

A Gentle Introduction to R

Jonathan Whiteley


2023-07-25

Pop Quiz

We will review these *at the end*, so you can see how much you have learned.

- What does 'CRAN' stand for?
- Why is it called 'R'?
- How can you use R *interactively*?
- How do you find out what a function does & how to use it?
- How do you store values to re-use later?
- True or False: Warnings can be ignored, but an Error means I made a mistake.
- True or False: Error messages will tell me how to fix the problem.

Learning Objectives

- Get familiar with the  *interface*
- Enter *commands*
 - ▶ input & output: using R interactively
 - ▶ use some common *functions*
- Understand *Errors & Warnings*
- Use technical *terms* for R concepts
- How to get Help

Why is it called ?

- R started as an *open-source* implementation of the S statistical computing language (S-PLUS)
 - ▶ S was created at Bell Laboratories in 1976
 - ▶ R was based on the S syntax (mostly v3), but works very differently “under the hood”.
- R was created by **R**oss Ihaka and **R**obert Gentleman at the University of Auckland in the early 1990s.

- R has a slightly different interface for each **O**perating **S**ystem (OS)
- GUI = **G**raphical **U**ser **I**nterface
- In every case, you interact with R primarily using a *command line*
 - ▶ aka “Question-and-Answer Model”
 - ▶ You ask R to do something (a *command*),
and R tells you the answer (*result*).
 - ▶ Instructions are given to R using the *R language*.

Slide with R Output

```
summary(cars)
```

```
##           speed           dist
##  Min.      : 4.0    Min.      :  2.00
##  1st Qu.:12.0    1st Qu.: 26.00
##  Median :15.0    Median : 36.00
##  Mean   :15.4    Mean   : 42.98
##  3rd Qu.:19.0    3rd Qu.: 56.00
##  Max.   :25.0    Max.   :120.00
```

```
1 + 2
```

```
## [1] 3
```

Slide with Plot

```
plot(pressure)
```

