# RWorksheet_Aguas4

## Diana Marie Aguas

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

```r
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)
Shoe_size
```

```
##  [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
```

```r
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)
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
```

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

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

```r
Shoesize <- c(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] 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
```

```r
Height_ <- c(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] 77 72 59 62 72 66 64 67 73 69 72 70 69 70
```

```r
Gender_ <- c("M","M","F","F","M","F","F","M","M","F","M","M","M","M")
Gender_
```

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

```r
df <- data.frame(Shoe_size, Height, Gender, Shoesize, Height_, Gender_)
```

a. Describe the data -It shows the differences between women and mens shoe size and height.
b.

```r
mean_1 <- mean(Shoe_size)
mean_1
```

```
## [1] 9.321429
```

```r
mean_2 <- mean(Shoesize)
mean_2
```

```
## [1] 9.5
```

```r
res <- c(mean_1, mean_2)
res
```

```
## [1] 9.321429 9.500000
```

```r
meanshoes <- mean(res)
meanshoes
```

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

```r
mean_3 <- mean(Height)
mean_3
```

```
## [1] 68.42857
```

```r
mean_4 <- mean(Height_)
mean_4
```

```
## [1] 68.71429
```

```r
res2 <- c(mean_3, mean_4)
res2
```

```
## [1] 68.42857 68.71429
```

```r
meanheight <- mean(res2)
meanheight
```

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

  c.

```r
meanhsh <- mean(c(meanshoes, meanheight))
meanhsh
```

```
## [1] 38.99107
```

-There is a relationship between the height and shoe size because when the person is short, then the shoe size is small and when the person is tall, then the shoe size is big.

# FACTORS

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.

```r
months_vector <- c("March", "April", "January", "November", "January", "September","October", "September
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?

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

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

```r
months_summ2 <- summary(factor_months_vector)
months_summ2
```

```
##     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
factor_data <- c("East" = '1', "West" = '4', "North" = '3')
factor_data
```

```
##  East  West North
##   "1"   "4"   "3"
```

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

```
##  East  West North
##     1     4     3
## Levels: 1 4 3
```

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

a.

```r
import <- read.table("/cloud/project/RWorksheet3,4,5/import_march.csv",header = TRUE, sep = ",")
import
```

```
##   Students Strategy1 Strategy2 Strategy3
## 1     Male         8        10         8
## 2                  4         8         6
## 3                  0         6         4
## 4   Female        14         4        15
## 5                 10         2         2
## 6                  6         0         9
```

b.

```r
view <- read.csv("/cloud/project/RWorksheet3,4,5/import_march.csv")
view
```

```
##   Students Strategy1 Strategy2 Strategy3
## 1     Male         8        10         8
## 2                  4         8         6
## 3                  0         6         4
## 4   Female        14         4        15
## 5                 10         2         2
## 6                  6         0         9
```