

Intro to Github

Primer on collaboration & conflict resolution

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**with substantial content lifted from Professor Mjumbe Poe*





What is Github?

Why use it?

1. Version control

1. Multiple versions can co-exist

2. Track changes

3. Escape pod

2. Social coding 🎉🕺💃

3. Minimize clutter

What you want to **avoid**:

- Tree-Canopy-Loss.Rmd
- TreeCanopyLoss.Rmd
- TreeCanopyLoss.html
- TreeCanopyLoss.md
- TreeCoverage
- Tree_Canopy_Loss.Rmd
- Tree_Canopy_Loss.html
- Tree_Canopy_Loss.md

Key terms

- **Repo(sitory)**: place for code + other files, contains version history
- **Commit/Push**: save to GitHub desktop -> push to cloud
- **Fork**: duplicate a repo to your Github account
- **Clone**: copy a repo to your desktop
- **Conflict**: changes to two branches cannot be automatically resolved (pain)

The screenshot shows a GitHub user profile for `annaduan09`. The user has 52 repositories. The profile includes a photo of a woman with long dark hair, her name `Anna Duan`, and her GitHub handle `annaduan09`. Her bio states she is a spatial data science grad student, TA, and researcher at UPenn, enthusiastic about spatial data, powerlifting, and cats. She has 6 followers and is following 11 people. The user interface shows search and filter options like 'New', 'Type', 'Language', and 'Sort'. Below the profile, five repositories are listed:

- 30daymapchallenge-day-3-a-century-of-immigration** (Public) - Mapping population density trends in NYC, 1910-2020. Updated 11 minutes ago.
- MUSA-508-github-conflict-demo** (Public) - Let's create and resolve a conflict in Github! Updated 45 minutes ago.
- musa-5000-assignment-1** (Public) - Updated on Dec 19, 2023.
- Stat-Assignment-6** (Public) - sentiment analysis for philly park yelp reviews. Updated on Dec 19, 2023.
- python-assignment-6** (Public) - Jupyter Notebook. Updated on Dec 12, 2023.

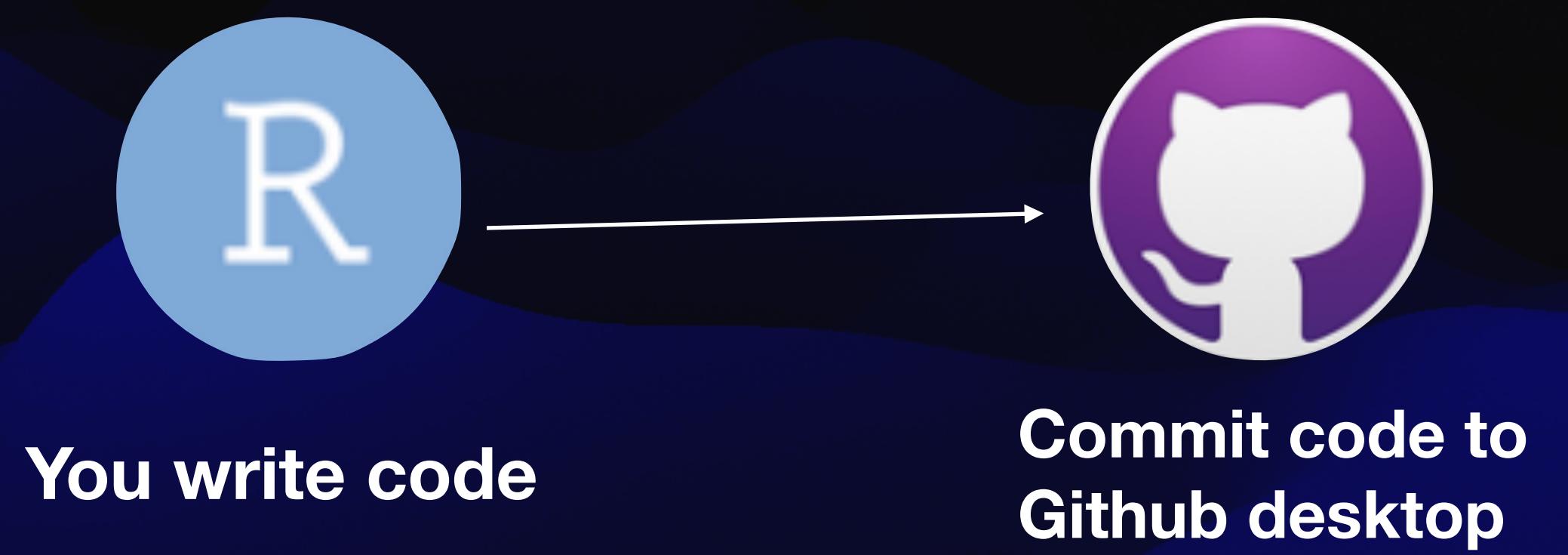
How it works (roughly)



