

RWorksheet_Lomibao#4a

lomibao

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1.A

```
shoe_heightdf <- 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,
shoe_heightdf
```

##	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

B.

```
male_subs<- subset(shoe_heightdf, Gender == "M", select = c(Gender, Shoe_size, Height))
male_subs
```

##	Gender	Shoe_size	Height
## 5	M	10.5	70.0
## 9	M	13.0	72.0
## 11	M	10.5	74.5

```
## 13      M      12.0    71.0
## 14      M      10.5    71.0
## 15      M      13.0    77.0
## 16      M      11.5    72.0
## 19      M      10.0    72.0
## 22      M       8.5    67.0
## 23      M      10.5    73.0
## 25      M      10.5    72.0
## 26      M      11.0    70.0
## 27      M       9.0    69.0
## 28      M      13.0    70.0
```

```
fem_subs<- subset(shoe_heightdf, Gender == "F", select = c(Gender, Shoe_size, Height))
fem_subs
```

```
##      Gender Shoe_size Height
## 1         F       6.5   66.0
## 2         F       9.0   68.0
## 3         F       8.5   64.5
## 4         F       8.5   65.0
## 6         F       7.0   64.0
## 7         F       9.5   70.0
## 8         F       9.0   71.0
## 10        F       7.5   64.0
## 12        F       8.5   67.0
## 17        F       8.5   59.0
## 18        F       5.0   62.0
## 20        F       6.5   66.0
## 21        F       7.5   64.0
## 24        F       8.5   69.0
```

C.

```
mean_of_respo <- sapply(shoe_heightdf[, c("Shoe_size","Height")], mean, na.rm = TRUE)
mean_of_respo
```

```
## Shoe_size      Height
##  9.410714 68.571429
```

D. Yes, Based on data the higher the person the larger the shoe size specially the male / "M" 2.

```
months_vector <- c("March","April","January","November","January","September","October","September","November")
factor_months_vector <- factor(months_vector)
factor_months_vector
```

```
## [1] March      April      January    November   January    September  October
## [8] September  Novemeber  August     Janaury    November   November   February
## [15] May        August     July       December   August     August     September
## [22] November   February   April
## 13 Levels: April August December February Janaury January July March ... September
```

3.

```
summary(months_vector)
```

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

```
summary(factor_months_vector)
```

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

4.

```
Direction <- c("East","West","North")
Frequency <- c(1,4,3)
factor_data <- Direction
new_order_data <- factor(factor_data,levels = c("East","West","North"))
print(new_order_data)
```

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

5.

```
Import_March <- read.table("/cloud/project/import_march - Sheet1.csv")
Import_March
```

```
##                                     V1
## 1 Students,Strategy1,Strategy2,Strategy3
## 2                                     Male,8,10,8
## 3                                     ,4,8,6
## 4                                     ,0,6,4
## 5                                     Female,14,4,15
## 6                                     ,10,2,12
## 7                                     ,6,0,9
```

6.

```
num <- as.integer(readline(prompt = "Enter a number between 1 to 50: "))
```

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

```
if(!is.na(num) && num == 20) {
  print("The number is beyond the range of 1 to 50 ")
}else{
  print("TRUE")
}
```

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

```
if(!is.na(num) && num>=1 && num<=50){
  num
}else{
  print("The number selected is beyond the range of 1 to 50.")
}
```

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

7.

```
price <- as.numeric(readline(prompt="Enter Price: "))
```

```
## Enter Price:
```

```

min_bills <- function(price) {
  bills_used <- 0

  if (!is.na(price) && price >= 1000) {
    bills_used <- bills_used + price %/% 1000
    price <- price %% 1000
  }
  4
  if (!is.na(price) && price >= 500) {
    bills_used <- bills_used + price %/% 500
    price <- price %% 500
  }
  if (!is.na(price) && price >= 200) {
    bills_used <- bills_used + price %/% 200
    price <- price %% 200
  }
  if (!is.na(price) && price >= 100) {
    bills_used <- bills_used + price %/% 100
    price <- price %% 100
  }
  if (!is.na(price) && price >= 50) {
    bills_used <- bills_used + price %/% 50
    price <- price %% 50
  }
  return(bills_used)
}
min_bills(price)

```

```
## [1] 0
```

8.A.

```
grade <- data.frame(Name = c("Annie", "Thea", "Steve", "Hanna"), Grade1 = c(85, 65, 75, 95), Grade2 = c(65, 75, 85, 90))
```

B.

```

avg_scores <- rowSums(grade[, -1]) / (ncol(grade) - 1)
if (any(avg_scores > 90)) {
  high_avg_names <- grade$Name[avg_scores > 90]
  high_avg_scores <- avg_scores[avg_scores > 90]
  cat(paste(high_avg_names, " average grade this semester is ", high_avg_scores, ".\n", sep = ""))
} else {
  cat("No student's average grade is over 90.\n")
}

```

```
## No student's average grade is over 90.
```

C.

```

test_avg <- colSums(grade[, -1]) / nrow(grade)
if (any(test_avg < 80)) {
  hard_tests <- which(test_avg < 80)
  cat(paste("The", hard_tests, "th test was difficult.\n"))
} else {
  cat("All tests had average scores of 80 or above.\n")
}

```

```
## The 2 th test was difficult.
```

D.

```
highest_scores <- apply(grade[,-1], 1, function(x) sort(x, decreasing = TRUE)[1])
if (any(highest_scores > 90)) {
  high_score_names <- grade$Name[highest_scores > 90]
  high_scores <- highest_scores[highest_scores > 90]
  cat(paste(high_score_names, "'s highest grade this semester is ", high_scores, ".\n"))
} else {
  cat("No student's highest grade exceeded 90.\n")
}
```

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

```
## Hanna 's highest grade this semester is 100 .
```