Getting Started

HES 505 Fall 2024: Session 1

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Welcome to Space!!

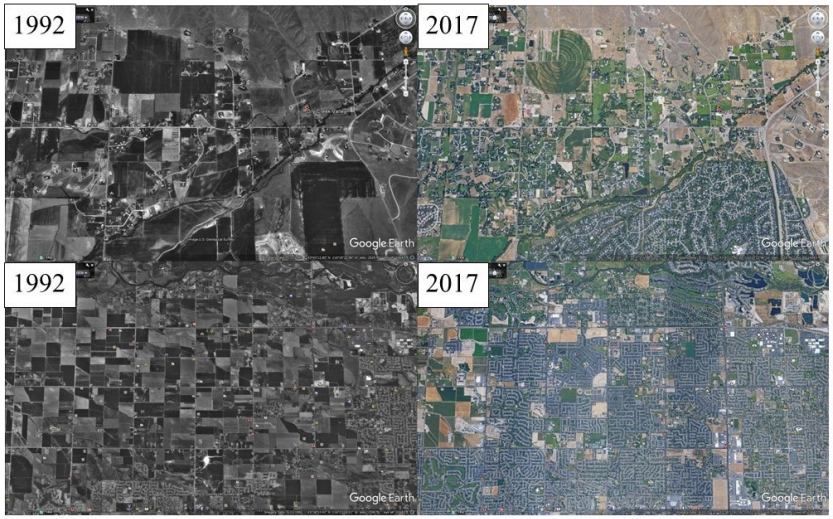
Today's Plan

- 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



Top Panel - Farmland conversion to high-density housing in Dry Creek, in the foothills east of Boise.
Bottom Panel – Suburban sprawl in Meridian, Idaho, in the Treasure Valley, west of Boise.

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, ele
 8 p0 <- ggplot(data = us_states_elec,
 9               mapping = aes(x = long, y =
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 = par
17     labs(title = "Election Results 2016",
18          fill = NULL)
```

Why not R?

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

- 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://isdrfall24.classes.spaseslab.com/

- Syllabus
- Schedule
- Lectures
- Assignments
- Resources

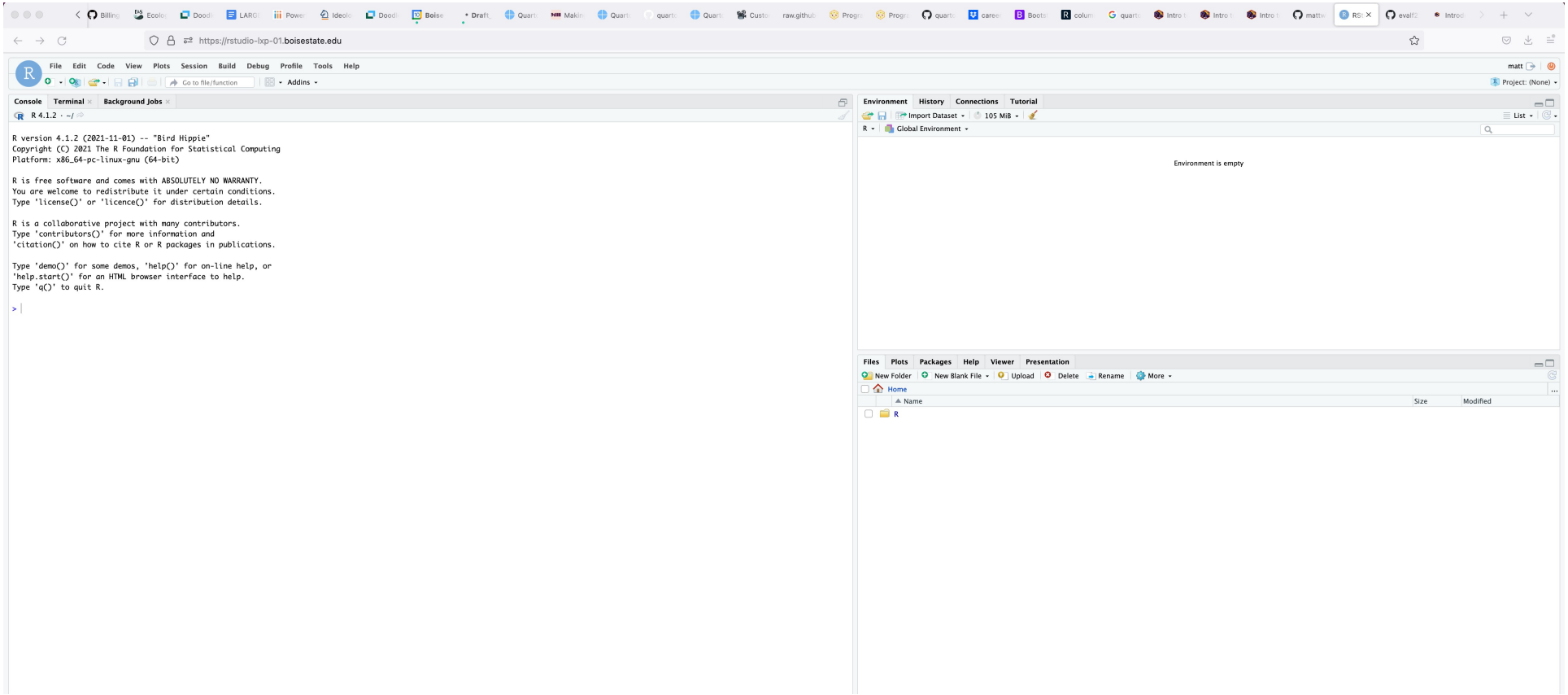
Assignments

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.packag
2 use_git_config(user.name = "Jane Doe", user.email = "jane@example.c
```

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** every time 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?

End