# Worksheet 4

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## R Markdown

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

```
Customers <- 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),
  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")
)
Customers
```

```
##    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
```

a.Describe the data.

```
#The data is about the customers shoe size, height and gender.
```

b.Find the mean of shoe size and height of the respondents.

```
#Copy the codes and results
summary(Customers)
```

```
##     Shoesize          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
```

```
#Shoesize:    Mean   : 9.411
#Height:      Mean   :68.57
```

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

```
#Yes,because taller women tend to have larger feet since they need a larger
#base for balance while shorter women tend to have smaller feet since
#they require a smaller base.
```

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 <- factor(Months)
factor_Months
```

```
##  [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)
```

```
##     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.

```
factor_data <- c(1,4,3)
new_order_data <- factor(factor_data,levels = c("East","West","North"))
print(new_order_data)
```

```
## [1] <NA> <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

```
getwd()
```

```
## [1] "E:/CS 101/Worksheet4"
```

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

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

b. View thee data set.Write the code and its result.

```
read.csv("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         10          4         15
## 5                  14          2         12
## 6                   6          0          9
```