



# CLASS 1

COURSE INTRO & GITHUB FOR DATA SCIENCE

Shiny from  Studio™

# OUTLINE

- Course intro
  - Instructor
  - Teacher's Assistant
  - Course overview
- GitHub for Data Science
  - Read: Introduction to Github for Data Scientists by Rebecca Vickery
    - <https://towardsdatascience.com/introduction-to-github-for-data-scientists-2cf8b9b25fba>
- R Projects

# Course

## Intro

**HELLO**

my name is

**GEOFFREY  
ARNOLD**

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[gla@andrew.cmu.edu](mailto:gla@andrew.cmu.edu)

# ABOUT ME

- Senior Digital Services Analyst
  - City of Pittsburgh
- MSPPM 2015
  - Heinz College



**HELLO**

my name is

**MALVIKA  
SINGH**

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# CLASSES & OFFICE HRS

- Classes

- Tue/Thu 4:30-5:50
- Location: HBH 1006

- Office Hours

- Geoffrey Arnold
  - Thursdays: 6:15-7:00
  - Location: HBH Lounge
- Malvika Singh
  - TBD

# COURSE OUTLINE

Weeks 1, 2, & 3 - Shiny

Week 4 - Maps with Leaflet

Week 5 - Advanced Shiny

Week 6 - SQL and API's

Week 7 - Human Centered Design



# Intro to Github





“Experience with version control is fast  
becoming a requirement for all data  
scientists”

—Rebecca Vickery



# WHAT IS GITHUB?

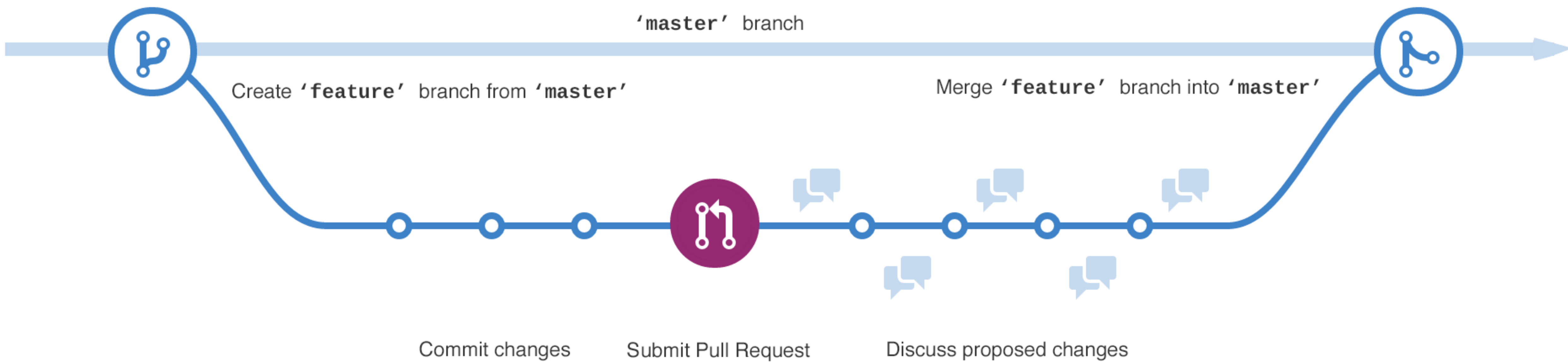
- Git is a Version Control Software
- Github stores the files for your project in a remote location and checks the differences as you change your code
- This allows you to roll back to previous versions of your project if you need to go back
- Makes sharing and collaboration much easier using the Github website

# OTHER VERSION CONTROL

There are other kinds of version control software, GitLab also uses git.



We will be using Github in this course, but if in a future life, you might use these others.



# Github Desktop and the Web



# EXERCISE



- ▶ Download Github Desktop: <https://desktop.github.com/>
- ▶ Sign up for Github: <https://github.com/join>
- ▶ Got to course page: <https://github.com/orgs/rforoperations2019/>
  - ▶ Clone Class 2 repo: <https://github.com/rforoperations2019/Class-02-Shiny-Intro>
  - ▶ Create your own branch as your CMU username

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# Github and Projects in RStudio



“R Projects are great.”