R

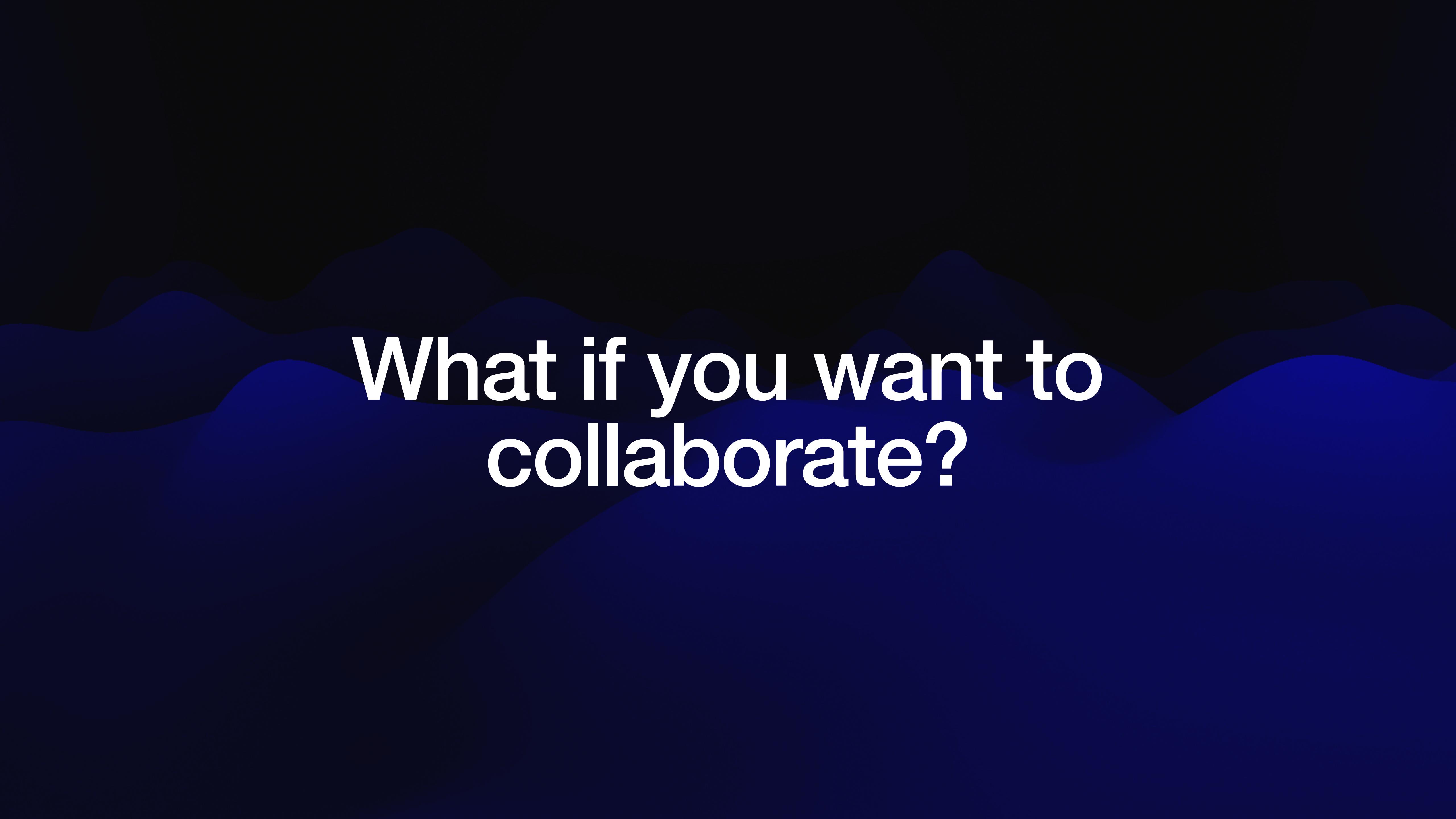
You write code

How it works (roughly)



