Alonso\_Week 1 Homework Assignment

Martin Alonso

7/9/2018

IST687 Introduction to Data Science: Week 1 Homework.

Define the following vectors representing weight and height of people (in inches and pounds):

height <- c(59, 60, 61, 58, 67, 72, 70)  
weight <- c(150, 140, 180, 220, 160, 140, 130)

Define a variable:

a <- 150

Now, to explore the data.

# Step 1: Calculating means

1. Compute the average height

mean(height)

## [1] 63.85714

1. Compute the average weight

mean(weight)

## [1] 160

1. Calculate the lenght of the vector ‘height’ and ‘weight’

length(height)

## [1] 7

length(weight)

## [1] 7

1. Calculate the sum of the heights

sum(height)

## [1] 447

1. Compute the average of both height and weight, by dividing the sum by the length of the vector.

sum(height)/length(height)

## [1] 63.85714

sum(weight)/length(weight)

## [1] 160

There is no difference in the use of mean() or sum()/length(). They are interchangeable, though the former is quicker to use.

# Step 2: Using max/min functions

1. Compute the max height, store the result in maxH

maxH <- max(height)  
print(maxH)

## [1] 72

1. Compute the min(weight), store the results in minW

minW <- min(weight)  
print(minW)

## [1] 130

# Step 3: Vector Math

1. Create a new vector, which is weight + 5 (every person gained 5 pounds.)

newW <- weight + 5  
print(newW)

## [1] 155 145 185 225 165 145 135

1. Compute the weight/height for each person, using the new weight just created

newW/height

## [1] 2.627119 2.416667 3.032787 3.879310 2.462687 2.013889 1.928571

# Step 4: Using Conditional if statements

1. Write R code to test if max height is greater than 60.

if(maxH > 60){"yes"} else {"no"}

## [1] "yes"

1. Write R code to test if min weight is greater than the variable a.

if(minW < a){"yes"} else {"no"}

## [1] "yes"