RWorksheet_Leysa#4a

Camilo Leysa

2024-10-14

1.

a. The table below shows the data about shoe size and height. Create a data frame. Describe the data.

```
sizes_shoe<- data.frame(Shoe_size=c(6.5,9.0,8.5,8.5,10.5,7.0,9.5,9.0,13.0,7.5,10.5,8.5,12.0,10.5,13.0
                                    ,11.5,8.5,5.0,10.0,6.5,7.5,8.5,10.5,8.5,10.5,11.0,9.0,13.0),
                        Height=c(66.0,68.0,64.5,65.0,70.0,64.0,70.0,71.0,72.0,64.0,74.5,67.0,71.0,
                                 71.0,77.0,72.0,59.0,62.0,72.0,66.0,64.0,67.0,73.0,69.0,72.0,70.0,
                                 69.0,70.0),
                        Gender=c("F","F","F","F","M","F","F","F","M","F","M","F","M","M","M","M","F",
                                 "F","M","F","F","M","M","F","M","M","M","M"))
sizes_shoe
```

```
##    Shoe_size Height Gender
## 1        6.5   66.0      F
## 2        9.0   68.0      F
## 3        8.5   64.5      F
## 4        8.5   65.0      F
## 5       10.5   70.0      M
## 6        7.0   64.0      F
## 7        9.5   70.0      F
## 8        9.0   71.0      F
## 9       13.0   72.0      M
## 10       7.5   64.0      F
## 11      10.5   74.5      M
## 12       8.5   67.0      F
## 13      12.0   71.0      M
## 14      10.5   71.0      M
## 15      13.0   77.0      M
## 16      11.5   72.0      M
## 17       8.5   59.0      F
## 18       5.0   62.0      F
## 19      10.0   72.0      M
## 20       6.5   66.0      F
## 21       7.5   64.0      F
## 22       8.5   67.0      M
## 23      10.5   73.0      M
## 24       8.5   69.0      F
## 25      10.5   72.0      M
## 26      11.0   70.0      M
## 27       9.0   69.0      M
## 28      13.0   70.0      M
```

b. Create a subset by males and females with their corresponding shoe size and height.

```
male_subset <- subset(sizes_shoe,Gender =="M")
male_subset
```

```
##    Shoe_size Height Gender
## 5       10.5   70.0      M
## 9       13.0   72.0      M
## 11      10.5   74.5      M
## 13      12.0   71.0      M
## 14      10.5   71.0      M
## 15      13.0   77.0      M
## 16      11.5   72.0      M
## 19      10.0   72.0      M
## 22       8.5   67.0      M
## 23      10.5   73.0      M
## 25      10.5   72.0      M
## 26      11.0   70.0      M
## 27       9.0   69.0      M
## 28      13.0   70.0      M
```

b.

```
female_subset <- subset(sizes_shoe,Gender == "F")
female_subset
```

```
##    Shoe_size Height Gender
## 1        6.5   66.0      F
## 2        9.0   68.0      F
## 3        8.5   64.5      F
## 4        8.5   65.0      F
## 6        7.0   64.0      F
## 7        9.5   70.0      F
## 8        9.0   71.0      F
## 10       7.5   64.0      F
## 12       8.5   67.0      F
## 17       8.5   59.0      F
## 18       5.0   62.0      F
## 20       6.5   66.0      F
## 21       7.5   64.0      F
## 24       8.5   69.0      F
```

c. Find the mean of the shoe size of the respondents.

```
mean_shoesize <- mean(sizes_shoe$Shoe_size)
mean_shoesize
```

```
## [1] 9.410714
```

c. Find the mean of the height of the respondents.

```r
mean_height <- mean(sizes_shoe$Height)
mean_height
```

```
## [1] 68.57143
```

d. Is there a relationship between shoe size and height? Why?

```r
#There is a relationship in the shoe size and height. As we can see in the table, if a person is
#tend to be taller, its shoe size is also big. For instance, we can see in the person with the
#height of 77.0 has also a big shoe size of 13.0. This implies that the taller individuals often
#have larger feet which generally aligns with their biological expectations.
```

2. a.Construct character vector months to a factor with factor() and assign the result to factor_months_vector. Print out factor_months_vector and assert that R prints out the factor levels below the actual values.

```r
months_vector <- c("March","April","January","November","January","September","October",
                   "September","November","August","January","November","November","February",
                   "May","August","July","December","August","August","September","September",
                   "November","February","April")
factor_months_vector <- factor(months_vector)
factor_months_vector
```

```
##  [1] March     April     January   November  January   September October
##  [8] September November  August    January   November  November  February
## [15] May       August    July      December  August    August    September
## [22] September November  February  April
## 11 Levels: April August December February January July March May ... September
```

3. Then check the summary() of the months_vector and factor_months_vector. Interpret the results of both vectors. Are they both equally useful in this case?

```r
summary_months <- summary(months_vector)
summary_months
```

```
##    Length     Class      Mode
##        25 character character
```

```r
summary_factor_months <- summary(factor_months_vector)
summary_factor_months
```

```
##     April    August  December  February   January      July     March       May
##         2         4         1         2         3         1         1         1
##  November   October September
##         5         1         4
```

4. Create a vector and factor for the table below.

```r
Directions <- c("East","West","North")
Frequency<- c(1L,4L,3L)
Directions
```

```
## [1] "East"  "West"  "North"
```

```r
Frequency
```

```
## [1] 1 4 3
```

```r
new_order_data <- factor(Directions, levels= c("East","West","North"))
new_order_data
```

```
## [1] East  West  North
## Levels: East West North
```

5. Enter the data below in Excel with file name = import_march.csv

```r
Data <- read.table("import_march.csv", sep=",", header = TRUE)
Data
```

```
##   Students Strategy.1 Strategy.2 Strategy.3
## 1                  NA         NA         NA
## 2     Male          8         10          8
## 3                   4          8          6
## 4                   0          6          4
## 5   Female         14          4         15
## 6                  10          2         12
## 7                   6          0          9
```

b.View the dataset. Write the R scripts and its result.

```r
View(Data)
```