R for Epidemiology

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2020-03-03

Contents

Welcome

Welcome to R for Epidemiology!

I'm going to start the book by writing down some basic goals that underlie the construction and content of this book. I'm writing this for you, the reader, but also to hold myself accountable as I write. So, feel free to read if you are interested or skip ahead if you aren't.

The goals of this book are:

1. Make this writing as accessible and practically useful as possible without stripping out all of the complexity that makes doing epidemiology in real life a challenge. In other words, I'm going to try to give you all the tools you need to *do* epidemiology in "real world" (as opposed to ideal) conditions without providing a whole bunch of extraneous (often theoretical) stuff that detracts from *doing*. Having said that, I will strive to add links to the other (often theoretical) stuff for readers who are interested.

2. Teach you to accomplish tasks, rather than teach you to use functions. In many R texts, the focus in on learning all the things a function, or set of related functions, *can* do. It's then up to you, the reader, to sift through all of these capabilities and decided which, if any, of the things that *can* be done will accomplish the tasks that you are actually trying to accomplish. Instead, I will strive to start with the end in mind. What is the task we are actually trying to accomplish? What are some functions/methods I could use to accomplish that task? What are the strengths and limitations of each?

3. Where possible, we will start each concept with the end result and then deconstruct how we arrived at that result. I find that it is easier for me to understand new concepts when learning them as a component of a final product.

4. Where possible, we will learn concepts with data instead of (or alongside) mathematical formulas and text descriptions. I find that it is easier for me to understand new concepts by seeing them in action.

Part I

Getting Started

Chapter 1

Course overview

Blah, blah, blah. Here is what the course is about.

Chapter 2

Installing R and RStudio

Here's how to do it.

Chapter 3

What is R?

Here's what it is...

Chapter 4

Speaking R's language

Here's how to speak it...

Chapter 5

Navigating the RStudio interface

Here's how to navigate it...

Chapter 6

Let's get programming

Let's do it!

Chapter 7

Asking questions

Use a repex, please!

Part II

Descriptive Analysis

Chapter 8

Descriptive analysis

Bring over PowerPoint and all the Rmd files from last year's course.

Part III

Appendix

Appendix A: Vocabulary words

- Model
- Distribution
- Sample
- Study design
- Primary and secondary data
- Observe-sort of implies that we're counting