Using the Shell

Objectives

- Understand the what and why of the shell
- Use the shell to navigate your computer's file system
- Use RStudio projects to simplify file system navigation
- Know your options for finding help

Lesson outline

- Review of last week
  - What happened as you were trying to re-organize projects or R code? Victories? Stumbling blocks?
- Slides: Intro to the shell
  - What is the shell?
  - What does the shell let us do?
  - Why would we want to learn how to use the shell?
- Breakout rooms: Shell installation
  - Instructor notes include links to git installation for both Mac and Windows.
  - Split into 2 breakout rooms to install on different OS's.
- Break to all download shell-lesson-data
  - Link
  - Put it on your Desktop
  - Unzip using point-and-click
- Live coding: Setup RStudio
  - Open RStudio
  - Tour panes: files and terminal
  - Set up terminal pane to use bash
- Live coding: Navigating filesystems in files pane
  - Use file pane to navigate to shell-lesson-data
- Live coding: Navigate to shell-lesson-data in Terminal
  - Identify the prompt and note that it is different in zsh (%)
  - `pwd`
  - `cd`
  - `ls`
    - Use `ls` flags to explain anatomy of a shell command
    - Show `man ls` to show flag options for the `ls` command
- Live coding: Synchronizing file panes
  - Show "Go to current directory" to bring Terminal to files pane
  - Show "New terminal here" to create a terminal in files pane

    - Show that Rstudio's working directory is not automatically wherever either Terminal or the file pane is
- Live coding: using Rprojects to simplify filesystems
    - Create an R project
    - Show that, upon opening, Terminal, getwd(), and file pane are all on the same page
- Live coding: `cp` and `move`
    - Copy `shell_lesson_data` to the Rproject.
    - Tell them we need `cp`, then use `cp --help` to get the options
    - Repeat using `ls` to explore contents of `shell_lesson_data` and mirror files pane
- Live coding/discussion: options for finding help
    - `--help` flag
    - `man` pages
    - Manual pages: `?` in R, package websites
    - StackOverflow
    - ChatGPT
- Homework for next session
    - Read https://peerj.com/preprints/3159/ git (Version control prep)
    - Create a diagram of your file system and note your most frequently used directories

Installation & materials

1. Slides
2. macOS git installation
3. Windows git installation (detailed step-by-step here)
4. Software Carpentry Unix Shell episode #1
5. Software Carpentry Unix Shell episode #2
6. Software Carpentry Unix Shell episode #3 (time permitting)