

# RWorksheet\_Songaling#3b

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*#1. Create a data frame using the table below.*

*#a. Write the codes.*

```
household_data <- data.frame(  
  Respondents =c(1:20),  
  Sex = c("Female","Female","Male","Female","Female","Female","Female","Female","Female","Female","Female","Male",  
  
  Fathers_Occupation = c("Farmer","Others","Others","Others","Farmer","Driver","Others","Farmer","Farmer",  
  
  Persons_at_home = c(5,7,3,8,5,9,6,7,8,4,7,5,4,7,8,8,3,11,7,6),  
  
  Siblings_at_school = c(6,4,4,1,2,1,5,3,1,2,3,2,5,5,2,1,2,5,3,2),  
  
  Types_of_houses = c("Wood","Semi-Concrete","Concrete","Wood","Wood","Concrete","Concrete","Wood","Semi-  
)  
household_data
```

##	Respondents	Sex	Fathers_Occupation	Persons_at_home	Siblings_at_school
## 1	1	Female	Farmer	5	6
## 2	2	Female	Others	7	4
## 3	3	Male	Others	3	4
## 4	4	Female	Others	8	1
## 5	5	Female	Farmer	5	2
## 6	6	Female	Driver	9	1
## 7	7	Female	Others	6	5
## 8	8	Female	Farmer	7	3
## 9	9	Female	Farmer	8	1
## 10	10	Female	Farmer	4	2
## 11	11	Male	Others	7	3
## 12	12	Female	Driver	5	2
## 13	13	Female	Farmer	4	5
## 14	14	Female	Others	7	5
## 15	15	Female	Others	8	2
## 16	16	Female	Farmer	8	1
## 17	17	Female	Others	3	2
## 18	18	Female	Farmer	11	5
## 19	19	Male	Driver	7	3
## 20	20	Female	Farmer	6	2
##	Types_of_houses				
## 1	Wood				
## 2	Semi-Concrete				
## 3	Concrete				
## 4	Wood				

```
## 5      Wood
## 6      Concrete
## 7      Concrete
## 8      Wood
## 9      Semi-Concrete
## 10     Concrete
## 11     Semi-Concrete
## 12     Concrete
## 13     Semi-Concrete
## 14     Semi-Concrete
## 15     Concrete
## 16     Concrete
## 17     Concrete
## 18     Concrete
## 19     Concrete
## 20     Semi-Concrete
```

*#b. Describe the data. Get the structure or the summary of the data*  
`summary(household_data)`

```
## Respondents      Sex      Fathers_Occupation Persons_at_home
## Min.   : 1.00   Length:20   Length:20      Min.   : 3.0
## 1st Qu.: 5.75   Class :character Class :character 1st Qu.: 5.0
## Median :10.50   Mode  :character Mode  :character Median : 7.0
## Mean   :10.50                                     Mean   : 6.4
## 3rd Qu.:15.25                                     3rd Qu.: 8.0
## Max.    :20.00                                     Max.    :11.0
## Siblings_at_school Types_of_houses
## Min.   :1.00     Length:20
## 1st Qu.:2.00     Class :character
## Median :2.50     Mode  :character
## Mean   :2.95
## 3rd Qu.:4.25
## Max.    :6.00
```

*#c. Is the mean number of siblings attending is 5?*  
`mean_siblings <- mean(household_data$Siblings_at_school)`  
`is_mean_5 <- mean_siblings == 5`  
`print(is_mean_5)`

```
## [1] FALSE
```

*#The answer is no because the mean number is 2.95.*

*#d. Extract the 1st two rows and then all the columns using the subsetting functions. Write the codes a*  
`first_two_rows_all_columns <- household_data[1:2, ]`  
`print(first_two_rows_all_columns)`

```
## Respondents      Sex Fathers_Occupation Persons_at_home Siblings_at_school
## 1      1 Female      Farmer              5              6
## 2      2 Female      Others              7              4
## Types_of_houses
## 1      Wood
## 2      Semi-Concrete
```

*#It shows the data in 1st two rows and the columns in those rows.*

```
#e. Extract 3rd and 5th row with 2nd and 4th column. Write the codes and its result.
selected_rows_columns <- household_data[c(3, 5), c(2, 4)]
print(selected_rows_columns)
```

```
##      Sex Persons_at_home
## 3   Male              3
## 5 Female              5
```

