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Introduction to R

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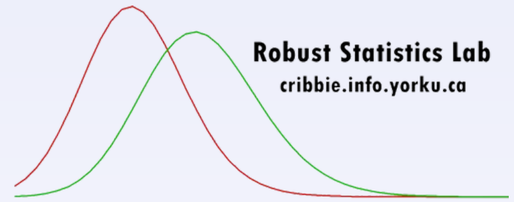
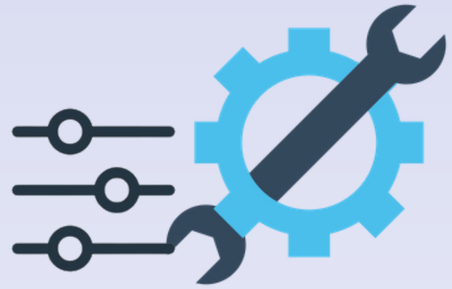
- Shiny package in R
- Equivalence Testing
- Statistical Suppression

@na_omit



Workshop Setup

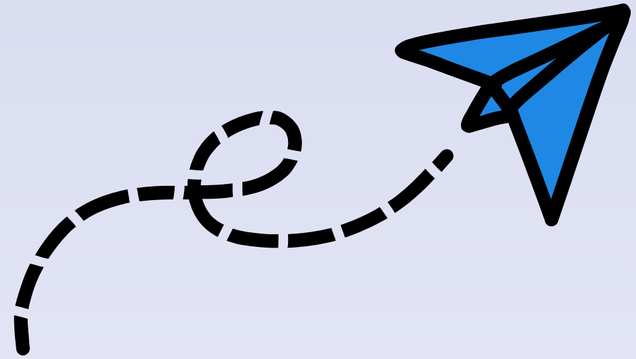


Materials are openly available at osf.io/6g4js/

You can follow along with your computer "live" using scripts on OSF

Raise a hand to ask a question

Workshop Goals



- Know your way around R, RStudio, and the R environment and using external packages
- Perform basic data science and statistical analyses using syntax
- Create shareable, reproducible code
- Be able to look for what you need independently

Sections & Topics

1 Intro

- What is R, RStudio, and R environment?

2 The Basics

- RStudio layout
- Simple operations
- Functions, objects, packages, arguments

3 Data

- Importing datasets
- Descriptive statistics
- Data wrangling

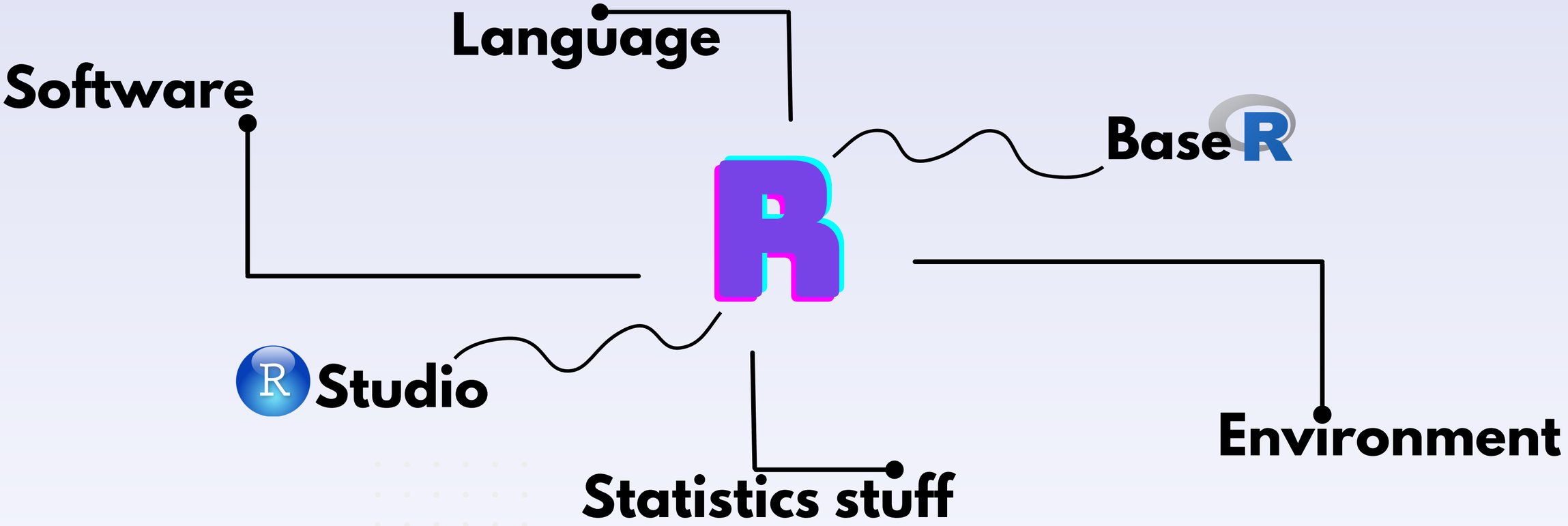
4 Basic Statistical Analyses

- t tests
- ANOVA
- Regression

5 Graphics

- ggplot2

When people say R, what do they mean?



What is R?

R is a *language* and *environment* for statistical computing and graphics. R is free and it is open-source.

R uses syntax, which means that, to “speak” the language, you’ll need to program/code (but, don't fret!).

R is an integrated suite of software facilities for data manipulation, calculation, and graphical display.

What is RStudio?

RStudio is an Integrated Development Environment (IDE) for R. Think of it as an application that combines all of the R environment features and tools into a nice, neat, user-friendly "control panel."

What else can RStudio can do?

Make ("knit") documents: PDF, HTML, Word, Excel, Markdown, LaTex etc.

Create interactive graphics, plots, websites, etc.

Design applications and graphical user interface for data display, analyses, surveys, etc.

What is meant by environment?

The term **“environment”** is intended to characterize it as a fully planned and coherent system, rather than an incremental mass of very specific and inflexible tools, as is frequently the case with other data analysis software.

Many users think of R as a statistics system. We prefer to think of it as an environment within which statistical techniques are implemented.

R can be extended (easily) via **packages**. There are about eight packages supplied with the R distribution and many more are available through the CRAN.

Remember...

Error messages are an integral part of coding, welcome them with love.

Google (and Stack Overflow) is your best friend

Coding is like writing, you can phrase the same idea a million ways, and they can all be valid!

The most important thing is that your code does what you want it to do...doesn't matter how you got there!

Other Resources

(click the links)

Resources running doc

Stack overflow

R 4 Data Science

Best packages for tables

ggplot2

ouR coding club!

Git and GitHub with R

QMWS workshops

intro2R.com

learning statistics with R

Thank You!

And, stay in touch!

 @UdiAlter

 @na_omit

OuR coding club!