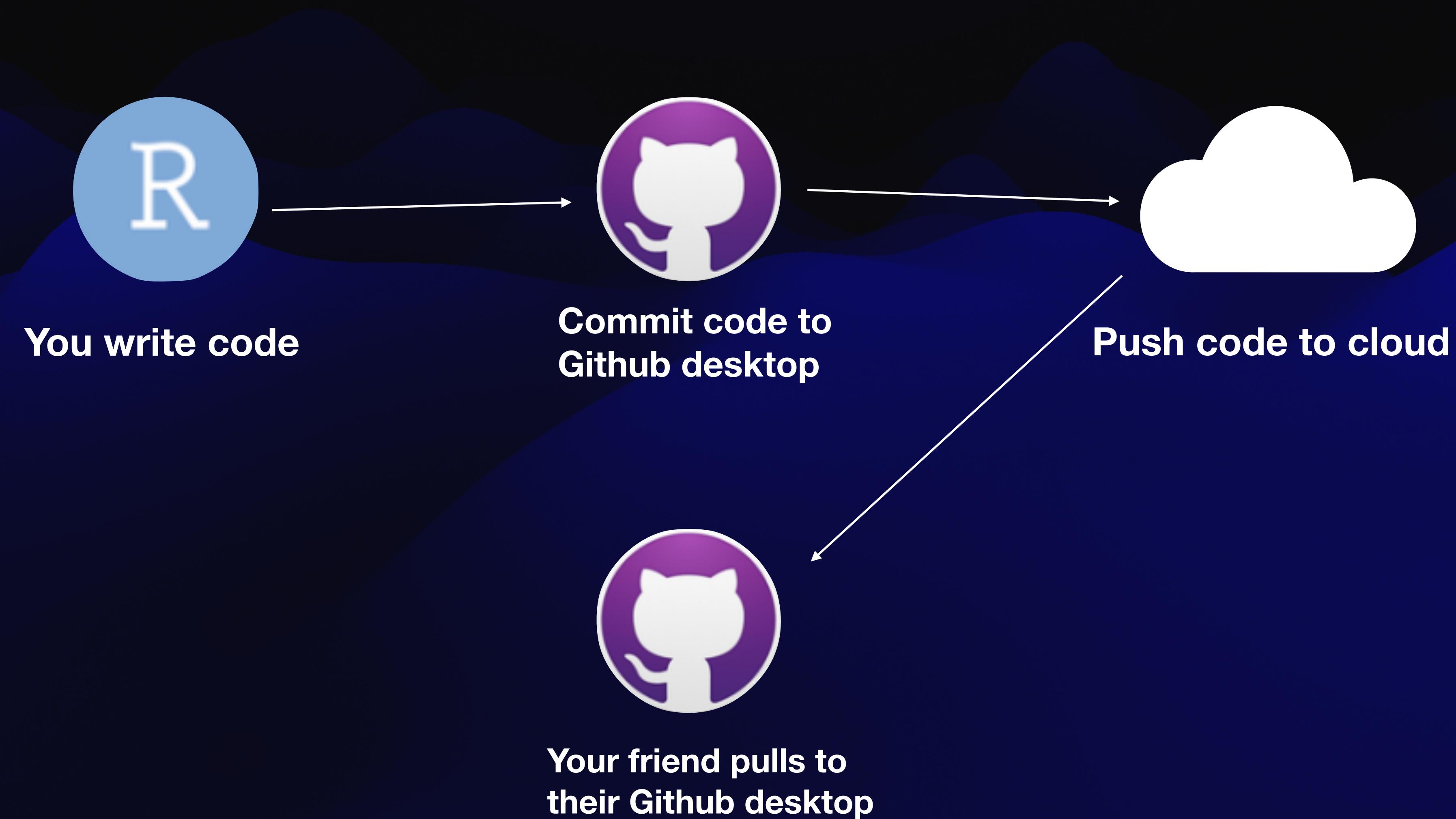
How it works (roughly)



