Introduction to R Workshop

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Slides adapted from David Keyes (@dgkeyes), inspired by Danielle Navarro (@djnavarro) and Paul Campbell (@paulcampbell91)

Welcome to our workshop!

Agenda

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- Intro to R & RStudio (Yolanda)

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- Intro to R Markdown (Grace)

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- Intro to R Markdown (Grace)
- Data Wrangling (Joscelin)
- Data Visualization (Grace)

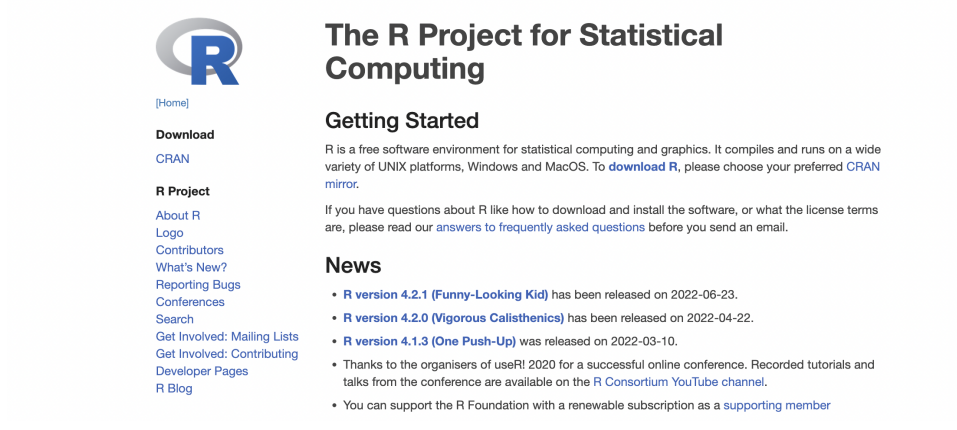
Stuck? Ask your partner

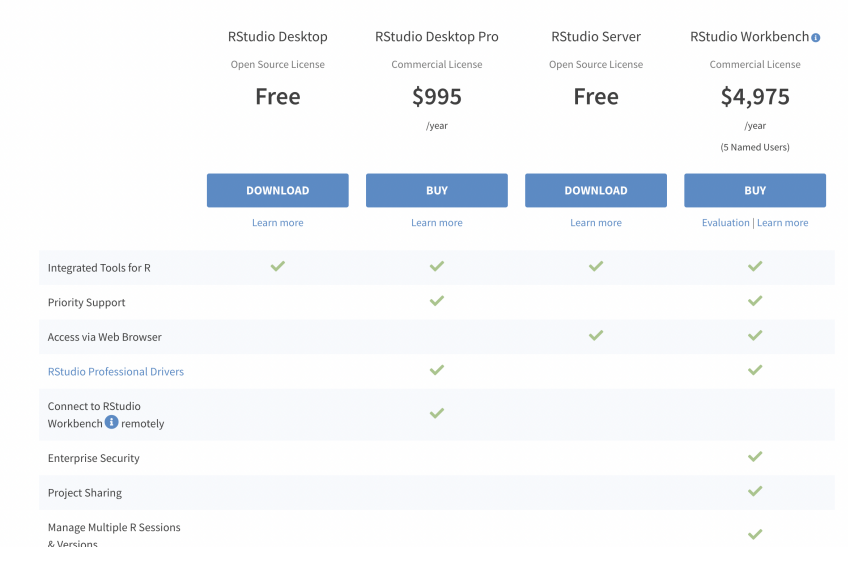
Still stuck? Raise your hand

Intro to R and Importing Datasets

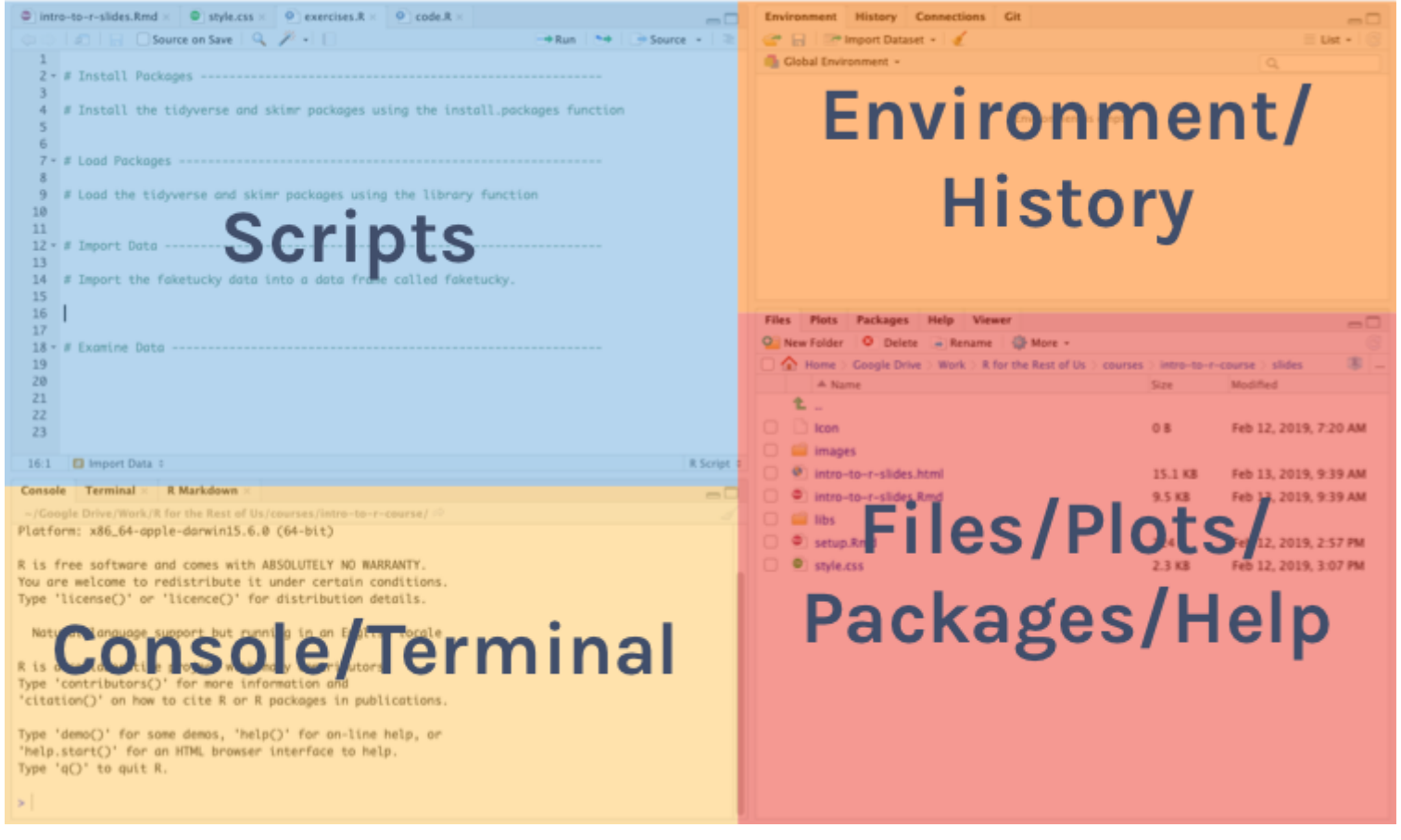
Download and Install R

- Visit: http://www.Rproject.org/, choose the CRAN that is the closest with you physically.
- Visit: https://www.rstudio.com/products/rstudio/download/



