Work Sheet 4

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

library(dplyr) library(readr) library(data.table)

a. Describe the data.

```
Shoesize <- 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)

Gender <- c("F","F","F","F","M","F","M","F","M",
             "M","M","F","M","M","M","M","F","F",
            "M","F","M","M","M","F","M","M","M","M")

 data_frame <- data.frame(Shoesize,Height,Gender)
 data_frame
```

```
##    Shoesize 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      M
## 8       9.0   71.0      F
## 9      13.0   72.0      M
## 10      7.5   64.0      M
## 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      M
## 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
```

Answer: The output will show a data base on what we put on each rows within the dataframe

b. Find the mean of shoe size and height of the respondents. Copy the codes and results.

- ***Male***

```
Boy <- subset(data_frame, Gender == "M")
mean(Boy$Shoesize)
```

```
## [1] 10.47059
```

```
mean(Boy$Height)
```

```
## [1] 70.5
```

- ***Female***

```
Girl <- subset(data_frame, Gender == "F")
mean(Girl$Shoesize)
```

```
## [1] 7.772727
```

```
mean(Girl$Height)
```

```
## [1] 65.59091
```

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

Yes, The Higher the height, the greater the Swhoesize. the factor levels below the actual values.

2. 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.

```
Months_Vector <- c("March","April","January","November","January",
            "September","October","September","November","August",
            "January","November","November","February","May","August",
            "July","December","August","August","September","November","February","April")
Factor_Month_Vector <- factor(Months_Vector)
Factor_Month_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] November  February  April
## 11 Levels: April August December February January July March May ... September
```

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

```
summary(Months_Vector)
summary(Factor_Month_Vector)
```

Answer: For me Yes, as for the months_vector it shows the number of months and its class and mode, while the factor_Month_Vector the month has been factor by level and alphabetical and it show the number of each months.

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

```
factorData <- data.frame(
 Direction = c("East","West","North"),
 Frequency = c(1,4,3)
)
factorData
```

```
##   Direction Frequency
## 1      East         1
## 2      West         4
## 3     North         3
```

```
newOrderData <- factor(factorData,levels = c("East","West","North"))
print(newOrderData)
```

```
## Direction Frequency
##      <NA>      <NA>
## Levels: East West North
```

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

a. Import the excel file into the Environment Pane using read.table() function.

b. View the dataset. Write the code and its result.