Worksheet 4

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#1

```
data_Frame <- 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),
                         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),
                         Gender= c("F", "F", "F", "F", "M", "F", "F", "F", "M", "F", "M",
                                   "F", "M", "M"),
                         Shoe_size2= 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),
                         Height2= 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),
                         Gender2= c("M", "M", "F", "F", "M", "F", "F", "M", "M", "F", "M",
                                    "M", "M", "M"))
data_Frame
```

```
##    Shoe_size Height Gender Shoe_size2 Height2 Gender2
## 1        6.5   66.0      F       13.0      77       M
## 2        9.0   68.0      F       11.5      72       M
## 3        8.5   64.5      F        8.5      59       F
## 4        8.5   65.0      F        5.0      62       F
## 5       10.5   70.0      M       10.0      72       M
## 6        7.0   64.0      F        6.5      66       F
## 7        9.5   70.0      F        7.5      64       F
## 8        9.0   71.0      F        8.5      67       M
## 9       13.0   72.0      M       10.5      73       M
## 10       7.5   64.0      F        8.5      69       F
## 11      10.5   74.5      M       10.5      72       M
## 12       8.5   67.0      F       11.0      70       M
## 13      12.0   71.0      M        9.0      69       M
## 14      10.5   71.0      M       13.0      70       M
```

##a. ## data is for measuring shoe sizes with mix male and female respondents

##b. ## Gender Male Shoe_size and Height mean

```
data1 <- subset(data_Frame[1:14, 1:3])
data1
```

```
##    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
```

```
male <- data1[data_Frame$Gender == 'M',]
male
```

```
##    Shoe_size 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
```

```
mean_M <- mean(male$Shoe_size)
mean_M
```

```
## [1] 11.3
```

```
height_M <- mean(male$Height)
height_M
```

```
## [1] 71.7
```

##Gender Male Shoe_size2 and Height2 mean

```
data2 <- subset(data_Frame[1:14, 4:6])
data2
```

```
##    Shoe_size2 Height2 Gender2
## 1        13.0      77       M
## 2        11.5      72       M
## 3         8.5      59       F
## 4         5.0      62       F
## 5        10.0      72       M
## 6         6.5      66       F
## 7         7.5      64       F
## 8         8.5      67       M
## 9        10.5      73       M
```

```
## 10        8.5      69       F
## 11       10.5      72       M
## 12       11.0      70       M
## 13        9.0      69       M
## 14       13.0      70       M
```

```
male2 <- data2[data_Frame$Gender2 == 'M',]
male2
```

```
##    Shoe_size2 Height2 Gender2
## 1        13.0      77       M
## 2        11.5      72       M
## 5        10.0      72       M
## 8         8.5      67       M
## 9        10.5      73       M
## 11       10.5      72       M
## 12       11.0      70       M
## 13        9.0      69       M
## 14       13.0      70       M
```

```
mean_M2 <- mean(male2$Shoe_size2)
mean_M2
```

```
## [1] 10.77778
```

```
height_M2 <- mean(male2$Height2)
height_M2
```

```
## [1] 71.33333
```

##Gender Female Shoe_size and Height mean

```
data3 <- subset(data_Frame[1:14, 1:3])
data3
```

```
##    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
```

```r
female3 <- data3[data_Frame$Gender == 'F',]
female3
```

```
##    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
## 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
```

```r
mean_F3 <- mean(female3$Shoe_size)
mean_F3
```

```
## [1] 8.222222
```

```r
height_F3 <- mean(female3$Height)
height_F3
```

```
## [1] 66.61111
```

##Gender Female Shoe_size2 and Height2 mean

```r
data4 <- subset(data_Frame[1:14, 4:6])
data4
```

```
##    Shoe_size2 Height2 Gender2
## 1        13.0      77       M
## 2        11.5      72       M
## 3         8.5      59       F
## 4         5.0      62       F
## 5        10.0      72       M
## 6         6.5      66       F
## 7         7.5      64       F
## 8         8.5      67       M
## 9        10.5      73       M
## 10        8.5      69       F
## 11       10.5      72       M
## 12       11.0      70       M
## 13        9.0      69       M
## 14       13.0      70       M
```

```r
female4 <- data4[data_Frame$Gender2 == 'F',]
female4
```

```
##    Shoe_size2 Height2 Gender2
## 3         8.5      59       F
```

```
## 4         5.0      62       F
## 6         6.5      66       F
## 7         7.5      64       F
## 10        8.5      69       F
```

```
mean_F4 <- mean(female4$Shoe_size2)
mean_F4
```

```
## [1] 7.2
```

```
height_F4 <- mean(female4$Height2)
height_F4
```

```
## [1] 64
```

Output: For the first three columns I code the mean of male and female Shoe_size

and Height. mean for male shoe size = 11.3, height = 71.7

For the female mean shoe size = 8.222222, height = 66.61111

Output: For the last three columns I code the mean of male and female Shoe_size2

and Height2. mean for male shoe size = 10.77778, height = 71.33333

female mean shoe size = 7.2 , height = 64

##c. ## the first three columns, the average shoe size for male respondents = 11.3, ## height = 71.7. For the female respondents the average shoe size = 8.222222, height = 66.61111 ## For the last three columns, the average shoe size for male respondents = 10.77778, ## height = 71.33333. For the female respondents the average shoe size = 7.2, ## height = 64 ## The relationship of shoe size and height for the first three columns is, most of the male ## respondents is tall and have a larger feet compared to female respondents ## same thing could be said for the last three columns, the male respondents have ## bigger feet and is taller in height. female are short in height and have smaller feet

commonly if the height is tall the larger the feet, likewise the shorter the height the

smaller feet. although it is possible for tall people to have smaller feet and short

people to have larger feet.

#2

```
months_V <- 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_V <- factor(months_V)
print(factor_months_V)
```

```
##  [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

```
summary(months_V)
```

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

```
summary(factor_months_V)
```

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

#4)

```
Direction <- c("East", "West", "North")
Frequency <- c(1, 4, 3)
a1 <- factor(Direction)
a2 <- factor(Frequency)
print(a1)
```

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

```
print(a2)
```

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

#5)

##a. getwd() a3 <- read.table("import_march.csv", header= TRUE, sep= ",") a3

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

##For xlsx file but not read.table: ##library(readxl) ##import_march <- read_excel("import_march.xlsx") ##View(import_march)

##b. View(a) ##It opens another tab in R with object name that I gave which is a3. It displayed ##he table that I made from excel.