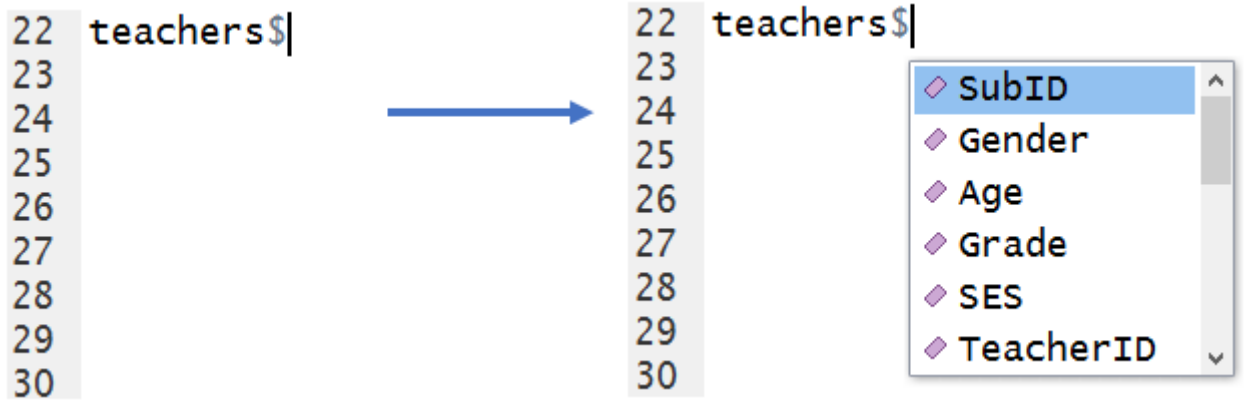


Tour of RStudio



Why do we recommend using RStudio

1) RStudio makes **script writing** easier.



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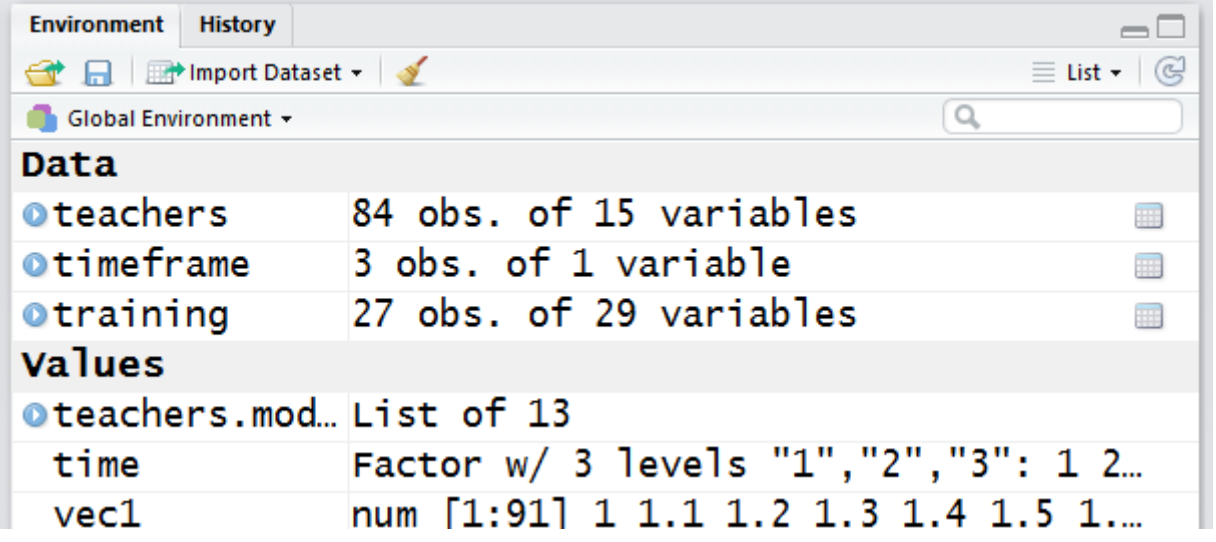
2) RStudio makes it convenient to **view your environment** and interact with stored objects.