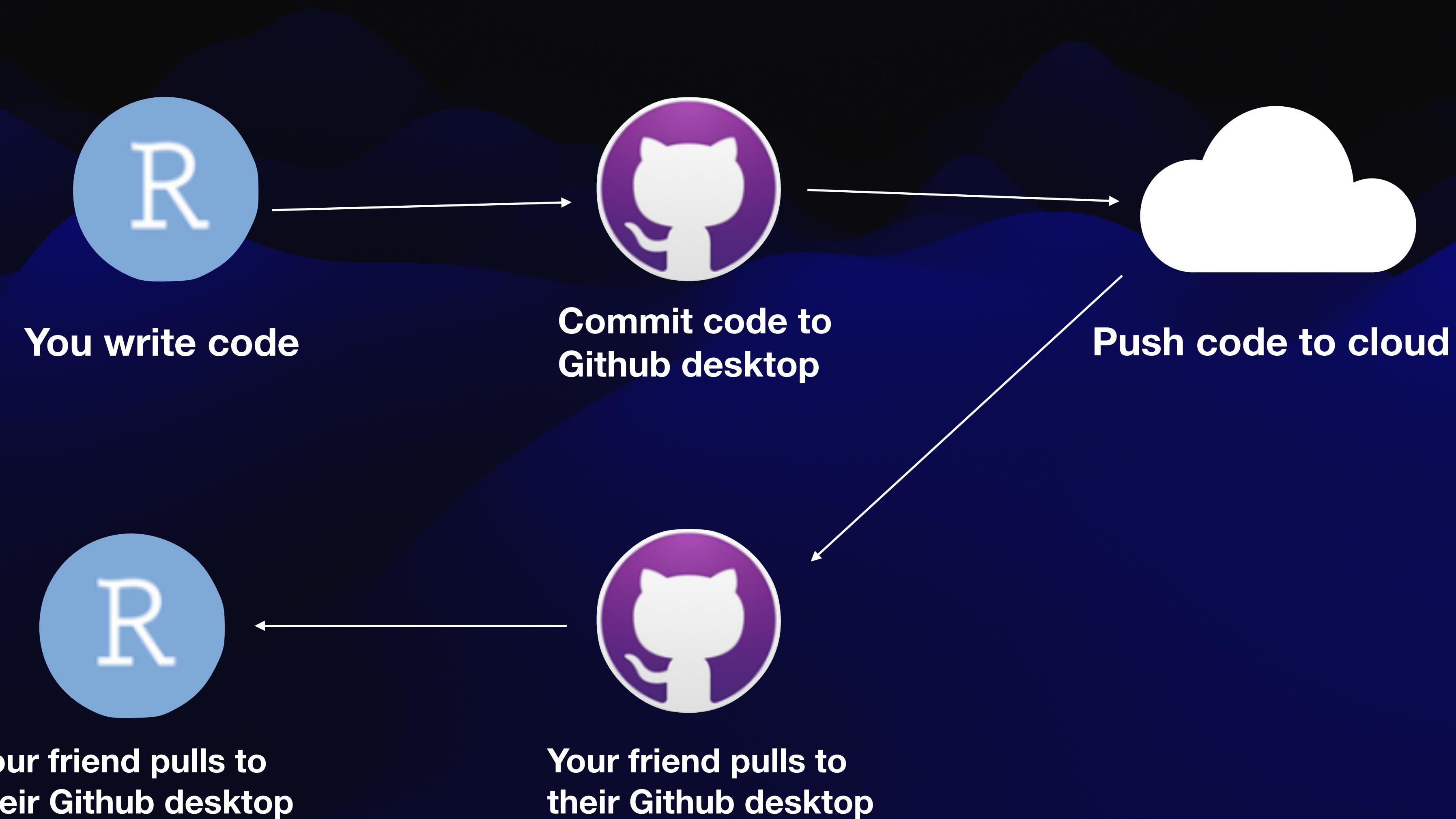


What if you want to
collaborate?

