ACADGILD

SESSION 6: Visualization & Plotting

Assignment 1

PROBLEM STATEMENT

1. **Import the Titanic Dataset from the following link:**

   https://drive.google.com/file/d/1JTJCjdGuUxzKXYlwOavwovB01k6FWg3r/view?ts=5b42ea10

   Perform the below operations:

   a. **Pre-process the passenger names to come up with a list of titles that represent families and represent using appropriate visualization graph.**

SOLUTION :

1. **The R-script for the given problem is as follows:**

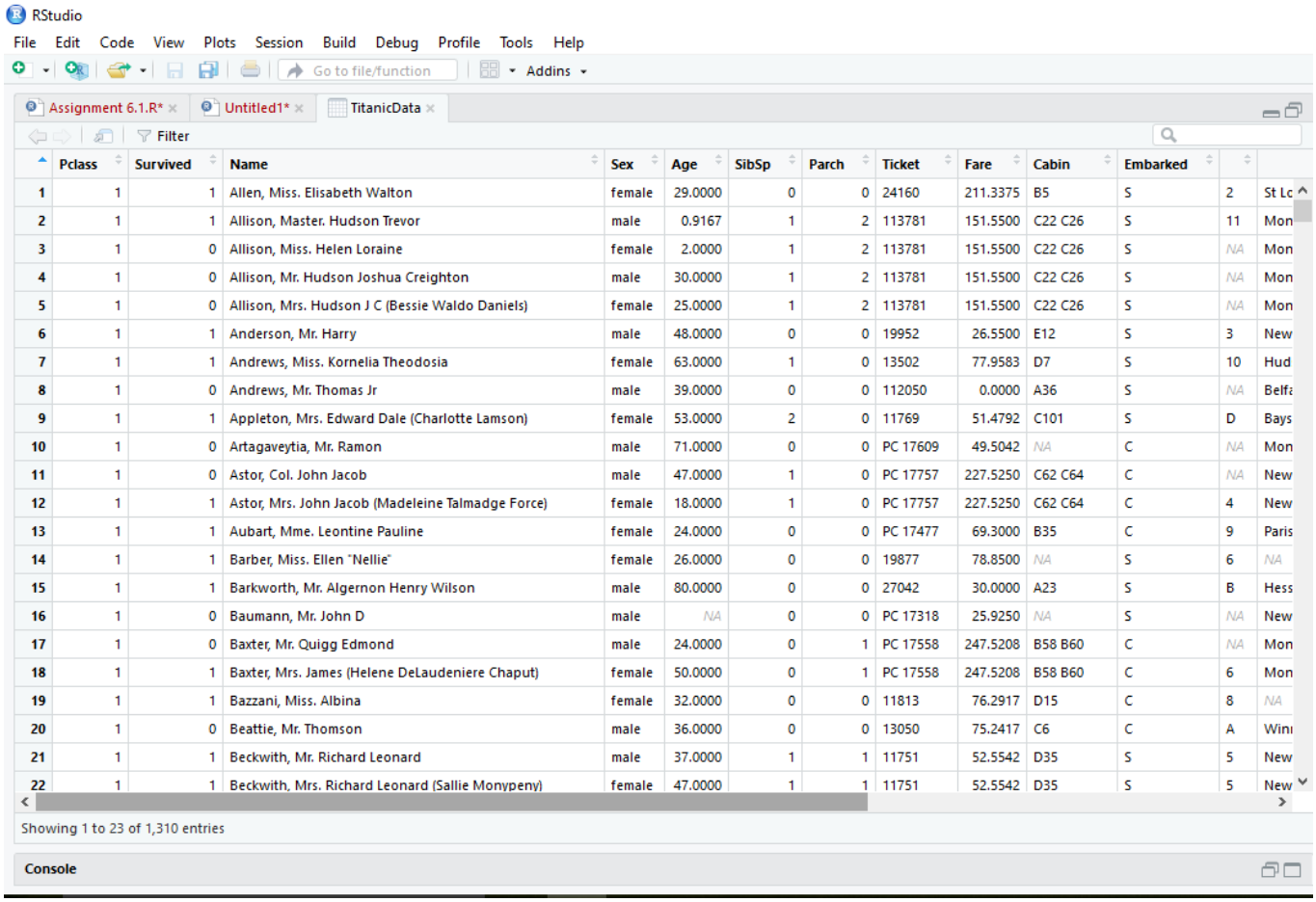
```
library("readr")
# Import Data Set ; Titanic
TitanicData <- read_csv("F:/ACADGILD - Online Course/1. DATA SETS/titanic3.csv")
View(TitanicData)
str(TitanicData)


psych::describe(TitanicData)


colnames(TitanicData) <-
c("Pclass","Survived","Name","Sex","Age","SibSp","Parch","Ticket","Fare",
                    "Cabin","Embarked")


TitanicData <- TitanicData[,-13]


#a.  Preprocess the passenger names to come up with a list of titles
# that represent families and
# represent using appropriate visualization graph


# Convert Name as character
```

```
TitanicData$Name <- as.character(TitanicData$Name)

# Extract the title from passenger names
TitanicData$SubTitle <- gsub("\\..*", "", TitanicData$Name)
TitanicData$Title <- gsub(".*\\ ", "", TitanicData$SubTitle)

table(TitanicData$Title)  # Count of Titles

# Plot a bar-graph showing Number of Passengers by Title

Title <- barplot(table(TitanicData$Title),
                 main = "No. of Passangers by Title", xlab = "Title",
                 ylab = "No. of Passangers", col = "Blue")
text(Title, 0,table(TitanicData$Title), pos = 3, srt = 90)
```