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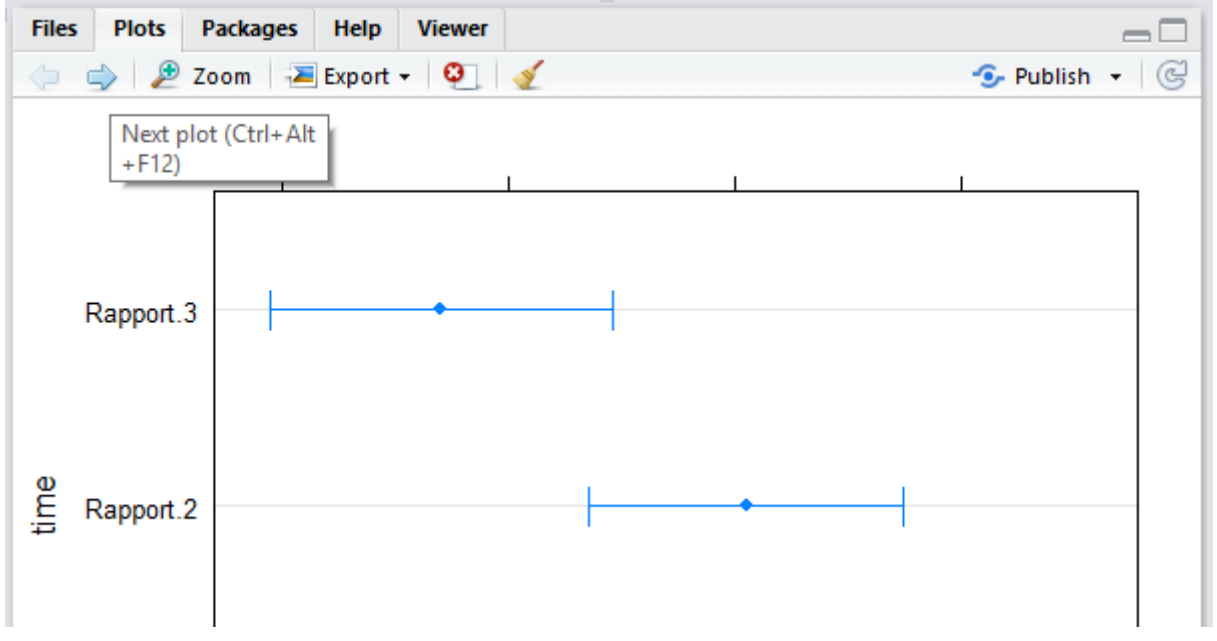
3) RStudio makes **graphics** accessible.



Two File Types in R

There are **two main file types** that you'll work with:

R scripts (.R)

Text is assumed to be executable R code unless you comment it (more on this soon)

```
# This is a comment

data <- read_csv("data.csv")
```

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RMarkdown files (.Rmd)

Text is assumed to be text unless you put it in a code chunk (more on this soon)

R Scripts

Create new script file: File -> New File -> R Script

R Start-up Kit: 4 Essential Skills

- Case Sensitivity
- Run Codes
- Write Comments
- Handling packages

Skill 1 - Case Sensitivity

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Options

snake_case

camelCase

periods.in.names

Options	Examples
snake_case	student_data
camelCase	studentData
periods.in.names	student.data

Art by @allison_horst

Skill 2 - How to Run Code

Run the code:

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If you have Windows: control + enter

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Run the code:

If you have Windows: control + enter

If you have IOS: command + enter

Skill 3 - Make Comments

Comments help others understand your codes & help yourself keep track of your coding.

```
# Show the first 5 rows of my data
head(data, n = 5)
```

Skill 4.1 - Install Packages

To install packages, use the "install.packages" command. See following syntax:

```
install.packages("tidyverse")
install.packages("skimr")
```

The package name must be in quotation marks when you install them.

Skill 4.2 - Load Packages

To load packages, use the "library" command. See following syntax:

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Packages should be installed **once per computer**.