*#The output is the data in the 3rd and 5th row with the 2nd and 4th column.*

```
#f. Select the variable types of houses then store the vector that results as types_houses. Write the c
types_houses <- household_data$Types_of_houses
print(types_houses)
```

```
## [1] "Wood"          "Semi-Concrete" "Concrete"      "Wood"
## [5] "Wood"          "Concrete"      "Concrete"      "Wood"
## [9] "Semi-Concrete" "Concrete"      "Semi-Concrete" "Concrete"
## [13] "Semi-Concrete" "Semi-Concrete" "Concrete"      "Concrete"
## [17] "Concrete"      "Concrete"      "Concrete"      "Semi-Concrete"
```

```
#g. Select only all Males respondent that their father occupation was farmer. Write the codes and its o
males_farmers <- household_data[household_data$Sex == "Male" & household_data$Fathers_Occupation == "Farmer"]
print(males_farmers)
```

```
## [1] Respondents      Sex      Fathers_Occupation Persons_at_home
## [5] Siblings_at_school Types_of_houses
## <0 rows> (or 0-length row.names)
```

*#The output is empty because there is no male with a father whose occupation is farmer.*

```
#h. Select only all females respondent that have greater than or equal to 5 number of siblings attending school.
females_greater_than_5_siblings <- household_data[household_data$Sex == "Female" & household_data$Siblings_at_school >= 5]
print(females_greater_than_5_siblings)
```

```
##      Respondents      Sex Fathers_Occupation Persons_at_home Siblings_at_school
## 1              1 Female      Farmer              5              6
## 7              7 Female      Others              6              5
## 13             13 Female      Farmer              4              5
## 14             14 Female      Others              7              5
## 18             18 Female      Farmer             11              5
##      Types_of_houses
## 1              Wood
## 7              Concrete
## 13      Semi-Concrete
## 14      Semi-Concrete
## 18              Concrete
```

*#The output is the data of all female respondents that have 5 or more siblings attending school.*

```
#2. Write a R program to create an empty data frame. Using the following codes:
df = data.frame(
  Ints=integer(),
  Doubles=double(), Characters=character(),
  Logicals=logical(),
  Factors=factor(),
  stringsAsFactors=FALSE)
print("Structure of the empty dataframe:")
```

```
## [1] "Structure of the empty dataframe:"
```

```
print(str(df))
```

```
## 'data.frame':    0 obs. of  5 variables:
## $ Ints      : int
## $ Doubles   : num
## $ Characters: chr
## $ Logicals  : logi
## $ Factors   : Factor w/ 0 levels:
## NULL
```

*#a. Describe the results.*

*#The data frame is empty because no data has been added yet.*

*#3. Create a .csv file of this. Save it as HouseholdData.csv*

```
write.csv(household_data, file = "HouseholdData.csv", row.names = FALSE)
```

*#a. Import the csv file into the R environment. Write the codes.*

```
imported_data <- read.csv("HouseholdData.csv")
```

*#b. Convert the Sex into factor using factor() function and change it into integer. [Legend: Male = 1 and*

```
imported_data$Sex <- factor(imported_data$Sex, levels = c("Male", "Female"))
```

```
imported_data$Sex <- as.integer(imported_data$Sex)
```

*#c. Convert the Type of Houses into factor and change it into integer. [Legend: Wood = 1; Concrete = 2;*

```
imported_data$Types_of_houses <- factor(imported_data$Types_of_houses, levels = c("Wood", "Concrete", "Other"))
```

```
imported_data$Types_of_houses <- as.integer(imported_data$Types_of_houses)
```

*#d. On father's occupation, factor it as Farmer = 1; Driver = 2; and Others = 3. What is the R code and*

```
imported_data$Fathers_Occupation <- factor(imported_data$Fathers_Occupation, levels = c("Farmer", "Driver", "Others"))
```

```
imported_data$Fathers_Occupation <- as.integer(imported_data$Fathers_Occupation)
```

*#e. Select only all females respondent that has a father whose occupation is driver. Write the codes and*

```
female_drivers <- imported_data[imported_data$Sex == 2 & imported_data$Fathers_Occupation == 2, ]
```

```
print(female_drivers)
```

```
##   Respondents Sex Fathers_Occupation Persons_at_home Siblings_at_school
## 6             6  2                   2               9                 1
## 12            12  2                   2               5                 2
##   Types_of_houses
## 6                 2
## 12                2
```

*#The output is the data of all the female respondent that has a father whose occupation is a driver but*

*#f. Select the respondents that have greater than or equal to 5 number of siblings attending school. Write the codes and*

```
greater_than_5_siblings <- imported_data[imported_data$Siblings_at_school >= 5, ]
```

```
print(greater_than_5_siblings)
```

```
##   Respondents Sex Fathers_Occupation Persons_at_home Siblings_at_school
## 1             1  2                   1               5                 6
## 7             7  2                   3               6                 5
## 13            13  2                   1               4                 5
## 14            14  2                   3               7                 5
## 18            18  2                   1              11                 5
```

```
##      Types_of_houses
## 1              1
## 7              2
## 13             3
## 14             3
## 18             2
```

*#The output is the data of all the respondents that have greater than or equal to 5 number of siblings*

*#4. Interpret the graph.*

*# The graph in figure 3 shows the sentiments of people when tweeting during July 14 until July 21, 2020*