Worksheet 4

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

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

```
##    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
```

data_frame

a. Describe the data. The data shows the shoe size and height according to Gender. It shows that most of the male has a higher shoe size and height than female.
b. Find the mean of shoe size and height of the respondents. #Copy the codes and results.

```
summary(data_frame)
```

```
##    Shoe_size          Height         Gender
##  Min.   : 5.000   Min.   :59.00   Length:28
##  1st Qu.: 8.500   1st Qu.:65.75   Class :character
##  Median : 9.000   Median :69.50   Mode  :character
##  Mean   : 9.411   Mean   :68.57
##  3rd Qu.:10.500   3rd Qu.:71.25
##  Max.   :13.000   Max.   :77.00
```

The mean of shoesize is 9.50 and the mean of Height is 68.71.

c. Is there a relationship between shoe size and height? Why? Yes because if you have a taller height then your shoe size is longer, same with having a shorter height.

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 <- 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_months_vector <- factor(months)
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] 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?

```
summary( months)
```

```
##    Length     Class      Mode
##        24 character character
```

```
summary(factor_months_vector)
```

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

Using this summary(months_factor) its results show that there are 24 character used while using this summary(factor_months_vector) its results show that every month has a number of how many it is.

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

```
Direction <- c("East", "West", "North")
Frequency <- c(1,4,3)

factor_data <- factor(Direction)
factor_data
```

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

```
factor_data <- factor(Frequency)
factor_data
```

```
## [1] 1 4 3
## Levels: 1 3 4
```

Apply the factor function with required order of the level.

```
factor_data <- c("East", "West", "North")
new_order_data <- factor(factor_data,levels = c("East","West","North"))
print(new_order_data)
```

```
## [1] East  West  North
## 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. Write the code.

```
read_data <- read.table("/cloud/project/WORKSHEET 4/import_march.csv",
                        header = TRUE, sep =",")
```

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

```
read.csv("/cloud/project/WORKSHEET 4/import_march.csv")
```

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