Worksheet #4

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

```
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)
ShoeSize
```

```
##  [1]  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
## [16] 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)
Height
```

```
##  [1] 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
## [16] 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 <- rep(c("F", "M", "F", "M", "F", "M", "F", "M", "M", "F", "M", "F", "M", "F", "M"),
              c(4, 1, 3, 1, 1, 1, 1, 2, 2, 2, 1, 2, 2, 1, 4))
Gender
```

```
##  [1] "F" "F" "F" "F" "M" "F" "F" "F" "M" "F" "M" "F" "M" "M" "M" "M" "F" "F" "M"
## [20] "F" "F" "M" "M" "F" "M" "M" "M" "M"
```

```
ShoeCustomersProfile <- data.frame (
  ShoeSize,
  Height,
  Gender
)
ShoeCustomersProfile
```

```
##    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      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
```

#1a. Describe the data.

#1b. Find the mean of shoe size and height of the respondents. Copy the codes and results.

```
shoeSizeMean <- mean(ShoeSize)
shoeSizeMean
```

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

```
heightMean <- mean(Height)
heightMean
```

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

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

```
maleOnes <- subset(ShoeCustomersProfile, Gender == "M")
maleOnes
```

```
##    ShoeSize 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
```

```r
maleHeightMean <- mean(maleOnes$Height)
maleHeightMean
```

```
## [1] 71.46429
```

```r
maleShoeSizeMean <- mean (maleOnes$ShoeSize)
maleShoeSizeMean
```

```
## [1] 10.96429
```

```r
FemaleOnes <- subset(ShoeCustomersProfile, Gender == "F")
FemaleOnes
```

```
##    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
## 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
```

```r
FemaleHeightMean <- mean(FemaleOnes$Height)
FemaleHeightMean
```

```
## [1] 65.67857
```

```r
FemaleShoeSizeMean <- mean (FemaleOnes$ShoeSize)
FemaleShoeSizeMean
```

```
## [1] 7.857143
```

```r
# The result of the code above outputs the mean of each gender's height and shoe size.
#For Male,the shoe size' mean is 10.9, and the height's mean is 71.4.
#Meanwhile for Female, the shoe size' mean is 7.85, and the height's mean is 65.6. ano konek sa questio

# I filter shoe sizes, one is with equal or less than 9 and the other one is sizes greater than nine.
#It shows that people with short height have smaller shoe size meanwhile those taller have bigger size.

sampleSmallShoeSize <- subset(ShoeCustomersProfile, ShoeSize <= 9)
sampleSmallShoeSize
```

```
##    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
## 6       7.0   64.0      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
## 22      8.5   67.0      M
## 24      8.5   69.0      F
## 27      9.0   69.0      M
```

```
smallSizeMean <- mean(sampleSmallShoeSize$ShoeSize)
smallSizeMean
```

```
## [1] 7.866667
```

```
sampleSmallHeightMean <- mean(sampleSmallShoeSize$Height)
sampleSmallHeightMean
```

```
## [1] 65.7
```

```
sampleBigShoeSize <- subset(ShoeCustomersProfile, ShoeSize > 9)
sampleBigShoeSize
```

```
##    ShoeSize Height Gender
## 5      10.5   70.0      M
## 7       9.5   70.0      F
## 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
## 23     10.5   73.0      M
## 25     10.5   72.0      M
## 26     11.0   70.0      M
## 28     13.0   70.0      M
```

```
smallBigMean <- mean(sampleBigShoeSize$ShoeSize)
smallBigMean
```

```
## [1] 11.19231
```

```
sampleBigHeightMean <- mean(sampleBigShoeSize$Height)
sampleBigHeightMean
```

```
## [1] 71.88462
```

#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")

months_vector
```

```
##  [1] "March"     "April"     "January"   "November"  "January"   "September"
##  [7] "October"   "September" "November"  "August"    "January"   "November"
## [13] "November"  "February"  "May"       "August"    "July"      "December"
## [19] "August"    "August"    "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] 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?

```
monthsSummary <- summary(months_vector)
monthsSummary
```

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

```
factoredMonthsSummary <- summary(factor_months_vector)
factoredMonthsSummary
```

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

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

```r
Direction <- c("East", "West", "North")
Direction
```

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

```r
Frequency <- c(1, 4, 3)
Frequency
```

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

```r
factoredDirection <- factor(Direction)
factoredDirection
```

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

```r
factoredFrequency <- factor(Frequency)
factoredFrequency
```

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

```r
new_order_data <- factor(Direction,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. Import the excel file into the Environment Pane using read.table() function. Write the code.

```r
readTable <- read.table("C:\\Users\\User\\OneDrive\\Documents\\import_march.csv", header=TRUE,
                        sep = ",")
readTable
```

```
##   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
## 7                  NA         NA         NA
```

```r
readFile <- read.csv("C:\\Users\\User\\OneDrive\\Documents\\import_march.csv")
View(readFile)
```