The output of the R-Script (from Console window) is given as follows:

```
> library("readr")
> # Import Data Set ; Titanic
> TitanicData <- read_csv("F:/ACADGILD - Online Course/1. DATA SETS/t
itanic3.csv")
Parsed with column specification:
cols(
  pclass = col_double(),
  survived = col_double(),
  name = col_character(),
  sex = col_character(),
  age = col_double(),
  sibsp = col_double(),
  parch = col_double(),
  ticket = col_character(),
  fare = col_double(),
  cabin = col_character(),
  embarked = col_character(),
  boat = col_character(),
  body = col_double(),
  home.dest = col_character()
)
```

```
> View(TitanicData)
```



	Pclass	Survived	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked		
1	1	1	Allen, Miss. Elisabeth Walton	female	29.0000	0	0	24160	211.3375	B5	S	2	St Lc
2	1	1	Allison, Master. Hudson Trevor	male	0.9167	1	2	113781	151.5500	C22 C26	S	11	Mon
3	1	0	Allison, Miss. Helen Loraine	female	2.0000	1	2	113781	151.5500	C22 C26	S	NA	Mon
4	1	0	Allison, Mr. Hudson Joshua Creighton	male	30.0000	1	2	113781	151.5500	C22 C26	S	NA	Mon
5	1	0	Allison, Mrs. Hudson J C (Bessie Waldo Daniels)	female	25.0000	1	2	113781	151.5500	C22 C26	S	NA	Mon
6	1	1	Anderson, Mr. Harry	male	48.0000	0	0	19952	26.5500	E12	S	3	New
7	1	1	Andrews, Miss. Kornelia Theodosia	female	63.0000	1	0	13502	77.9583	D7	S	10	Hud
8	1	0	Andrews, Mr. Thomas Jr	male	39.0000	0	0	112050	0.0000	A36	S	NA	Belfa
9	1	1	Appleton, Mrs. Edward Dale (Charlotte Lamson)	female	53.0000	2	0	11769	51.4792	C101	S	D	Bays
10	1	0	Artagaveytia, Mr. Ramon	male	71.0000	0	0	PC 17609	49.5042	NA	C	NA	Mon
11	1	0	Astor, Col. John Jacob	male	47.0000	1	0	PC 17757	227.5250	C62 C64	C	NA	New
12	1	1	Astor, Mrs. John Jacob (Madeleine Talmadge Force)	female	18.0000	1	0	PC 17757	227.5250	C62 C64	C	4	New
13	1	1	Aubart, Mme. Leontine Pauline	female	24.0000	0	0	PC 17477	69.3000	B35	C	9	Paris
14	1	1	Barber, Miss. Ellen "Nellie"	female	26.0000	0	0	19877	78.8500	NA	S	6	NA
15	1	1	Barkworth, Mr. Algernon Henry Wilson	male	80.0000	0	0	27042	30.0000	A23	S	B	Hess
16	1	0	Baumann, Mr. John D	male	NA	0	0	PC 17318	25.9250	NA	S	NA	New
17	1	0	Baxter, Mr. Quigg Edmond	male	24.0000	0	1	PC 17558	247.5208	B58 B60	C	NA	Mon
18	1	1	Baxter, Mrs. James (Helene DeLaudeniere Chaput)	female	50.0000	0	1	PC 17558	247.5208	B58 B60	C	6	Mon
19	1	1	Bazzani, Miss. Albina	female	32.0000	0	0	11813	76.2917	D15	C	8	NA
20	1	0	Beattie, Mr. Thomson	male	36.0000	0	0	13050	75.2417	C6	C	A	Winı
21	1	1	Beckwith, Mr. Richard Leonard	male	37.0000	1	1	11751	52.5542	D35	S	5	New
22	1	1	Beckwith, Mrs. Richard Leonard (Sallie Monypeny)	female	47.0000	1	1	11751	52.5542	D35	S	5	New