Github collaboration



Github collaboration

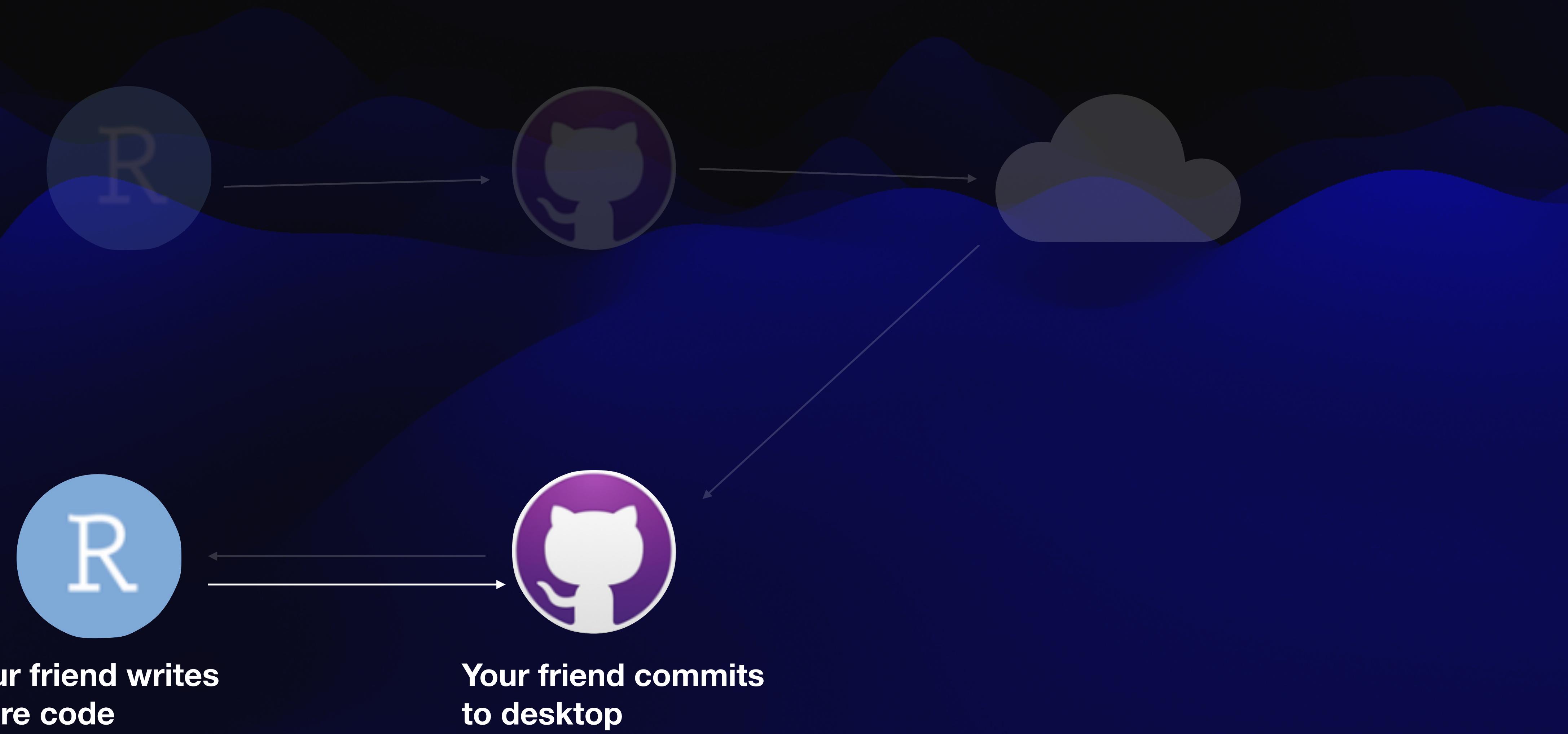


Github collaboration

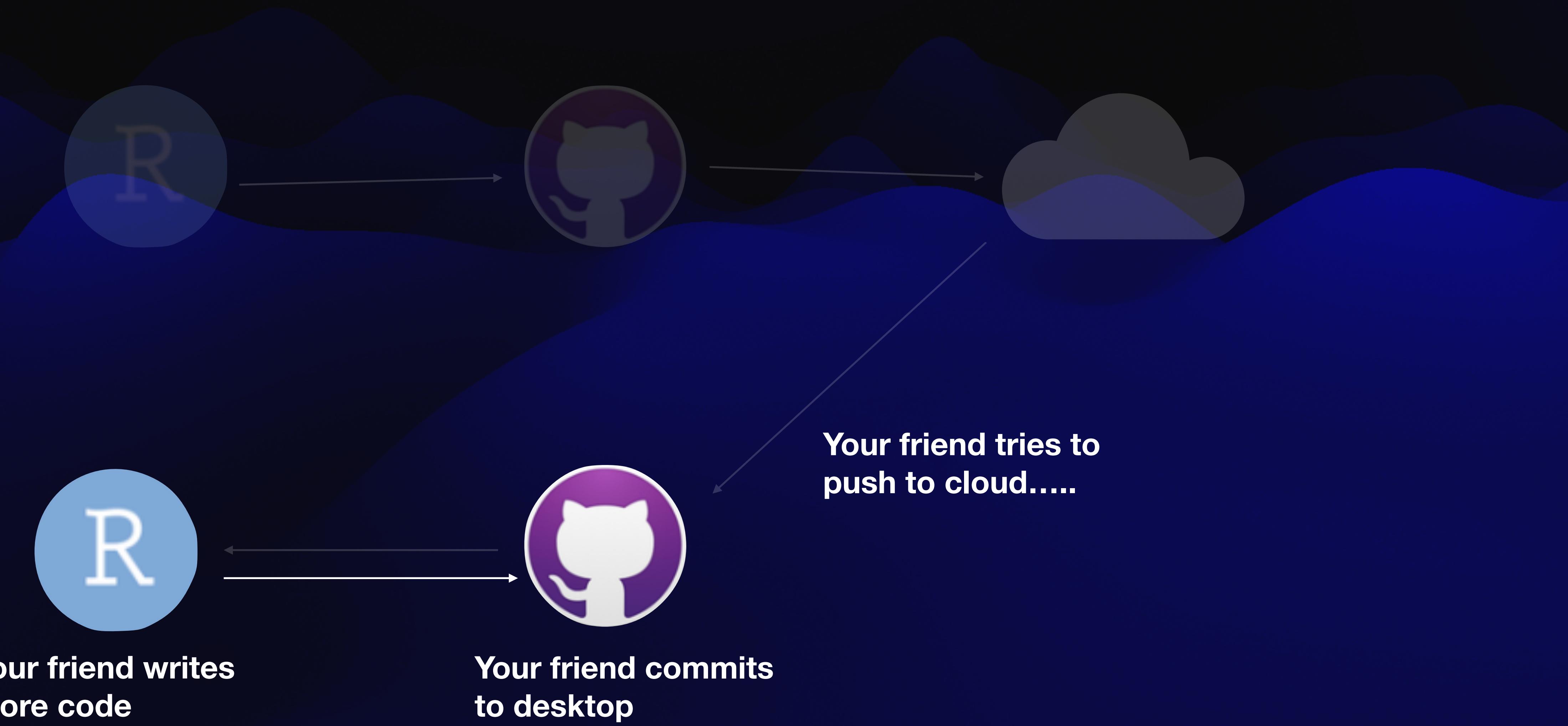


Your friend writes
more code

