

# RWorksheet\_Marquez#4a

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#1.

```
Household_data <- read.csv("/cloud/project/RWorkSheet_Marquez#4a/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         5.5   70.0      F
## 8         9.0   71.0      M
## 9         7.5   64.0      F
## 10        10.5   74.5      F
## 11         8.5   67.0      M
## 12        12.0   71.0      M
## 13        10.5   71.0      M
## 14        13.0   77.0      M
## 15        11.5   72.0      M
## 16         8.5   59.0      F
## 17        10.0   62.0      F
## 18         6.5   66.0      F
## 19         8.5   64.0      F
## 20         8.5   67.0      M
## 21        10.5   73.0      M
## 22        11.0   72.0      M
## 23         9.0   69.0      M
## 24        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      M
## 8         9.0     71      M
## 11         8.5     67      M
## 12        12.0     71      M
## 13        10.5     71      M
## 14        13.0     77      M
## 15        11.5     72      M
```

```
## 20      8.5      67      M
## 21     10.5      73      M
## 22     11.0      72      M
## 23      9.0      69      M
## 24     13.0      70      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         5.5    70.0      F
## 9         7.5    64.0      F
## 10        10.5    74.5      F
## 16         8.5    59.0      F
## 17        10.0    62.0      F
## 18         6.5    66.0      F
## 19         8.5    64.0      F
```

#1.c

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

```
## [1] 9.3125
```

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

```
## [1] 68.20833
```

#1.d: Based on the given data if we compare the Male and Female shoe size and height, there's a big difference. If the Height of Males increase the shoe size also increase but Females on the other hand their there's some of them who is much shorter but have bigger shoe size.

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

```
#6a.
```

```
Num <- readline(prompt="Enter number: ")
```

```
## Enter number:
```

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

```
## [1] ""
```

```
#7.
```

```
snackPrice<-readline(prompt = "Enter Amount: ")
```

```
## Enter Amount:
```

```
if (snackPrice == 50){  
  print("The minimum bill is : 100")  
}else if(snackPrice == 100){  
  print("The minimum bill is : 100")  
}else if(snackPrice == 200){  
  print("The minimum bill is : 200")  
}else if(snackPrice == 500){  
  print("The minimum bill is : 500")  
}else if(snackPrice == 1000){  
  print("The minimum bill is : 1000")  
}else{  
  print("The number is not divisible by 50")  
}
```

```
## [1] "The number is not divisible by 50"
```

```
#8a.
```

```
Name<- c("Annie", "Thea", "Steve", "Anna")
```

```
Grade1<- c(85, 65, 75, 95)
```

```
Grade2 <- c(65, 75, 55, 75)
```

```
Grade3<-c(85, 90, 80, 100)
```

```
Grade4<- c (100, 90, 85, 90)
```

```
Students <- data.frame(Name, Grade1, Grade2, Grade3, Grade4)
```

```
Students
```

```
##      Name Grade1 Grade2 Grade3 Grade4  
## 1 Annie      85      65      85     100  
## 2 Thea       65      75      90      90  
## 3 Steve      75      55      80      85  
## 4 Anna       95      75     100      90
```

```
#8b.
```

```

for (i in 1:nrow(Students)) {
  avg_score <- (Students[i, "Grade1"] + Students[i, "Grade2"] + Students[i, "Grade3"] + Students[i, "Grade4"]) / 4

  if (avg_score > 90) {
    cat(sprintf("%s's average grade this semester is %.2f. ", Students[i, "Name"], avg_score))
  }
}

```

## Annie's average grade this semester is 260.00. Thea's average grade this semester is 252.50. Steve's average grade this semester is 245.00. #8c.

```

test_averages <- colMeans(Students[2:5])

for (j in 1:length(test_averages)) {
  if (test_averages[j] < 80) {
    cat(sprintf("The %dnd test was difficult.\n", j))
  }
}

```

## The 2nd test was difficult.

```

for (i in 1:nrow(Students)) {
  highest_score <- Students[i, 2:5][1]
  for (j in 2:4) {
    if (Students[i, j + 1] > highest_score) {
      highest_score <- Students[i, j + 1]
    }
  }
  if (highest_score > 90) {
    cat(sprintf("%s's highest grade this semester is %d.\n", Students$Name[i], highest_score))
  }
}

```

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

## Anna's highest grade this semester is 100.