worksheet#4

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

```
shoe <- 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
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
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",
shoe
```

```
##    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
```

```
names(shoe) <- list("Shoe size", "Height", "Gender")
shoe
```

```
##    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
```

```
#Describe the data.
#- The data shows the various sizes of shoes of both male and female including their heights
```

```
#Find the mean of the shoe size and height of the repondents.Copy the codes and results.
```

```
#Shoe size
mean(shoe$`Shoe size`)
```

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

```r
#Height
mean(shoe$Height)
```

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

```r
#c. Is there a relationship between shoe size and height? Why?
#-- Yes the relationship of between Shoe size and height is somehow relatable. Some shoe size are based
```

FACTORS A nominal variable is catergorical variable without an implied order.This means that it is impossible to say that ' one is worth more than the other'.In contrast, ordinal variables do have a natural ordering. Example:

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

```
## [1] M F F M
## Levels: F M
```

```r
#Construct character vector months to a factor with factor() and assign the result to factor_months_vec


#Consider data consisting of the names of months:

vector_months <- c("March","April","January","November","January","September","October","September","No

factor_months_vector <- factor(vector_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
```

Then check the summary() of the months_vector and factors_months_vector.

```r
#Interpret the result of both vectors.Are they both equally useful in this case?

summary(vector_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
```

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

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

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

```
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
```

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

```
getwd()
```

```
## [1] "C:/WORKSHEETS_CS101/WORKHEETS/worksheet4"
```

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

```
##   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
```

```r
#b.View the dataset.Write the code and its result.

getwd()
```

```
## [1] "C:/WORKSHEETS_CS101/WORKHEETS/worksheet4"
```

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

```
##   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
```