R for Data Science

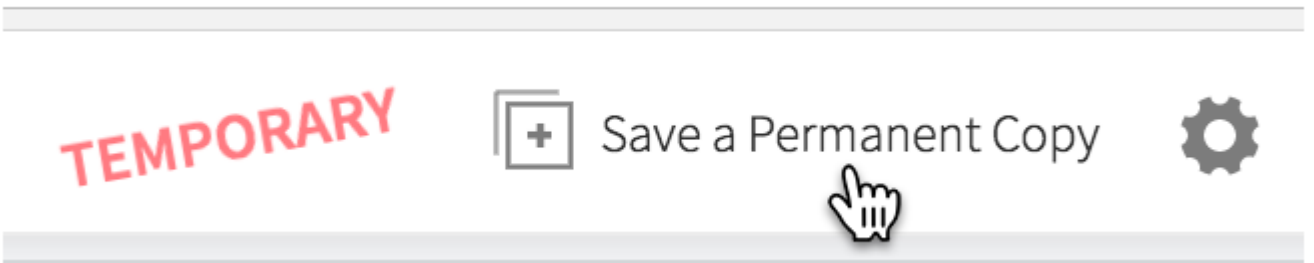
R for Data Science workshop

2019-05-01 (updated: 2019-07-11)

R for Data Science

Everyone please do the following now if you haven't already:

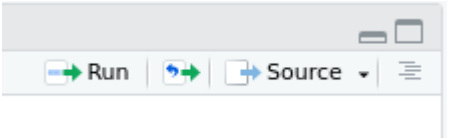
1. Sign up for a free account at rstudio.cloud
2. Visit https://tinyurl/????? to join our shared workspace
3. Open the r-for-data-science project
4. Save a Permanent Copy of the project



Your turn

Open the `r-for-data-science` project and open the following file:

eat-cake-first.R



Source the file by clicking the "Source" button at the top right of the editor pane.

> Note: In RStudio, "Run" executes the current line or selection, while "Source" executes the contents of the whole file.

Try changing one or both of the countries to any of the following:

```
Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Estonia,
Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel,
Italy, Luxembourg, Netherlands, Norway, Poland, Slovakia, Slovenia,
Spain, Sweden, Switzerland, United Kingdom, United States
```

Welcome

Email: davidbody@bigcreek.com

Twitter: @david_body

Welcome

Workshop goals

- Introduce R, RStudio, and the Tidyverse
- Learn enough to begin using R for real work
- Overview of what is available
- Have fun