Import Datasets

csv

```
chds6162_data <- read_csv(here("data", "chds6162_data.csv"))

chds6162_data <- read_csv("data/chds6162_data.csv")
```

Excel

```
library(readxl)

chds6162_data <- read_excel("data/chds6162_data.xls")
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```

SPSS

```
library(haven)
chds6162_data <- read_sav("data/chds6162_data.sav")
```

Set Working Directories

If the data file is in the working directory, you only need to specify its name.

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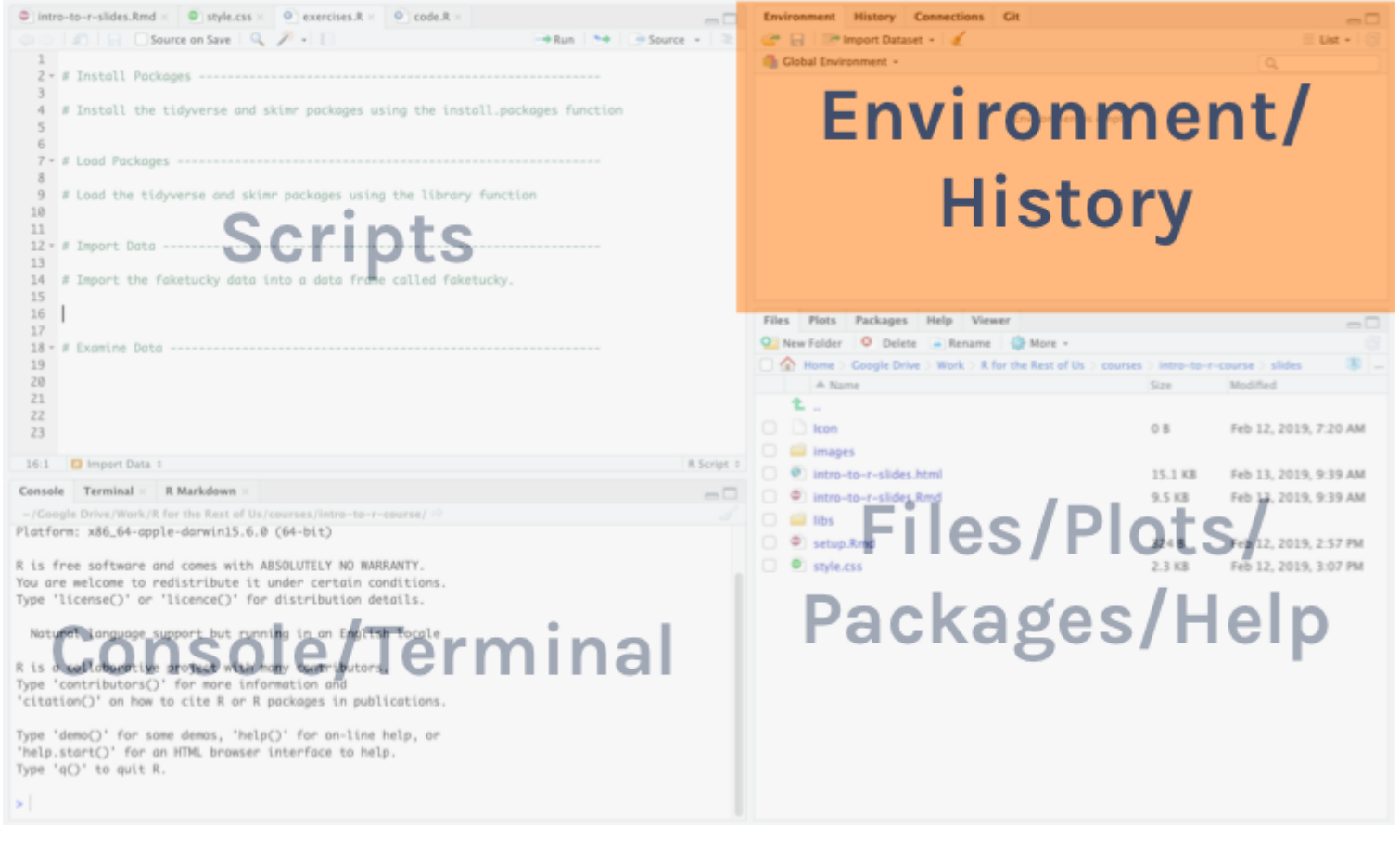
Using an RStudio project sets your working directory to the folder where your project lives so you only need to specify the location relative to that

Where Does Our Dataset Live?

Data we have imported is available in the environment/history pane.



?function

Use the ? to get help about anything you're confused about

```
?read_csv
```