Notes 4/26/19

Classes and Methods

* Technical, but necessary for the final workout (wrkout03)
* Every object in R has (at least one) class
  + Objects can have more than one class
  + Class(x)
    - Be careful if x is a vector, will give you the type of data instead
* Some classes come with a related family of methods
  + Common methods:
    - Print 🡪 how theyre displayed
    - Plot 🡪 how theyre plotted
    - Summary 🡪 how their contents are summarized
      * Print.summary, etc
* Ex:
  + X = (X1, X2, X3, …, Xn)
  + Variance
    - Get n, the number of elements
    - Calculate the mean (x bar)
    - All the deviations from the mean
      * Square the deviations
        + Get the population variance

Get the sd

* + - Put all the values, deviations, etc in a table
    - Get the population mean, variance, sd in a list/vector
    - Can save the table and the list together in a list
    - Can make a function variance() that returns that list
      * Results <- list(

Deviations = data.frame(

X = x,

Devs = devs,

Sqrdevs = sqrdevs)

Values <- c(“n” = n, “mean” = xmean, “bar” = xbar, “sd” = xsd)

)

Return(results)

* + - * + Class of results is *list*

Can just display the list of values by adding the following to the list in results: (keep the ellipsis!)

Function() <- (…,

results <- list(…)

Class(results) = “variance”)

results

)

Print.variance <- function(object, …) {

Print(object$values)

Invisible(object)

}