R- Assignment 2

1. What happens when you index a vector by a positive integer that is larger than the length of the vector?

You will return a missing value

1. From the Vectors chapter in R for Data Science, what are four types of atomic vectors? Give an example of the data that you’d see in each one.

Logical; TRUE, FALSE, NA

Integer; 1, 33, 20

Character; Any String, “One Dozen Eggs”

Double; 1.6, 32.5. 20

1. In R,
   1. What does mean(is.na(x)) tell you about vector x?

It tells you what proportion of x is missing values

* 1. What about sum(!is.finite(x))?

It tells you how many objects in vector x are infinite

* 1. What is an example of a character vector of length 10?

x <- c("a", "b", "c", "d", "e", "f", "g", "h", "i", "j")

* 1. If x is a vector of length 10 (like the one you describe in part c), what will be the output of the statement x[c(-1,-10)]?

What is another way you could get the same output?

"b" "c" "d" "e" "f" "g" "h" "i"

x[c(2:9)]

1. In R, execute the following code:

data(mtcars)

mpg <- array(mtcars$mpg, c(4,8))

This code creates a new variable called mpg that you’ll use to answer the following questions.

Now, answer the following questions:

1. What is the datatype of the mpg array that you have created? How do you know?

> typeof(mpg)

[1] "double"

1. What happens to the values in mpg if you pass it through the as.integer() function? What happens to the shape?

All of the numbers get converted to integer from double, rounding the numbers down.

1. What is a statement that you can write to find the value in the 2nd row and 7th column of mpg? What is that value?

> mpg[2,7]

[1] 27.3

1. What statement can you write to create a 4x4 matrix named mpg.subset containing the values in the 1st, 2nd, 5th, and 8th columns and first four (4) rows of mpg?

mpg.subset <- array(mpg[1:4,c(1,2,5,8)], c(4,4))

1. What statement can you write to find the average value in mpg? What is the average value?

mean(mpg)

20.09062

1. What statement can you write to change the value in the 4th row and 7th column of mpg to the average value you found in part e)? By how much does the average value change when you do this?

mpg[4,7] <- mean(mpg)

> mean(mpg)

[1] 19.76846