

RWorksheet_Caneso#4a

Rovel Jan Caneso

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Number 1

```
#[1.] Create a data frame.  
#   a. Describe the data.  
#       [Outputs a table for the data that is inside the data frame.]  
shoeDetails <- 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, 13.0, 11.5, 8.5),  
  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, 77.0, 70.0, 70.0),  
  Gender = c('F', 'F', 'F', 'F', 'M', 'F', 'F', 'F', 'M', 'F', 'M', 'F', 'M', 'M', 'M', 'M', 'F', 'F'),  
)  
shoeDetails
```

##	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. Create a subset by males and females with their corresponding shoe size and height.
# What its result? Show the R scripts.
male <- subset(shoeDetails, shoeDetails$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
## 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
```

```
female <- subset(shoeDetails, shoeDetails$Gender == "F")
female
```

```
##      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
```

```
# c. Find the mean of shoe size and height of the respondents. Write the R scripts and its
# result.
mean(shoeDetails$Shoe_size)
```

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

```
mean(shoeDetails$Height)
```

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

```
# d. Is there a relationship between shoe size and height? Why?
# [Yes, because the taller the person it is also the same with their shoe size,
# but not exactly all the time.]
```

Number 2

```
#[2.] Construct character vector months to a factor with factor() and assign the result to
# factor_months_vector. Print out factor_months_vector and assert that R prints out
# the factor levels below the actual values.
```

```
months <- 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")
months
```

```
## [1] "March"      "April"      "January"    "November"   "January"    "September"
## [7] "October"    "September"  "November"   "August"     "January"    "November"
## [13] "November"   "February"   "May"        "August"     "July"       "December"
## [19] "August"     "August"     "September"  "November"   "February"   "April"
```

```
factMonths <- factor(months)
factMonths
```

```
## [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
```

```
levels(factMonths)
```

```
## [1] "April"      "August"     "December"   "February"   "January"    "July"
## [7] "March"      "May"        "November"   "October"    "September"
```

Number 3

```
#[3.] Check the summary() of the months_vector and factor_months_vector. / Interpret
# the results of both vectors. Are they both equally useful in this case?
```

```
summary(months)
```

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

```
summary(factMonths)
```

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

```
# [The summary of the vector months only gives the length, class, and mode of the vector
# which is not that much useful, unlike the summary of the factored months which provides
# a detailed frequency count of each level in the factor, which is much more useful
# in understanding how often each month appears.]
```

Number 4

```
#[4.] Create a vector and factor for the table below.
direction <- c("East", "West", "North")
frequency <- c(1, 4, 3)
new_order_data <- factor(direction, levels = c("East", "West", "North"))
print(new_order_data)
```

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

Number 5

```
#[5.] Enter the data below in Excel with file name = import_march.csv
# a. Import the excel file into the Environment Pane using read.table() function.
# Write the code.
tableCSV <- read.table("import_march.csv", header = T, sep = ",")
# b. View the dataset. Write the R scripts and its result.
tableCSV
```

```
## Students Strategy.1 Strategy.2 Strategy3
## 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
```

Number 6

```
#[6.] Full Search
# a. Create an R Program
search <- function(input){
  if (input < 1 | input > 50){
    print("The number selected is beyond the range of 1 to 50")
  }else if (input == 20){
    print("TRUE")
  }else {
    print(input)
  }
}
input <- readline(prompt = "Select a number from 1 - 50: ")
```

```
## Select a number from 1 - 50:
```

```
search(input)
```

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