Worksheet_3b

Jason Lloyd C. Mijares

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No. 1

```
## a.

Census <- data.frame(
  Respondents = c(1:20),
  Sex = c(2,2,1,2,2,2,2,2,2,1,2,2,2,2,2,2, 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),
  PersonsAtHome = c(5, 7, 3, 8, 5, 9, 6, 7, 8, 4, 7, 5, 4, 7, 8, 8, 3, 11, 7, 6),
  SiblingsAtSchool = c(6, 4, 4, 1, 2, 1, 5, 3, 1, 2, 3, 2, 5, 5, 2, 1, 2, 5, 3, 2),
  TypesOfHouses = c(1, 2, 3, 1, 1, 3, 3, 1, 2, 3, 2, 3, 2, 2, 3, 3, 3, 3, 3, 2)
)

Census
```

```
##    Respondents Sex Fathers_Occupation PersonsAtHome SiblingsAtSchool
## 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
##    TypesOfHouses
## 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.
## It contains information about 20 respondents with 6 variables: Respondents, Sex, Fathers Occupataion
## Persons at Home, Siblings at school, Types of houses

str(Census)
```

```
## 'data.frame':    20 obs. of  6 variables:
##  $ Respondents       : int  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 ...
##  $ PersonsAtHome     : num  5 7 3 8 5 9 6 7 8 4 ...
##  $ SiblingsAtSchool  : num  6 4 4 1 2 1 5 3 1 2 ...
##  $ TypesOfHouses     : num  1 2 3 1 1 3 3 1 2 3 ...
```

```
summary(Census)
```

```
##   Respondents          Sex       Fathers_Occupation PersonsAtHome
##  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
##  SiblingsAtSchool TypesOfHouses
##  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.

siblingMean <- mean(Census$SiblingsAtSchool)

siblingMean
```

```
## [1] 2.95
```

```
## Is the mean number of siblings attending is 5? No, it is 2.95
```

```
## d.

subset_Census1To2 <- subset(Census, Respondents <= 2)

subset_Census1To2
```

```
##   Respondents Sex Fathers_Occupation PersonsAtHome SiblingsAtSchool
## 1           1   2                  1             5                6
## 2           2   2                  3             7                4
##   TypesOfHouses
## 1             1
## 2             2
```

```
## e.

Census3and5 <- Census[c(3,5),c(2,4)]

Census3and5
```

```
##   Sex PersonsAtHome
## 3   1             3
## 5   2             5
```

```
## f.

types_houses <- Census$TypesOfHouses

types_houses
```

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

```
## g.

male_farmer <- Census[Census$Sex == 1 & Census$Fathers_Occupation,]

male_farmer
```

```
##    Respondents Sex Fathers_Occupation PersonsAtHome SiblingsAtSchool
## 3            3   1                  3             3                4
## 11          11   1                  3             7                3
## 19          19   1                  2             7                3
##    TypesOfHouses
## 3              3
## 11             2
## 19             3
```

```
## h.

female_siblings <- Census[Census$Sex == 2 & Census$SiblingsAtSchool >=5,]

female_siblings
```

```
##    Respondents Sex Fathers_Occupation PersonsAtHome SiblingsAtSchool
## 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
##    TypesOfHouses
## 1              1
## 7              3
## 13             2
## 14             2
## 18             3
```

No. 2

```
df = data.frame(Ints=integer(), Doubles=double(), Characters=character(), Logicals=logical(), Factors=fa

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.

## The result describes and empty data frame with 0 observations and 5 variables.
## Every variable has a specific type also.
```

No. 3

```
## a.

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

```
##    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.

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

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

householdData
```

```
##    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.

householdData$Types_of_Houses <- factor(householdData$Types_of_Houses, levels = c("Wood", "Congrete", "

householdData$Types_of_Houses <- as.integer(householdData$Types_of_Houses)

householdData
```

```
##    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                3
## 6                3
## 7                1
## 8                3
## 9                3
## 10               2
```

```
## d.

householdData$Fathers_Occupatio <- factor(householdData$Fathers_Occupation, levels = c(1, 2, 3), labels

householdData
```

```
##    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 Fathers_Occupatio
## 1                1            Farmer
## 2                2            Driver
## 3                2            Others
## 4                1            Others
## 5                3            Farmer
## 6                3            Driver
## 7                1            Driver
## 8                3            Others
## 9                3            Farmer
## 10               2            Others
```

```
## e.
femaleDriverFather <- householdData[householdData$Sex == 2 & householdData$Fathers_Occupation == 2,]

femaleDriverFather
```

```
##   Respondents Sex Fathers_Occupation Persons_at_Home Siblings_at_School
## 2           2   2                  2               7                  3
## 6           6   2                  2               4                  3
## 7           7   2                  2               4                  1
##   Types_of_Houses Fathers_Occupatio
## 2               2            Driver
## 6               3            Driver
## 7               1            Driver
```

```r
## f.

householdFemaleAndFather <- householdData[householdData$Siblings_at_School >= 5,]

householdFemaleAndFather
```

```
##   Respondents Sex Fathers_Occupation Persons_at_Home Siblings_at_School
## 4           4   1                  3              8                  5
## 9           9   2                  1             11                  6
##   Types_of_Houses Fathers_Occupatio
## 4               1            Others
## 9               3            Farmer
```

No. 4

```r
## The bar chart visualizes Sentiments Of Tweets per day, with the legends:
## Negative(Red), Neutral(Orange), Positive(Blue).

## Negative sentiment is the highest among the three sentiments,
## showing that a lot of tweets has a negative tone,
## and it has the highest tweet counts. Peaks occur on July 15 and July 21 indicating
## increased activity during these days are significant.

## Positive sentiments is second to negative sentiment in terms of its count ## and maintains a moderat

## Neutral sentiment is the lowest, meaning that tweets in this category is minimal.

## Overall, the graph shows that most tweets are composed of negative sentiments,
## followed by positive, with neutral sentiments being the least frequent.

## It also suggests that users may tend to express more negative sentiments compared to positive ones.
```