Data Science Beginner Lecture Series Outline

What is R?

* Background on program
* Major purposes
* R Versions
* Downloading R
  + Windows
  + Mac video
  + Linux video
* Download RStudio
* Base R

Working in RStudio

* 4 windows on default RStudio
* Changing Global Options
* Importing datasets
* Ending a command
* Autosuggest in Rstudio

R Housekeeping

* Getting Working Directory
* Setting working directory
* Save Files
* Listing files
* Listing environment
* Customizing R

R Basics

* Entering commands
* Setting Variables
* Printing variables
* Deleting Variables
* Getting help in RStudio
* Writing a good post/email for help
* Getting help online
* R Mailing List
* Packages (RnNut 39)
  + Intro
  + Currently Loaded Packages (RnNut 40)
  + Included Packages (RnNut 41)
  + Installing Packages
  + Loading Packages
* Shortcut keys
* Built-in Data sets

Datatypes

* Logical
* Character
* Double
* Integer
* Is.x, As.x functions

Other Object Classes (R in a Nutshell 28)

* Character
* Numeric
* Function
* Data.frame

Data structures

* Overview of all structures
  + Chart of dimensions
* Vectors
  + Creating vectors
  + Common uses
  + Pros vs cons
  + Dimension
  + Sub-setting
* Matrices
  + Creating matrices
  + Common uses
  + Pros vs cons
  + Dimension
  + Sub-setting
* Arrays
  + Creating arrays
  + Common uses
  + Pros vs cons
  + Dimensions (R in a Nutshell 24)
  + Sub-setting
* Lists
  + Creating lists
  + Common uses
  + Pros vs cons
  + Dimension
  + Sub-setting
* Data frames
  + Creating data frames
  + Common uses
  + Pros vs cons
  + Dimension
  + Sub-setting
  + Str, summary, head, tail, dim, names

Common Functions

* Min, max, range, mean, median
* Sum, diff, prod,
* Var, cov, sd
* Class, unclass
* Length
* is.na, is.null
* seq, rep
* list
* abs
* ceiling, floor, round, signif

Special Values (RnNut 58)

* NA
* Inf and -Inf
* NaN
* NULL