RWorksheet_Calambro#3b

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1. Create a data frame using the table below.

a. Write the codes.

```
table <- data.frame(
  Respondents = c(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20),
  Sex = c(2, 2, 1, 2, 2, 2, 2, 2, 2, 2, 1, 2, 2, 2, 2, 2, 2, 2, 1, 2),
  Fathers_Occupation = c(1, 3, 3, 3, 1, 2, 3, 1, 1, 1, 3, 2, 1, 3, 3, 1, 3, 1, 2, 1),
  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(1, 2, 3, 1, 1, 3, 3, 1, 2, 3, 2, 3, 2, 2, 3, 3, 3, 3, 3, 2)
)

table
```

```
##    Respondents Sex Fathers_Occupation Persons_at_Home Siblings_at_school
## 1            1   2                  1              5                   6
## 2            2   2                  3              7                   4
## 3            3   1                  3              3                   4
## 4            4   2                  3              8                   1
## 5            5   2                  1              5                   2
## 6            6   2                  2              9                   1
## 7            7   2                  3              6                   5
## 8            8   2                  1              7                   3
## 9            9   2                  1              8                   1
## 10          10   2                  1              4                   2
## 11          11   1                  3              7                   3
## 12          12   2                  2              5                   2
## 13          13   2                  1              4                   5
## 14          14   2                  3              7                   5
## 15          15   2                  3              8                   2
## 16          16   2                  1              8                   1
## 17          17   2                  3              3                   2
## 18          18   2                  1             11                   5
## 19          19   1                  2              7                   3
## 20          20   2                  1              6                   2
##    Types_of_houses
## 1                1
## 2                2
## 3                3
## 4                1
## 5                1
## 6                3
## 7                3
```

```
## 8                1
## 9                2
## 10               3
## 11               2
## 12               3
## 13               2
## 14               2
## 15               3
## 16               3
## 17               3
## 18               3
## 19               3
## 20               2
```

b. Describe the data. Get the structure or the summary of the data

```
str(table)
```

```
## 'data.frame':    20 obs. of  6 variables:
##  $ Respondents       : num  1 2 3 4 5 6 7 8 9 10 ...
##  $ Sex               : num  2 2 1 2 2 2 2 2 2 2 ...
##  $ Fathers_Occupation: num  1 3 3 3 1 2 3 1 1 1 ...
##  $ Persons_at_Home   : num  5 7 3 8 5 9 6 7 8 4 ...
##  $ Siblings_at_school: num  6 4 4 1 2 1 5 3 1 2 ...
##  $ Types_of_houses   : num  1 2 3 1 1 3 3 1 2 3 ...
```

```
summary(table)
```

```
##   Respondents          Sex       Fathers_Occupation Persons_at_Home
##  Min.   : 1.00   Min.   :1.00   Min.   :1.00       Min.   : 3.0
##  1st Qu.: 5.75   1st Qu.:2.00   1st Qu.:1.00       1st Qu.: 5.0
##  Median :10.50   Median :2.00   Median :2.00       Median : 7.0
##  Mean   :10.50   Mean   :1.85   Mean   :1.95       Mean   : 6.4
##  3rd Qu.:15.25   3rd Qu.:2.00   3rd Qu.:3.00       3rd Qu.: 8.0
##  Max.   :20.00   Max.   :2.00   Max.   :3.00       Max.   :11.0
##  Siblings_at_school Types_of_houses
##  Min.   :1.00       Min.   :1.0
##  1st Qu.:2.00       1st Qu.:2.0
##  Median :2.50       Median :2.5
##  Mean   :2.95       Mean   :2.3
##  3rd Qu.:4.25       3rd Qu.:3.0
##  Max.   :6.00       Max.   :3.0
```

c. Is the mean number of siblings attending is 5?

