

RWorksheet_Fermano#3b

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R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(cars)
```

```
##      speed      dist
##  Min.   : 4.0    Min.   :  2.00
## 1st Qu.:12.0    1st Qu.: 26.00
## Median :15.0    Median : 36.00
## Mean   :15.4    Mean   : 42.98
## 3rd Qu.:19.0    3rd Qu.: 56.00
## Max.   :25.0    Max.   :120.00
```

Including Plots

You can also embed plots, for example:



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

#1. Create a data frame using the table below

#1a.

```
household_data <- data.frame(  
  Respond_1 = c(1:20),  
  
  Sex = c("Female","Female","Male","Female","Female","Female","Female","Female","Female","Female","Male",  
  
  FatherOccupation = c("Farmer","Others","Others","Others","Farmer","Driver","Others","Farmer","Farmer",  
  
  PersonatHome = 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),  
  
  Typeshouse = c("Wood","Semi-Concrete","Concrete","Wood","Wood","Concrete","Concrete","Wood","Semi-Con  
)  
household_data
```

| ## | Respond_1 | Sex | FatherOccupation | PersonatHome | Siblingsatschool |
|-------|---------------|--------|------------------|--------------|------------------|
| ## 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 |
| ## | Typeshouse | | | | |
| ## 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

#1b.

summary(household_data)

#1c.
mean_siblings <- mean(household_data$Siblingsatschool)
is_mean_5 <- mean_siblings == 5
print(is_mean_5)

#No because the mean is 2.95

#1d.

first_two_rows_all_columns <- household_data[1:2, ]
print(first_two_rows_all_columns)

#1e.

selected_rows_columns <- household_data[c(3, 5), c(2, 4)]
print(selected_rows_columns)

#1f.
types_houses <- household_data$Typeshouse

#1g.
male_farmers <- household_data[household_data$Sex == "Male" & household_data$FatherOccupation == "Farmer"]
print(male_farmers)

#1h.

female_greater_than_5_siblings <- household_data[household_data$Sex == "Female" & household_data$Siblings > 5]
print(female_greater_than_5_siblings)

#2

df <- data.frame(
  Ints = integer(0),
  Doubles = double(0),
  Characters = character(0),
  Logicals = logical(0),
  Factors = factor(NA, levels = character(0)),
  stringsAsFactors = FALSE
)

print("Structure of the empty dataframe:")
str(df)

#2a. The data frame has no data.

```

```
#3
```

```
household_data <- data.frame(  
  Respondents = c(1:10),  
  Sex = c("Male", "Female", "Female", "Male", "Male", "Female", "Female", "Male", "Female", "Male"),  
  FatherOccupation = c(1, 2, 3, 3, 1, 2, 2, 3, 1, 3),  
  PersonatHome = c(5, 7, 3, 8, 6, 4, 4, 2, 11, 6),  
  Siblingsatschool = c(2, 3, 0, 5, 2, 3, 1, 2, 6, 2),  
  Typeshouse = c("Wood", "Congrete", "Congrete", "Wood", "Semi-Congrete", "Semi-Congrete", "Wood", "Semi-Congrete", "Wood", "Semi-Congrete"),  
)  
household_data
```

```
#3a.
```

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

```
#3b.
```

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

```
#3b.(2)
```

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

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

```
#3c.
```

```
imported_data$Typeshouse <- factor(imported_data$Typeshouse, levels = c("Wood", "Concrete", "Semi-Concrete"))
```

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

```
#3d.
```

```
imported_data$FatherOccupation <- factor(imported_data$FatherOccupation, levels = c("Farmer", "Driver", "Other"))
```

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

```
#3e.
```

```
female_drivers <- imported_data[imported_data$Sex == 2 & imported_data$FatherOccupation == 2, ]  
print(female_drivers)
```

```
#3f.
```

```
greater_than_5_siblings <- imported_data[imported_data$Siblingsatschool >= 5, ]  
print(greater_than_5_siblings)
```

```
#4. Interpret the graph
```

Figure 3's graph illustrates how daily attitudes of people affect our world in significant ways. In other words, the graph shows the relationship between various factors and their impact on the world.