—Geoffrey Arnold



# R PROJECTS

- So what is all this?
  - Avoid messy environment
  - Keep custom functions in check
  - Don't lose your work just because you want to do something else
- Info: <https://support.rstudio.com/hc/en-us/articles/200526207-Using-Projects>

# HOW DO PROJECTS WORK?

- ▶ R typically saves your environment information in a default location (typically your Documents folder)
- ▶ When you create a project it gets its own .RData file for the project in the Directory/folder you created
- ▶ This is also the default working directory for your project, so no need to put all of the folders its in
  - ▶ Simply load objects by name if they're in the project folder

# EXERCISE



- ▶ Create a “New Project”
  - ▶ Select “New Directory”
    - ▶ Select "New Project"
      - ▶ Make sure the “Create a git repository” is selected
      - ▶ Give the project any name you want
        - ▶ Click “Create Project”
          - ▶ Look at the “Git” tab

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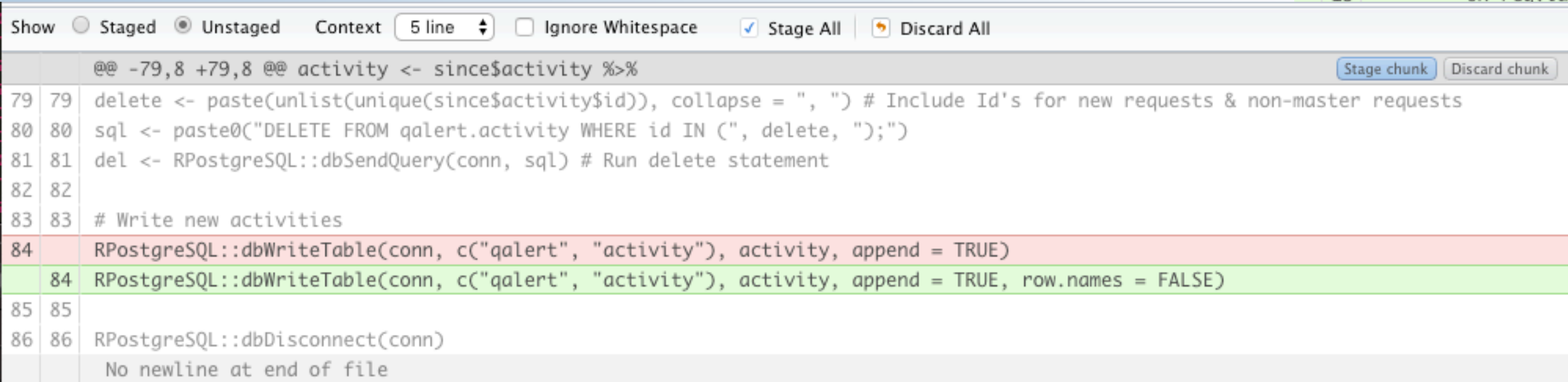
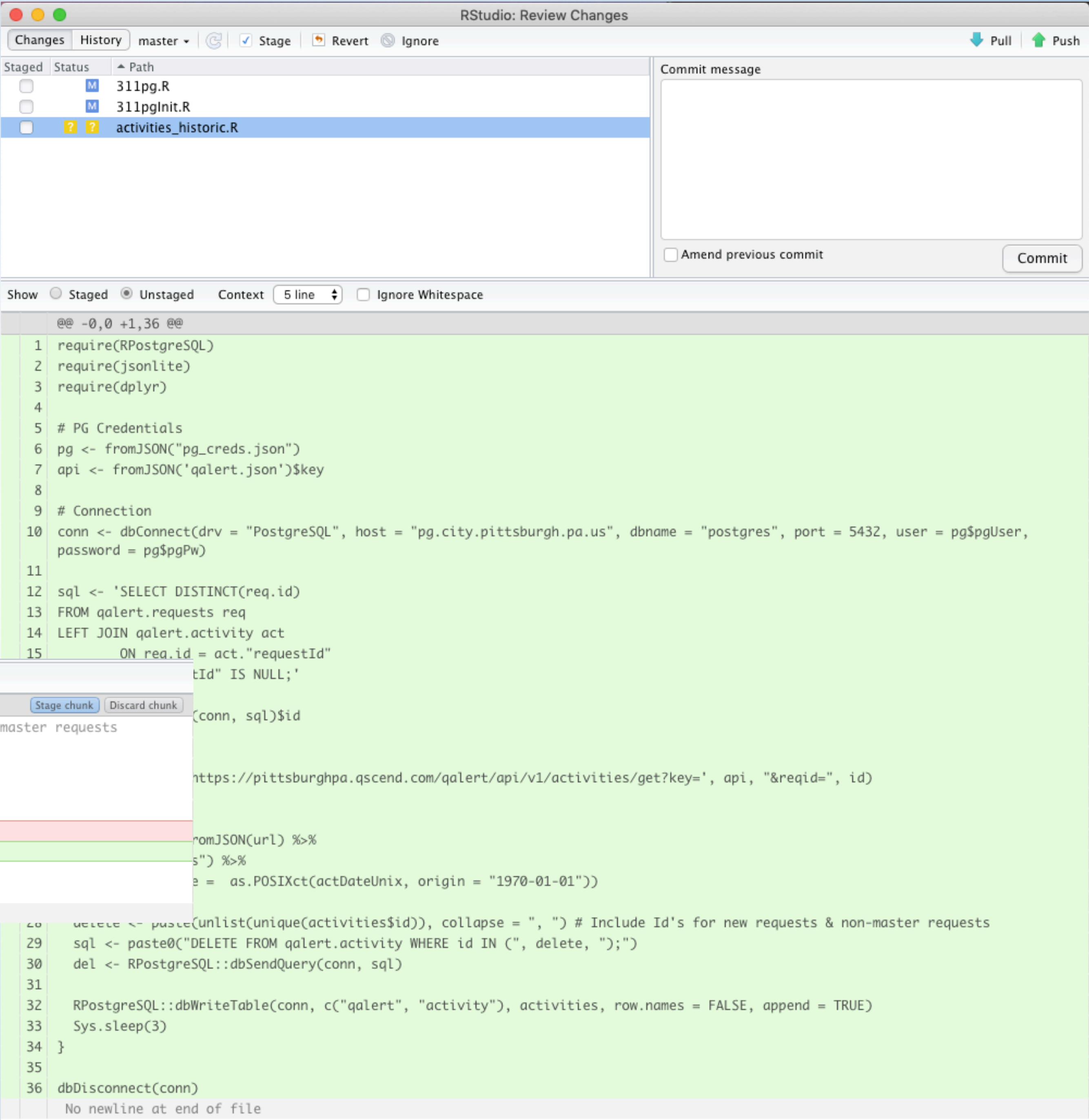
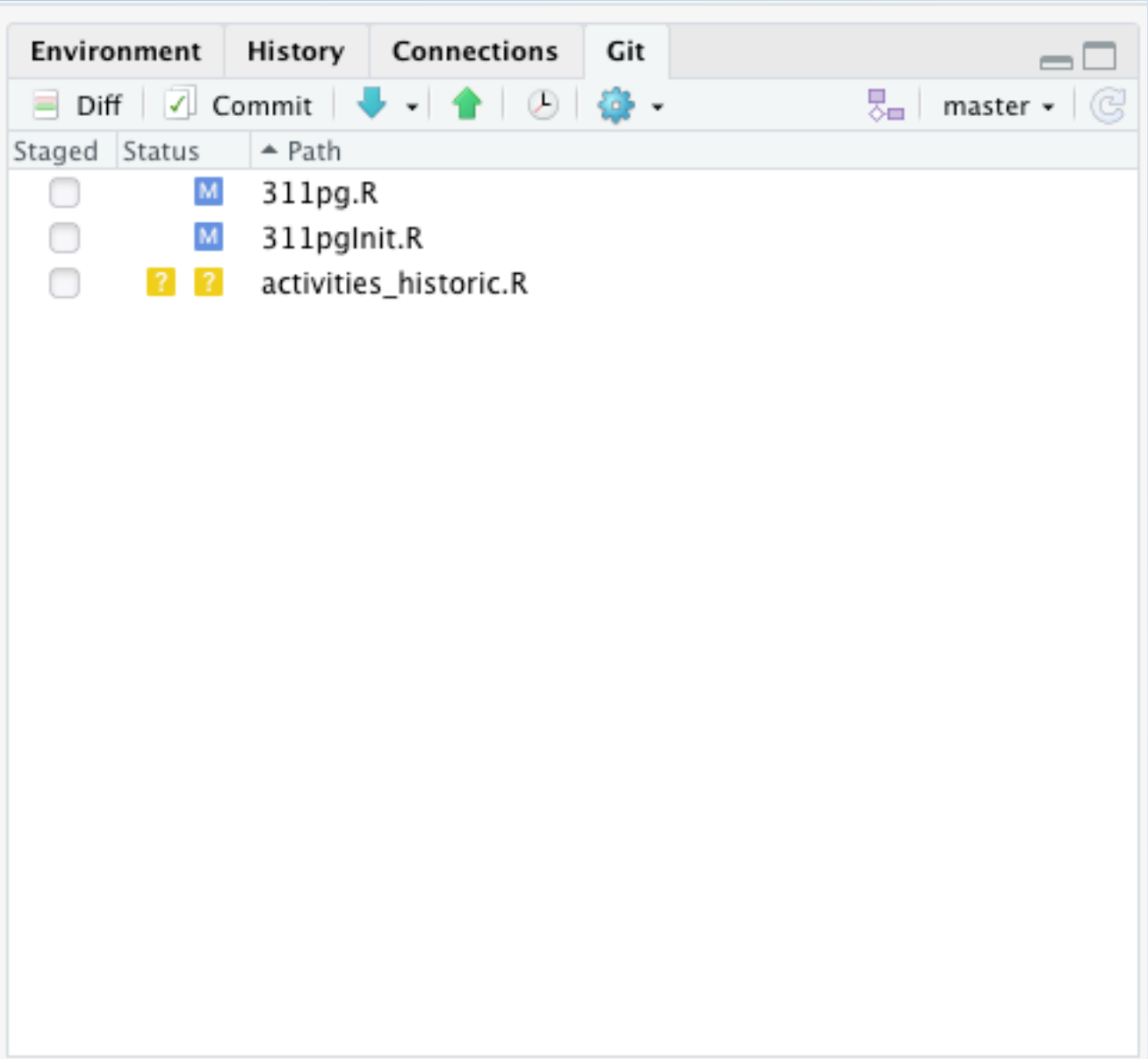


