

Getting Started

HES 505 Fall 2023: Session 1

Matt Williamson



>Welcome to Space!!

Today's Plan

- Introductions
- Why (not) R?
- Course logistics and resources
- Testing out RStudio, git, and GitHub Classroom

Introductions

About Me

- What I do
- My path to this point
- Why I teach this course



What about you?

- Your preferred pronouns
- Where are you from?
- What do you like most about Boise?
- What do you miss most about “home”?
- What is your research?

Why (not) R?

Why R?

- Open Source
- Huge useR community
- Integrated analysis pipelines
- Reproducible workflows

Code

Plot

```
1 library(maps)
2 library(socviz)
3 library(tidyverse)
4 party_colors <- c("#2E74C0", "#CB454A")
5 us_states <- map_data("state")
6 election$region <- tolower(election$state)
7 us_states_elec <- left_join(us_states, election)
8 p0 <- ggplot(data = us_states_elec,
9             mapping = aes(x = long, y = lat,
10                          group = group,
11                          fill = party))
12 p1 <- p0 + geom_polygon(color = "gray90",
13                       size = 0.1) +
14   coord_map(projection = "albers",
15            lat0 = 39, lat1 = 45)
16 p2 <- p1 + scale_fill_manual(values = party_colors)
17   labs(title = "Election Results 2016",
18        fill = NULL)
```


Why not R?

```
1 ## ---
2 ## Error: could not find function "performance"
3 ## ---
4 ## [1] "Error in if (str_count(string = f[[j]]),
5 ## pattern = "\\S+") == 1)
6 ## { : \n argument is of length zero"
7 ## ---
8 ## Error in eval(expr, envir, enclos) : object 'x' not found
9 ## ---
10 ## Error in file(file, "rt") : cannot open the connection
11 ## ---
```

- Coding can be hard...
- Memory challenges
- Speed
- Decision fatigue

Getting Help

- Google it!!
 - Use the exact error message
 - Include the package name
 - include “R” in the search
- Stack Overflow
 - Reproducible examples
- Package “issue” pages
- r_spatial slack channel
- Common errors

Ask Me

Class Details

Logistics

- Meet on Mondays and Wednesdays
- ~55 min lecture, 20 min practice
- 4 major sections
- Readings