Github collaboration



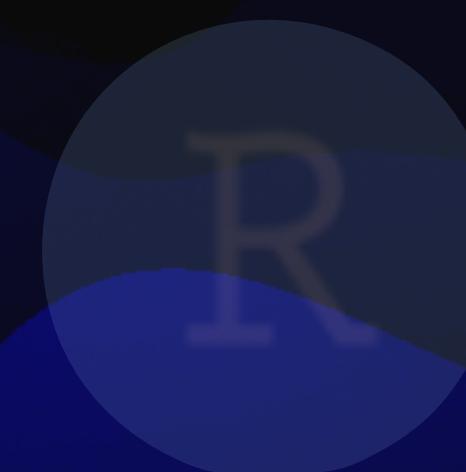
Github collaboration



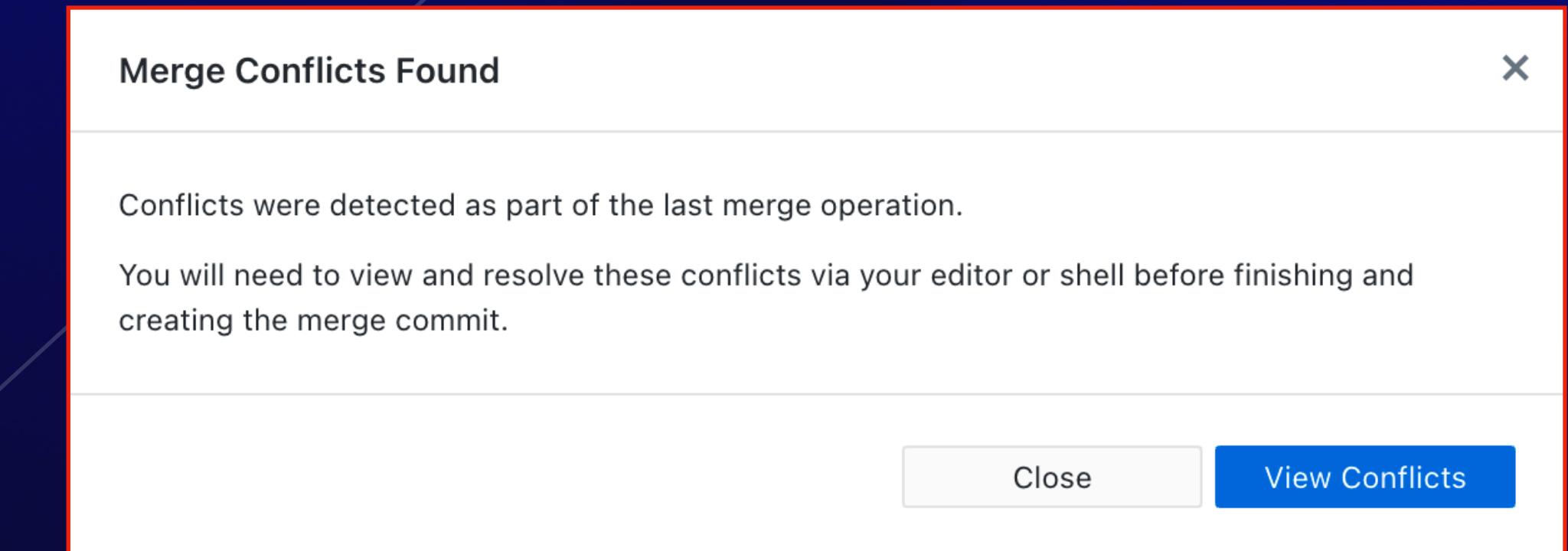
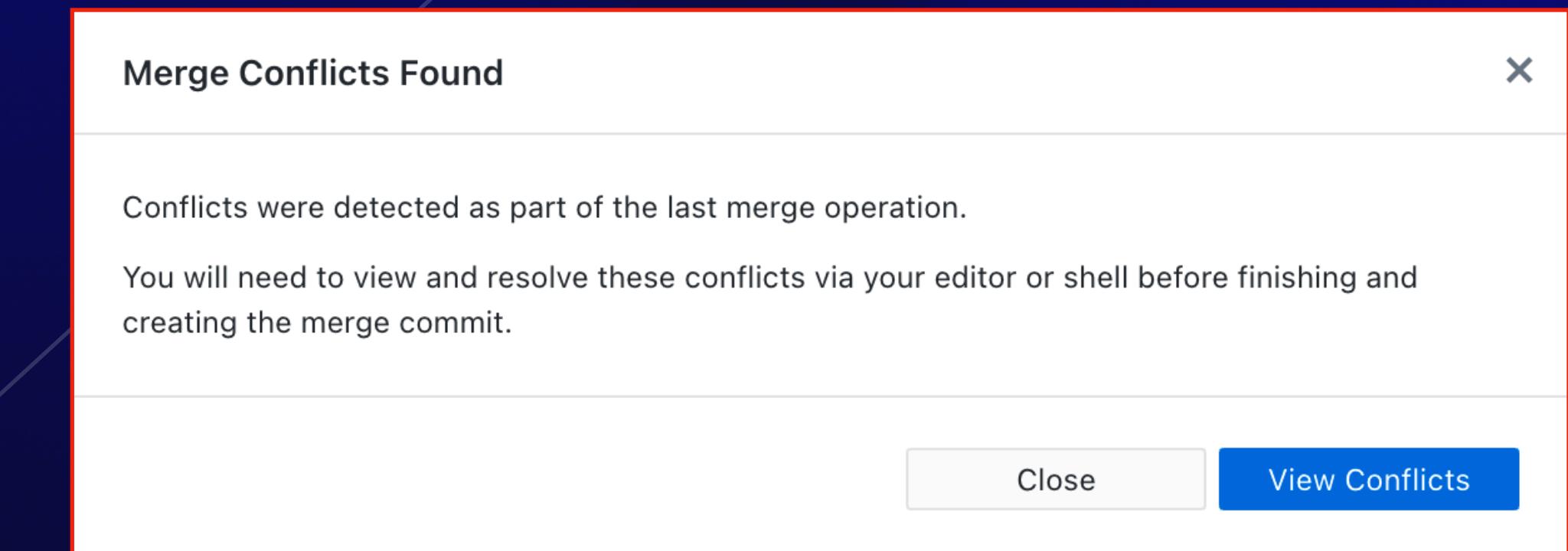
CONFFLICT

