Problem Set 0 – Introduction to R

Introduction

This problem set will be different than the other problem sets in that it focuses on learning the basics of the R programming language and includes no economics or real-world examples. The problem set is designed so that you will be ready for my lectures, the TA sections, and to prepare you for the remaining problem sets. You do not have to turn in this problem set, it is only for your benefit to get you ready for class and future problem sets. While you will not turn in this problem set, you should complete the problem set before your first TA section. After you complete this problem set you should:

- Have R and Rstudio installed.
- Have a basic understanding of how to use R.
- Know how to install and load R libraries.
- Know how to open and run R scripts in Rstudio.
- Have reviewed expectations, variances

You will need the following for this problem set:

- Installing **R** Handout (.pdf);
- The R script "P0.R"
- Review Lecture Slides: Expected Value and Variance (.pdf)
- Handout: Rules for Expected Value and Variance (.pdf)

Part 1. Install R and Rstudio on your computer.

1: Read Installing R Handout (.pdf).

2: Install R: Visit https://cloud.r-project.org/ and download R (note different links on this site for Window, Mac, and Linux).

3: Install Rstudio
Visit https://www.rstudio.com/products/rstudio/download/#download and download the free version of Rstudio (note different links on this site for Window, Mac, and Linux). Click on the links under "installers" not the Zip/Tarballs or Source Code links.

Part 2. Install ggplot2 Library

1 Install: Install the R Library "ggplot2". To do so, run `install.packages("ggplot2",dep=TRUE)` and then run `library("ggplot2")`. Note you only need to install once, but need to run the library command any time you want to use ggplot2 in a new R session (such as if you restart Rstudio or your computer).

2 Help command: Examine the R documentation for `ggplot` by running the command `help("ggplot")`.

Part 3. Running an R Script in R Studio

1: If you have not already done so, read the Review Lecture Slides: Expected Value and Variance (.pdf) and Handout: Rules for Expected Value and Variance (.pdf).

2 Run R-Script: Open ""P0.R"" in Rstudio. To do this, open Rstudio and select "File" from the top menu and select "Open File". Then find the file you downloaded and select it. Once open, run this file by clicking the "Source" button above your open R script. This should run the code. You should make sure that you understand the code and the output.

Part 4. Additional Material on R

If you are new to **R**, and especially if you are new to coding, you should work through Project 1 and Project 2 of Hands-On Programming with R, by Garrett Grolemund.