

Work Sheet 4

Neil Francis N. Navarro

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1. The table below shows the data about shoe size and height. Create a data frame..

library(dplyr) library(readr) library(data.table)

a. Describe the data.

```
Shoesize <- 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,
              13.0,11.5,8.5,5.0,10.0,
              6.5,7.5,8.5,10.5,8.5,10.5,11.0,9.0,13.0)

Height <- c(66.0,68.0,64.5,65.0,70.0,
            64.0,70.0,71.0,72.0,64.0,
            74.5,67.0,71.0,71.0,77.0,72.0,
            59.0,62.0,72.0,66.0,64.0,67.0,73.0,
            69.0,72.0,70.0,69.0,70)

Gender <- c("F","F","F","F","M","F","M","F","M",
            "M","M","F","M","M","M","M","F","F",
            "M","F","M","M","M","F","M","M","M")

data_frame <- data.frame(Shoesize,Height,Gender)
data_frame
```

##	Shoesize	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	M
## 8	9.0	71.0	F
## 9	13.0	72.0	M
## 10	7.5	64.0	M
## 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      M
## 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
```

Answer: The output will show a data base on what we put on each rows within the dataframe

b. Find the mean of shoe size and height of the respondents. Copy the codes and results.

- *Male*

```
Boy <- subset(data_frame, Gender == "M")
mean(Boy$Shoesize)
```

```
## [1] 10.47059
```

```
mean(Boy$Height)
```

```
## [1] 70.5
```

- *Female*

```
Girl <- subset(data_frame, Gender == "F")
mean(Girl$Shoesize)
```

```
## [1] 7.772727
```

```
mean(Girl$Height)
```

```
## [1] 65.59091
```

c. Is there a relationship between shoe size and height? Why?

Yes, The Higher the value of height, the greater value of the Shoesize. and the factor levels below are the actual values.

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_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_Month_Vector <- factor(Months_Vector)
Factor_Month_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. Then check the `summary()` of the `Months_Vector_vector` and `Factor_Month_Vector_vector`. Interpret the results of both vectors. Are they both equally useful in this case?

```
summary(Months_Vector)
summary(Factor_Month_Vector)
```

Answer: For me Yes, as for the `months_vector` it shows the number of months and its class and mode, while the `factor_Month_Vector` the month has been factor by level and alphabetical and it show the number of each months.

4. Create a vector and factor for the table below.

```
factorData <- data.frame(
  Direction = c("East", "West", "North"),
  Frequency = c(1, 4, 3)
)
factorData
```

```
##   Direction Frequency
## 1      East         1
## 2      West         4
## 3     North         3
```

```
newOrderData <- factor(factorData, levels = c("East", "West", "North"))
print(newOrderData)
```

```
## Direction Frequency
##      <NA>      <NA>
## Levels: East West North
```

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.

```
library(readr)
import_march <- read.table("import.march.csv")
View(import_march)
```

b. View the dataset. Write the code and its result.

```
import_march
```

Result

A tibble: 101 × 12

...1 ...2 ...3 ...4 ...5 ...6 ...7 ...8 ...9 ...10 ...11 ...12

1 NA Sepal Length (cm) Sepal Width (cm) Petal Length (... Peta... Class NA NA alpha obj NA NA

2 NA 7 3.2 4.7 1.4 Iris... NA 0 0 0 0 1

3 NA 6.4 3.2 4.5 1.5 Iris... NA 0 NA NA 0 1

4 NA 6.9 3.1 4.9 1.5 Iris... NA 0 NA NA 0 1

5 NA 5.5 2.3 4 1.3 Iris... NA 0 NA NA 0 1

6 NA 6.5 2.8 4.6 1.5 Iris... NA NA NA NA 0 1

7 NA 5.7 2.8 4.5 1.3 Iris... NA NA NA NA 0 1

8 NA 6.3 3.3 4.7 1.6 Iris... NA NA NA NA 0 1

9 NA 4.9 2.4 3.3 1 Iris... NA NA NA NA 0 1

10 NA 6.6 2.9 4.6 1.3 Iris... NA NA NA NA 0 1