# EXERCISE



- ▶ Click “File”
  - ▶ Click “New File”
    - ▶ Select “Shiny Web App”
      - ▶ Give the application a name and click “Create”
  - ▶ Click the “Git” tab
    - ▶ What’s change?

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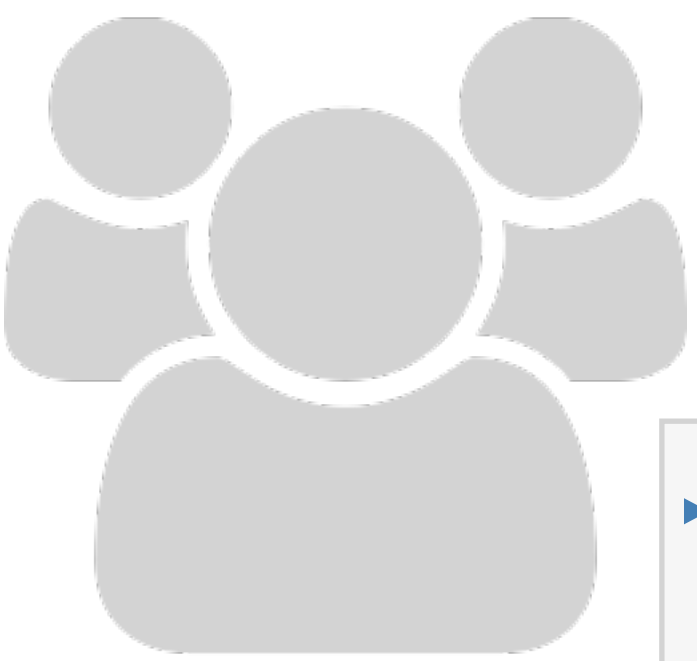


# EXERCISE



- Go to “Global Options”
  - Click “Git/SVN”
    - Ensure “Enable version control interface for Studio projects” is selected
      - Click “Create RSA Key...”
        - Click “Create”
          - Click “View public key” and copy key
- Go to <https://github.com/settings/keys>
  - Click “New SSH key”
    - Paste key in text box and give your key a name
      - Click “Add SSH Key”
  - If you have two factor authorization turned on for GitHub (people with previous GitHub accounts) you will need your Personal Access Token to login later
  - Everyone else, your GitHub login and password will be important when logging in later.

# EXERCISE



- ▶ Click the “Git” tab
  - ▶ Click “Commit”
    - ▶ Type a message into the “Commit message” box
      - ▶ Stage the files by making sure they are selected on the left
        - ▶ Click “Commit”
          - ▶ Click “Push”
            - ▶ Login to GitHub with either your password or personal access token

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# Github in the command line / terminal

# WHATS THE COMMAND LINE

- Command or terminal git commands are how git was first used.
- You don't need to know how to do these things as either the "Git" tab in RStudio or the Github desktop program provides a GUI (gooey user interface) for you.
- However, knowing the hard way to do something never hurt anybody.



# EXERCISE



- ▶ <https://learngitbranching.js.org/>
- ▶ Complete Introduction Sequences
  - ▶ Git Commits
  - ▶ Branching Git
  - ▶ Merging in Git

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