Getting Organised with R Projects

From Lost Scripts to Reproducible Projects

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What is an R Project?

- A **self-contained** folder that stores scripts, data, and project settings

- Identified by a `.Rproj` file

- Automatically sets the working directory to the project location

- Great for keeping your work organized and portable

Why use R Projects?

- Reproducibility
  - Same environment and structure every time
- No more `setwd()` or manual paths
- Easier collaboration
  - Just zip and send the folder
- Keeps everything for your analysis in one place

Definition: What is a working directory?

- It's the folder R is currently "looking in" for files

- Use it to read or write data

- You can check it with: `getwd()`

- And change it manually with: `setwd("your/path")`

Working without a Project

- You have to manually tell R where to look:

- i.e., `setwd("C:/Users/Name/Documents/project")`

Working without a Project

- Problems:

  - Only works on your machine

  - Breaks if you rename or move folders

  - Makes code hard to share or reproduce

Working without a Project

- Common pitfalls

  - Forgetting to set working directory

  - Saving files in "random" places

  - Losing your files

R demo: Manual working directories

The "Windows" struggle

- R prefers /, Windows uses \

- \ in R means something else (e.g. , escape)

- Either

  - Change all \ to /

  - Add and extra backslash \\

- Not ideal when working in a deep folder system

The "Windows" struggle

```
1  setwd("C:/Users/You/Documents") # works
```

The "Windows" struggle

```
1  setwd("C:/Users/You/Documents") # works
2
3  setwd("C:\\Users\\You\\Documents") # also works, but messy
```

The "Windows" struggle

```
1  setwd("C:/Users/You/Documents") # works
2
3  setwd("C:\\Users\\You\\Documents") # also works, but messy
4
5  setwd("C:\Users\You\Documents")  # will cause errors
```

- Easy to cause file path errors accidentally

- Projects help avoid all of this

Any questions so far?

HARUG R Stats Bootcamp by Ed Harris

Creating a Project

- Live demo

- Creating and opening

What just got easier?

- No more `setwd()`

- Scripts and files stay connected

- Can use simple, short file paths: `write_csv(iris, "iris.csv")`

  - *i.e.,* a **relative path** — works no matter who opens the project

Any questions so far?

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Sharing your project

- Keep everything in one folder:

  - Scripts

  - Data

  - Outputs

- Zip it → send it → open `.Rproj`

- It *just works*

- Code runs without any edits to file paths

Live demo - Sharing your project

Save R workspace?

- Seems handy… but:
  - Hidden variables
  - Mismatched objects
  - Surprise bugs

- **Better:**
  - Don't save workspace - *can be some exceptions…*
  - Recreate from script
  - Keeps code clean, portable, and reproducible

Live demo - general and project settings

Session Round up!

- Use projects for all analyses

- Keep scripts and data together

- Avoid `setwd()` and use relative paths

- Don't save your workspace

- Easier collaboration

Questions?

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Resources:

- RStudio Project Docs

- R4DS: Projects

- Tips for a Smooth R (Studio) Workflow and Reproducible R Code