Worksheet 4

Ben Robert T. Salve.

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#Ben Robert T. Salve. BSIT 2-A

#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. ##The data is for measuring shoe sizes with mix male and female respondents. ##There are 3 variables with the same name, I thought it would confuse the R program that ##is why I put 2 at the end of the other 3 variable names. I tried to follow the variable ##names of the given data the result was at the end of the other 3 variable names they ##have a .1 each.

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

```r
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
```

```r
male_only <- data1[data_frame$Gender == 'M',]
male_only
```

```
##    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
```

```r
mean_male <- mean(male_only$Shoe_size)
mean_male
```

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

```r
height_male <- mean(male_only$Height)
height_male
```

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

##Gender Male Shoe_size2 and Height2 mean.

```r
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
```

```
male_only2 <- data2[data_frame$Gender2 == 'M',]
male_only2
```

```
##    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_male2 <- mean(male_only2$Shoe_size2)
mean_male2
```

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

```
height_male2 <- mean(male_only2$Height2)
height_male2
```

```
## [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
```

```
female_only3 <- data3[data_frame$Gender == 'F',]
female_only3
```

```
##    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
```

```
mean_female3 <- mean(female_only3$Shoe_size)
mean_female3
```

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

```
height_female3 <- mean(female_only3$Height)
height_female3
```

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

##Gender Female Shoe_size2 and Height2 mean

```
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
```

```
female_only4 <- data4[data_frame$Gender2 == 'F',]
female_only4
```

```
##    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_female4 <- mean(female_only4$Shoe_size2)
mean_female4
```

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

```
height_female4 <- mean(female_only4$Height2)
height_female4
```

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

##Output: For the first three columns I took the mean of male and female Shoe_size ##and Height the mean for male shoe size is 11.3 and for the height it is 71.7. ##For the female mean shoe size is 8.222222 and for the height it is 66.61111.

##Output: For the last three columns I took the mean of male and female Shoe_size2 ##and Height2 the mean for male shoe size is 10.77778 and for the height it is 71.33333. ##For the female mean shoe size is 7.2 and for the height it is 64.

##c. ##The first three columns, the average shoe size for male respondents is 11.3 and the ##height is 71.7. For the female respondents the average shoe size is 8.222222 and the ##height is 66.61111. ##For the last three columns, the average shoe size for male respondents is 10.77778 ##and the height is 71.33333. For the female respondents the average shoe size is 7.2 ##and the height is 64. ##The relationship of shoe size and height for the first three columns is that the male ##respondents are mostly tall and they have a larger feet for the female they have ##smaller feet and short in height. ##I could still say the same about the last three columns the male respondents have ##larger feet and tall in height. The female are short in height and have smaller feet.

##Usually if you are tall you will have a larger feet and if you are short you will ##have smaller feet. But it is possible for tall people to have smaller feet and short ##people to have larger feet. Everyone have different shoe sizes for balancing when ##you walk and run.

#2)

```
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")
factor_months_vector <- factor(months_vector)
print(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)

```
summary(months_vector)
```

```
##    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
```

Both of the vector summary are useful in this case because at the summary of months_vector

tells us about the length, class, and mode. In summary of factor_months_vector it tells us

how many repeating elements are there.

#4)

```
Direction <- c("East", "West", "North")
Frequency <- c(1, 4, 3)
x1 <- factor(Direction)
x2 <- factor(Frequency)
print(x1)
```

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

```
print(x2)
```

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

#5)

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

##Output:
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

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

##b. View(a)

##It open another tab in R with the object name that I gave which is a. It displayed ##the table that I made from excel, at first I used the readxl package to import the ##file in global environment but the question was to use the read.table. I renamed the ##file to .csv my first file was in .xlsx then added header and sep.