

# RWorksheet\_Francisco#4a

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```
#1.  
Household_data <- read.csv("/cloud/project/worksheet#4/Household Data.csv")  
Household_data
```

```
##      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
```

#1.a: The data has 28 objects with 3 variables:Shoe size, Height and Gender

```
#1.b  
sub1 <- subset(Household_data, Gender == "M" & Shoe.size&Height)  
sub1
```

```
##      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
## 15      13.0   77.0     M
## 16      11.5   72.0     M
## 19      10.0   72.0     M
## 22       8.5   67.0     M
## 23      10.5   73.0     M
## 25      10.5   72.0     M
## 26      11.0   70.0     M
## 27       9.0   69.0     M
## 28      13.0   70.0     M
```

```
#1.b
```

```
sub2 <- subset(Household_data, Gender == "F" & Shoe.size < Height)
sub2
```

```
##      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
## 17        8.5   59.0     F
## 18        5.0   62.0     F
## 20        6.5   66.0     F
## 21        7.5   64.0     F
## 24        8.5   69.0     F
```

```
#1.c
```

```
mean1 <- mean(Household_data$Shoe.size)
mean1
```

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

```
mean2 <- mean(Household_data$Height)
mean2
```

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

#1.d: Based on the given data if we compare the Male and Female proportion about shoe size and height, there's a big difference for Male because as the Height of Males increase the shoe size also increases while on the other hand Females vary from shoe sizes as there's some who is much shorter than other but have bigger shoe sizes

```
#2
```

```
Months <- c("March", "April", "January", "November", "January", "September", "October", "September", "November")
```

```
factor_months_vector <- factor(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
```

```
#3
```

```
Sum <- summary(Months)
```

```
Sum
```

```
##      Length      Class      Mode
```

```
##           24 character character
```

```
Sum2 <- summary(factor_months_vector)
```

```
Sum2
```

```
##      April      August  December  February  January      July      March      May
```

```
##           2          4           1           2           3           1           1           1
```

```
## November  October  September
```

```
##           5          1           3
```

```
#4
```

```
Datas <- c(c("East", "West", "North"), c(1,4,3))
```

```
Datas
```

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

```
factor_data <- matrix(Datas,nrow=3,ncol=2)
```

```
factor_data
```

```
##      [,1] [,2]
```

```
## [1,] "East" "1"
```

```
## [2,] "West" "4"
```

```
## [3,] "North" "3"
```

```
#4
```

```
colnames(factor_data) <- c("Direction", "Frequency")
```

```
factor_data
```

```
##      Direction Frequency
```

```
## [1,] "East"      "1"
```

```
## [2,] "West"      "4"
```

```
## [3,] "North"     "3"
```

```
#4:: The 1,2,3 resulted in NA because those values are missing and did not matched the specified levels
```

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

```
print(new_order_data)
```

```
## [1] East West North <NA> <NA> <NA>
```

```
## Levels: East West North
```

```
#5a
```

```
setwd("/cloud/project/worksheet#4")
```

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

```
Strats
```

```
##      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
```

*#5b: It shows the contents of the table*  
Strats

```
## 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
```

*#6*

```
Num <- readline(prompt="Select a number between 1 to 50:")
```

```
## Select a number between 1 to 50:
```

```
if(Num<=1 || Num>=50){
  print("The number selected is beyond the range of 1 to 50")
}else if(Num==20){
  print("TRUE")
}else{
  print(Num)
}
```

```
## [1] "The number selected is beyond the range of 1 to 50"
```

*#7*

```
Input <- 150
if(Input<=50){
  cat("Bill must be 50 pesos")
}else if (Input <=100 && Input >= 50){
  cat("Bill must be 100 pesos")
}else if (Input <= 200 && Input >=100){
  cat("Bill must be 200 pesos")
}else if (Input <= 500 && Input >= 200){
  cat("Bill must be 500 pesos")
}else if (Input <= 1000 && Input >= 500){
  cat("Bill must be 1000 pesos")
}
```

```
## Bill must be 200 pesos
```

*#8*

```
students <- data.frame(
  Name = c("Annie", "Thea", "Steve", "Hanna"),
  Grade1 = c(85, 65, 75, 95),
  Grade2 = c(65, 75, 55, 75),
  Grade3 = c(85, 90, 80, 100),
  Grade4 = c(100, 90, 85, 90))
```

*#B*

```
Annie <- "Annie"
Thea <- "Thea"
Steve <- "Steve"
Hannah <- "Hannah"
choice <- readline(prompt="Select Student: ")
```

```
## Select Student:
```

```

if(choice == Annie){
  x <- (85+65+85+100)/4
  paste("Annie's average grade this semester is" ,x)
}else if(choice == Thea){
  y <- (65+75+90+75)/4
  paste("Thea's average grade this semester is" ,y)
}else if(choice == Steve){
  a <- (85+55+80+85)/4
  paste("Steve's average grade this semester is" ,a)
}else if (choice == Hannah){
  b <- (100+75+100+90)/4
  paste("Hannah's average grade this semester is" ,b)
}else{
  print("Select Again")
}

```

```
## [1] "Select Again"
```

```

avg_res<- rowSums(students[, 2:5]) / 4
for (i in 1:nrow(students)) {
  if (avg_res[i] < 80) {
    cat("The", i, "test was difficult.\n")
  }
}

```

```
## The 3 test was difficult.
```

```

#D
for (i in 1:nrow(students)) {
  highest_score <- max(students[i, 2:5])
  if (highest_score > 90) {
    cat(students$Name[i], "'s highest grade this semester is", highest_score, "\n")
  }
}

```

```

## Annie 's highest grade this semester is 100
## Hanna 's highest grade this semester is 100

```