Welcome

Introductions

- Your name
- Why are you here?
- One other thing about you

Welcome

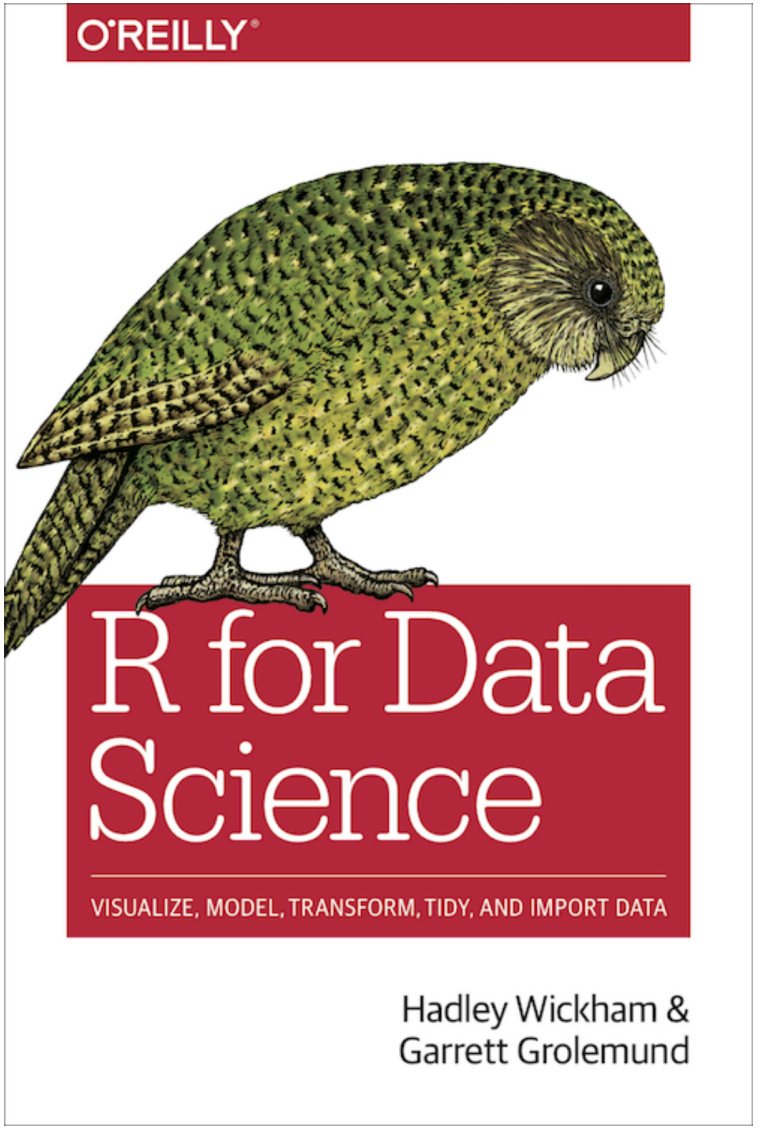
Outline

- Introduction to RStudio Cloud
- Visualizing data with ggplot2
- Data wrangling with dplyr and tidyr
- [lunch?]
- Exploratory data analysis
- R programming
- R Markdown
- Shiny

Logistics

- Breaks
- Lunch
- Rest rooms

https://r4ds.had.co.nz/



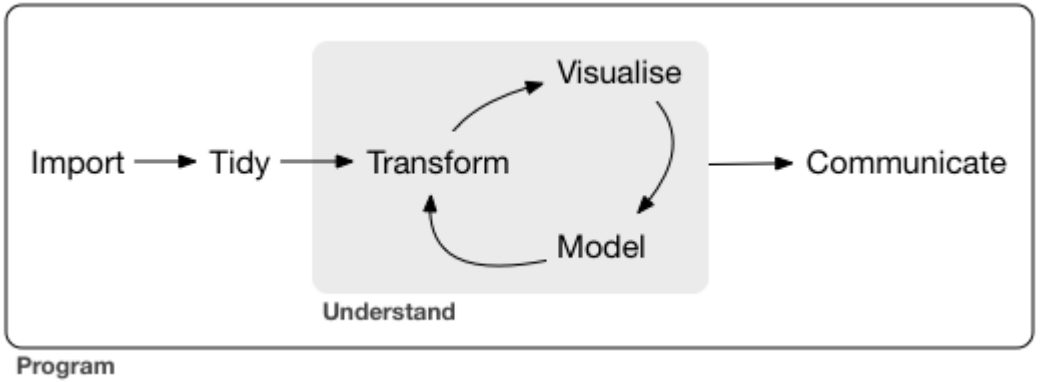


Image source: R for Data Science by Hadley Wickham & Garrett Grolemund.

R, RStudio, & RStudio Cloud

R is a language

RStudio is an IDE (also a company)

RStudio Cloud is RStudio (the IDE) hosted by RStudio (the company)

What is R?

From the official R website:

> R is a **free software environment** for **statistical computing** and **graphics**. It compiles and runs on a wide variety of **UNIX** platforms, **Windows** and **MacOS**.

- general purpose programming language
- large standard library with strong support for
  - data wrangling
  - data analysis & statistical computations
  - plotting and data visualization
- large number of contributed libraries
- written in R, C++, and Fortran
- conceived in 1992 as an open source replacement for the S language. Initial release in 1995, version 1.0 in 2000, version 3.5 in 2018

RStudio IDE

- Free and open source integerated development environment for R
- RStudio Desktop (Windows, MacOS, Linux)
- RStudio Server (via browser)
- RStudio Cloud (hosted by RStudio, the company)

RStudio (the company)

- Founded by J.J. Allaire (creator of Cold Fusion)
- Chief Scientist is Hadley Wickham
- RStudio has contributed to many packages, including
    - Tidyverse - R packages for data science
    - Shiny - web framework for R
    - RMarkdown - combine R code with markdown
    - knitr - generate dynamic reports
    - packrat - dependency management
    - devtools - package development tools
- rstudio::conf January 27-30, 2020, San Francisco

  Session videos for past conferences are available at rstudio.com

One more thing

In RStudio Cloud, please go to Tools | Global Options… | General | Workspace and *uncheck* "Restore .RData into workspace at startup" and change "Save workspace to .RData on exit" to *Never*.

Your turn

RStudio Cloud

RMarkdown notebook

your-turn/00-introduction.Rmd

05:00