- No, because the mean of Siblings at school is only 2.95.

d. Extract the 1st two rows and then all the columns using the subsetting functions. Write the codes and its output.

```
subset_data <- table[1:2, ]

subset_data
```

```
##   Respondents Sex Fathers_Occupation Persons_at_Home Siblings_at_school
## 1           1   2                  1               5                  6
## 2           2   2                  3               7                  4
##   Types_of_houses
```

```
## 1               1
## 2               2
```

e. Extract 3rd and 5th row with 2nd and 4th column. Write the codes and its result.

```
subset_data <- table[c(3, 5), c(2, 4)]

subset_data
```

```
##   Sex Persons_at_Home
## 3   1               3
## 5   2               5
```

f. Select the variable types of houses then store the vector that results as types_houses. Write the codes.

```
types_houses <- table$Types_of_houses[c(1:20)]

types_houses
```

```
##  [1] 1 2 3 1 1 3 3 1 2 3 2 3 2 2 3 3 3 3 3 2
```

g. Select only all Males respondent that their father occupation was farmer. Write the codes and its output.

```
respondents <- subset(table, Sex == "1" &Fathers_Occupation == "1")

respondents
```

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

h. Select only all females respondent that have greater than or equal to 5 number of siblings attending school. Write the codes and its outputs.

```
female_respondents <- subset(table, Sex == "2" & Siblings_at_school >= 5)

female_respondents
```

```
##    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                3
## 13               2
## 14               2
## 18               3
```

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.

df is set up with the desired column types, but it contains no data at this moment.

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

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

```
household <- read.csv("HouseholdData.csv", stringsAsFactors = FALSE)

household
```

```
##    Respondents    Sex Fathers.Occupation Persons.at.Home Siblings.at.School
## 1            1   Male                  1               5                  2
## 2            2 Female                  2               7                  3
## 3            3 Female                  3               3                  0
## 4            4   Male                  3               8                  5
## 5            5   Male                  1               6                  2
## 6            6 Female                  2               4                  3
## 7            7 Female                  2               4                  1
## 8            8   Male                  3               2                  2
## 9            9 Female                  1              11                  6
## 10          10   Male                  3               6                  2
##    Types.of.Houses
## 1             Wood
## 2         Congrete
## 3         Congrete
## 4             Wood
## 5    Semi-Congrete
## 6    Semi-Congrete
## 7             Wood
## 8    Semi-Congrete
## 9    Semi-Congrete
## 10        Congrete
```

b. Convert the Sex into factor using factor() function and change it into integer.[Legend: Male = 1 and Female = 2]. Write the R codes and its output.

```
household$Sex <- factor(household$Sex, levels = c("Male", "Female"), labels = c(1, 2))

household$Sex <- as.integer(household$Sex)

household
```

```
##    Respondents Sex Fathers.Occupation Persons.at.Home Siblings.at.School
## 1            1   1                  1               5                  2
## 2            2   2                  2               7                  3
## 3            3   2                  3               3                  0
## 4            4   1                  3               8                  5
## 5            5   1                  1               6                  2
## 6            6   2                  2               4                  3
## 7            7   2                  2               4                  1
## 8            8   1                  3               2                  2
## 9            9   2                  1              11                  6
## 10          10   1                  3               6                  2
##    Types.of.Houses
## 1             Wood
## 2         Congrete
## 3         Congrete
## 4             Wood
## 5    Semi-Congrete
## 6    Semi-Congrete
## 7             Wood
## 8    Semi-Congrete
## 9    Semi-Congrete
## 10        Congrete
```

c. Convert the Type of Houses into factor and change it into integer. [Legend: Wood = 1; Congrete = 2; Semi-Congrete = 3;]. Write the R codes and its output.

```
household$Types.of.Houses <- factor(household$Types.of.Houses, levels = c("Wood", "Congrete", "Semi-cong

household$Types.of.Houses <- as.integer(household$Types.of.Houses)

household
```

```
##    Respondents Sex Fathers.Occupation Persons.at.Home Siblings.at.School
## 1            1   1                  1               5                  2
## 2            2   2                  2               7                  3
## 3            3   2                  3               3                  0
## 4            4   1                  3               8                  5
## 5            5   1                  1               6                  2
## 6            6   2                  2               4                  3
## 7            7   2                  2               4                  1
## 8            8   1                  3               2                  2
## 9            9   2                  1              11                  6
## 10          10   1                  3               6                  2
##    Types.of.Houses
## 1                1
## 2                2
## 3                2
## 4                1
## 5               NA
## 6               NA
## 7                1
## 8               NA
## 9               NA
## 10               2
```