Course Webpage

<https://isdrfall23.classes.spaseslab.com/>

- Syllabus
- Schedule
- Lectures
- Assignments
- Resources

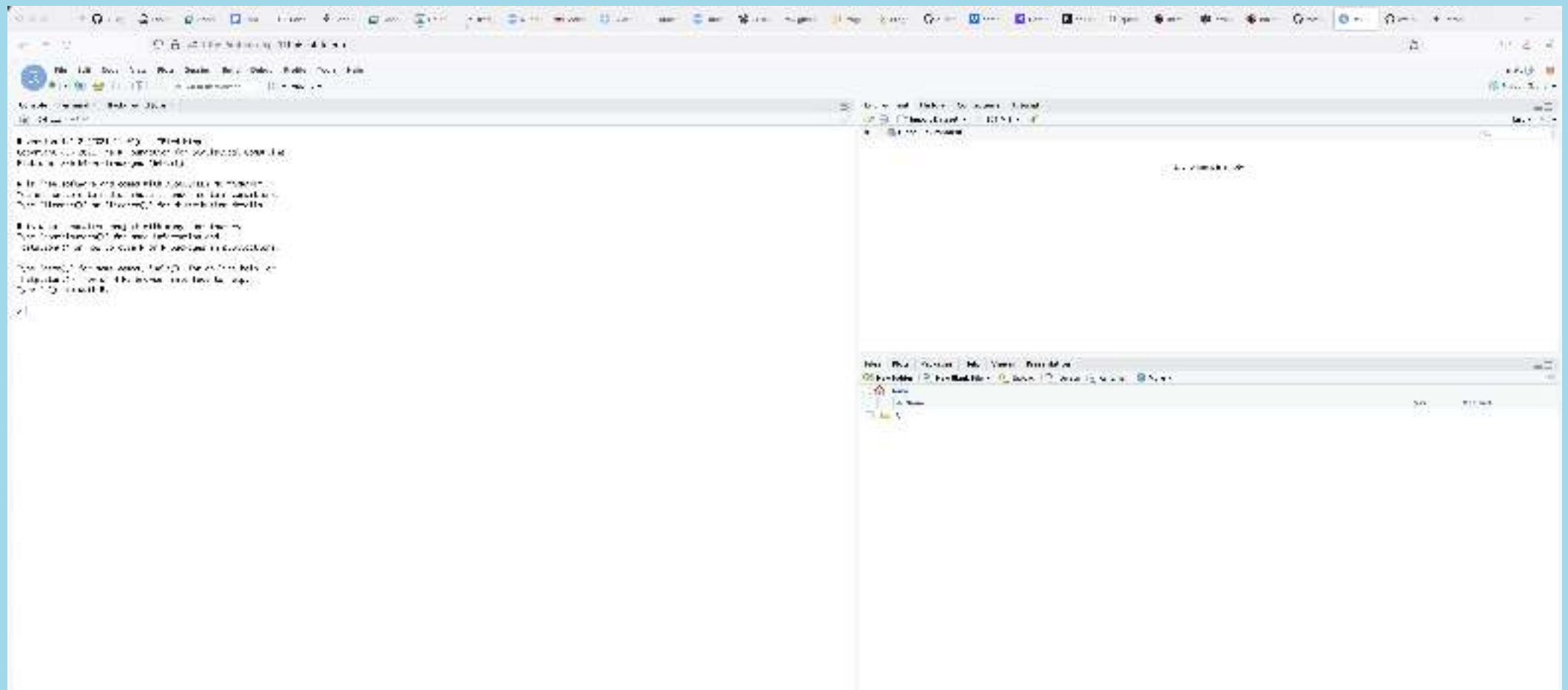
Assignments

Check out the syllabus for more on grading!

- **Self-reflections (2x)**
 - Your goals for the course
 - Evaluation criteria
- **Coding exercises (10x)**
 - Problem solving
 - Reproducible workflows
 - Muscle memory
- **Code Revisions (3x)**
 - Digging deeper
 - Common issues
 - More extensive feedback
- **Final project (1st draft, final draft)**
 - Practice a full analysis workflow
 - Integrate analysis & visuals to tell a story

Getting started

Orientation to RStudio and our RStudio server



Git and Github classroom

Introduce yourself to Git

1. Lots of ways, but one easy way is:

```
1 library(usethis) #you may need to install this using install.packages('usethis')
2 use_git_config(user.name = "Jane Doe", user.email = "jane@example.org") #you
```

2. Generate a PAT token if you don't have one (make sure you save it somewhere)

```
1 usethis::create_github_token()
```

Introduce yourself to Git (cont'd)

3. Store your credentials for use (times out after 1 hr)

```
1 gitcreds::gitcreds_set()
```

4. Verify

```
1 gitcreds::gitcreds_get()
```

Joining the assignment and cloning the repo

1. Click this [link](#)
2. Bring the project into RStudio
 - Go to File>New Project and choose the “Version Control” option
 - Select “Git” (Not Subversion)
 - Paste the link from the “Clone Repository” button into the “Repository URL” space

The git workflow

- Make sure to **pull** everytime you start working on a project
- Make some changes to code
- Save those changes
- Commit your changes
- Push your work to the remote!

Wrapup

Checking in

1. What are some advantages and disadvantages of using **R** for spatial analysis
2. What can I clarify about the course?
3. How do you feel about git and github classroom? How can I make that easier for you?

A ORBIS TERRARUM
MERIDIANO TABB,

DELINEATIO SINGULARI
RUDOLPHI

RATIONE ACCOMMOD
ASTRONOMICARUM

End

