Features →

<https://www.gitkraken.com/>