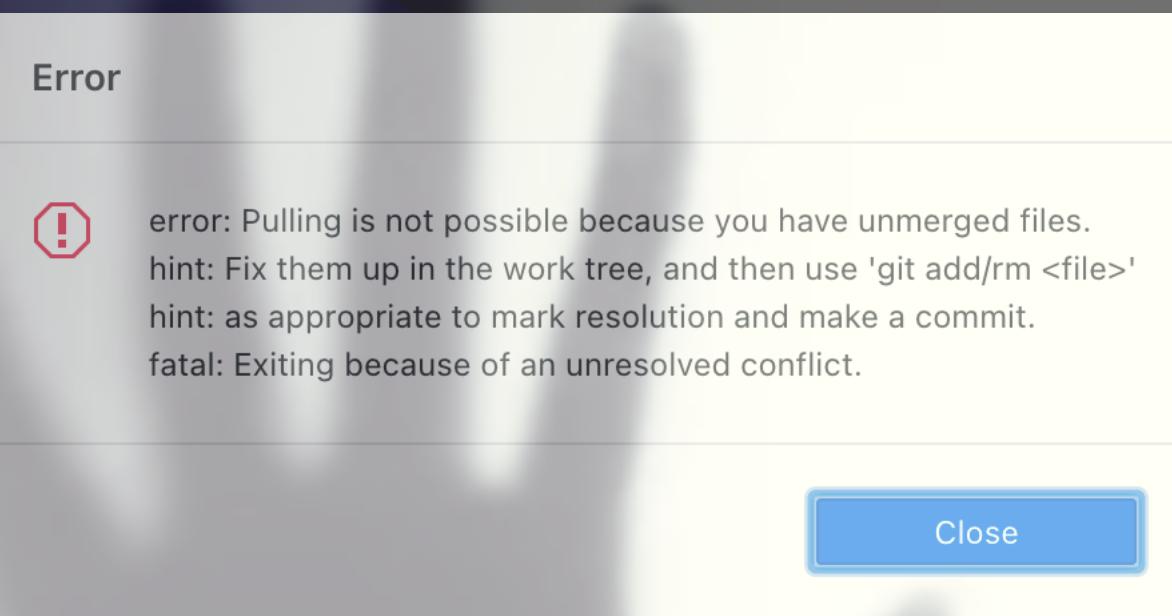


Your friend writes
more code



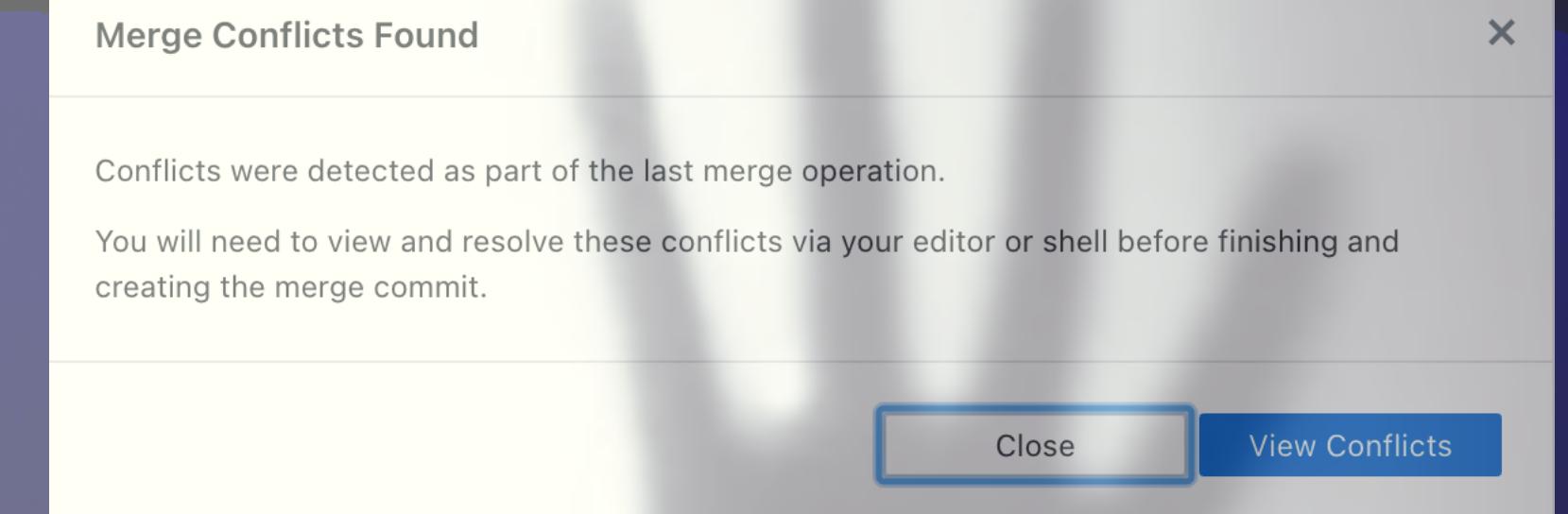
Your friend commits
to desktop



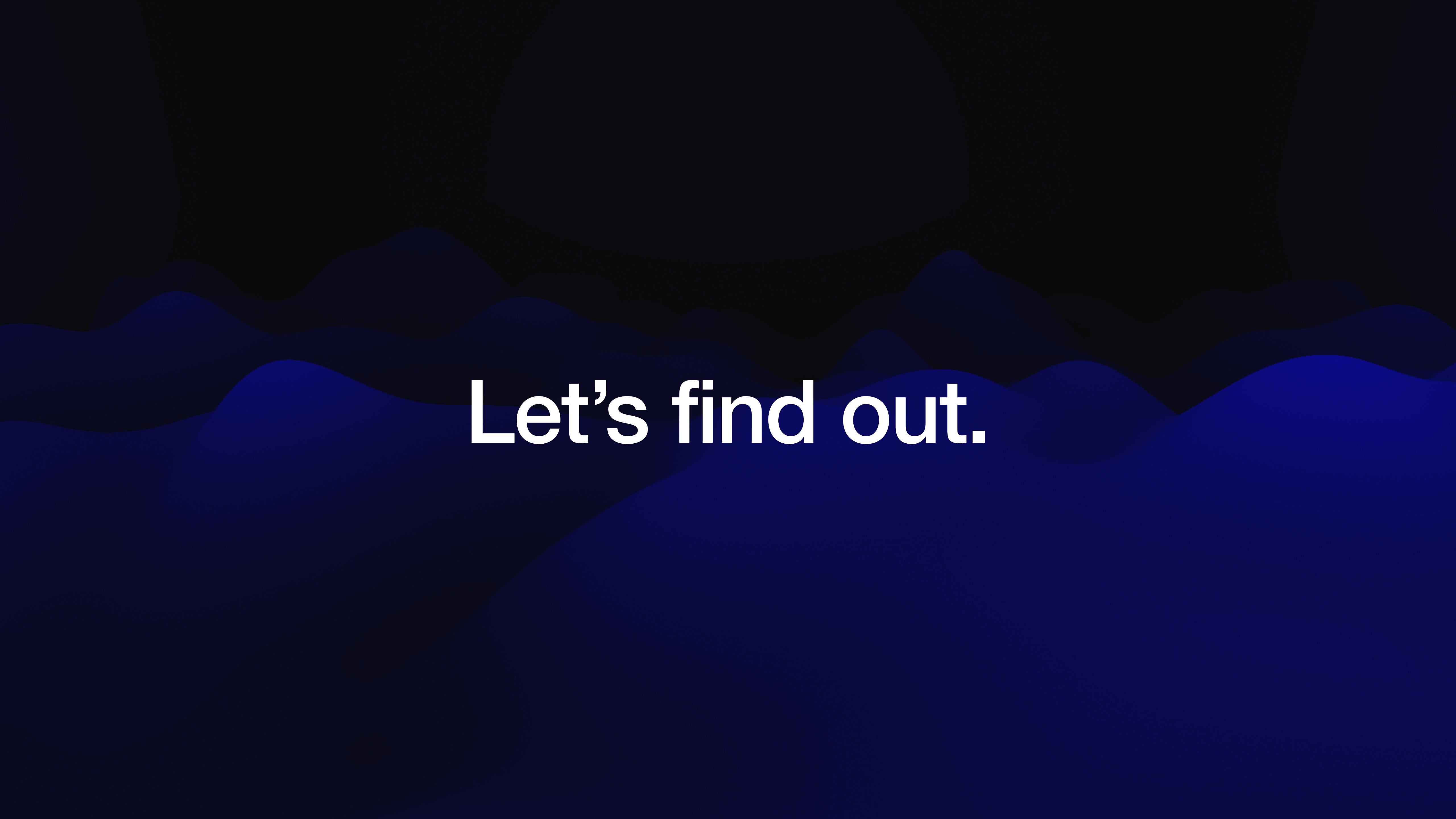


```
8 ````{r setup, include=FALSE}  
9 knitr::opts_chunk$set(echo = TRUE)  
10  
✖ 11 <<<<< HEAD  
✖ 12 =====  
13 library(sf)  
14 library(tidyverse)  
15 #library(mapview)  
16 library(pander)  
✖ 17 >>>>> 9251801d6ec76f4fe41e2f6a95086b5a7b241f4a  
18 library(ggplot)  
19 ````
```

What now??



```
@@ -8,5 +8,12 @@ output: html_document  
 8     8 ````{r setup, include=FALSE}  
 9     9 knitr::opts_chunk$set(echo = TRUE)  
10    10  
11 +<<<<< HEAD  
12 +=====  
13 +library(sf)  
14 +library(tidyverse)  
15 +#library(mapview)  
16 +library(pander)  
17 +>>>>> 9251801d6ec76f4fe41e2f6a95086b5a7b241f4a  
11    18 library(ggplot)  
12    19 ````
```

The background features a dark navy blue gradient with three distinct wavy layers. The top layer is a solid dark blue. Below it is a layer with a medium-dark blue gradient, and the bottom layer is a bright medium blue. These waves create a sense of depth and motion.

Let's find out.

Instructions

Fork repo here: <https://github.com/annaduan09/MUSA-508-github-conflict-demo> then follow instructions in README.

DO

- **READMEs:** explain repo contents and project background
- **Git ignore file:** don't commit irrelevant files
- Commit (and pull) **often**
- Include brief **summaries** of each commit - what changed?
- Organize your repo! Data, code, and outputs folders are a good start



DON'T

- Commit files >100MB*
- Use unprofessional commit messages
- Include api keys, sensitive data in commits
- Ignore conflicts



*There is a way, your TA just hasn't figured it out yet :')