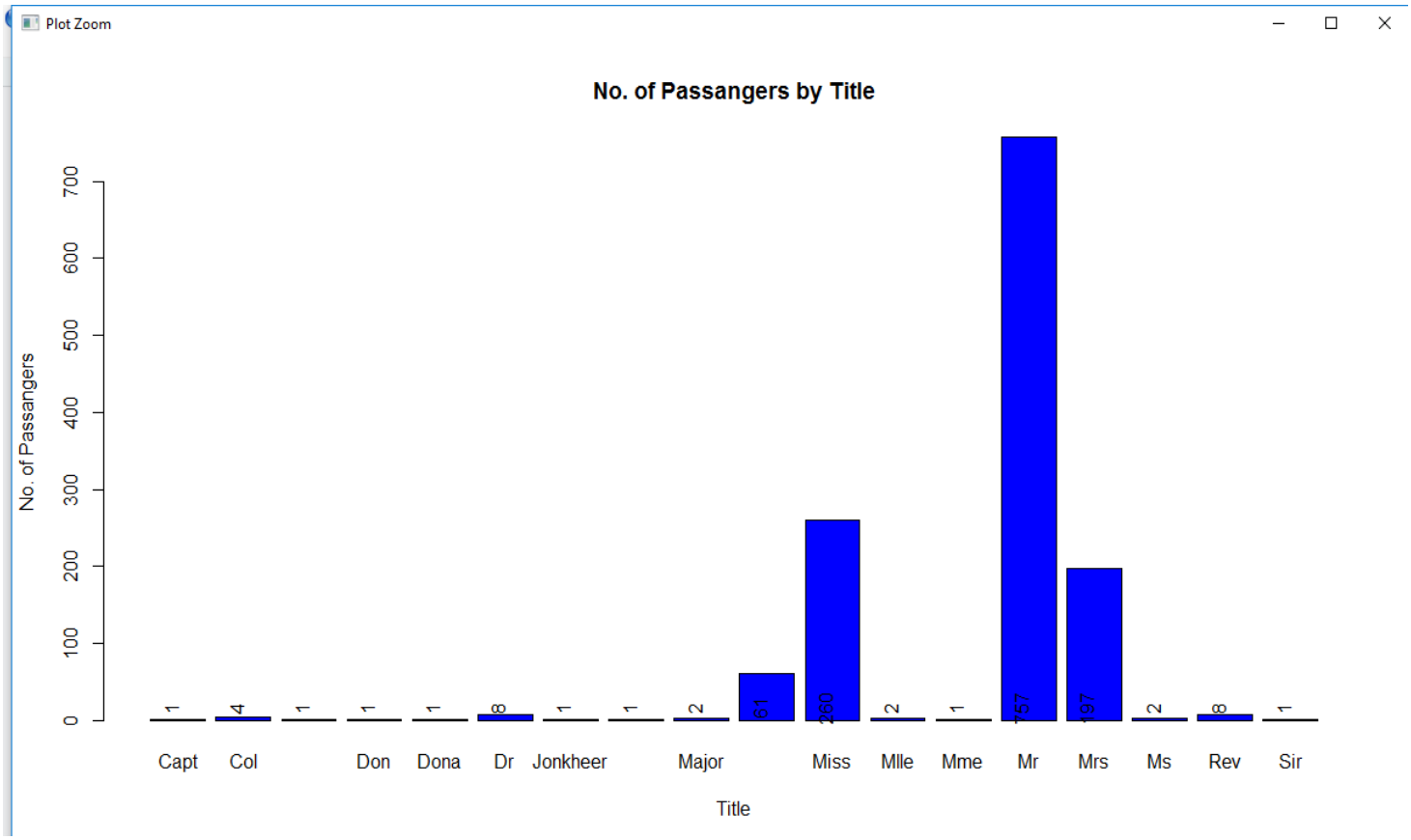

```
> str(TitanicData)
Classes ‘spec_tbl_df’, ‘tbl_df’, ‘tbl’ and 'data.frame': 1310 obs. of
14 variables:
 $ pclass   : num  1 1 1 1 1 1 1 1 1 1 ...
 $ survived : num  1 1 0 0 0 1 1 0 1 0 ...
 $ name     : chr  "Allen, Miss. Elisabeth Walton" "Allison, Master.
Hudson Trevor" "Allison, Miss. Helen Loraine" "Allison, Mr. Hudson Jo
shua Creighton" ...
 $ sex      : chr  "female" "male" "female" "male" ...
 $ age      : num  29 0.917 2 30 25 ...
 $ sibsp    : num  0 1 1 1 1 0 1 0 2 0 ...
 $ parch    : num  0 2 2 2 2 0 0 0 0 0 ...
 $ ticket   : chr  "24160" "113781" "113781" "113781" ...
 $ fare     : num  211 152 152 152 152 ...
 $ cabin    : chr  "B5" "C22 C26" "C22 C26" "C22 C26" ...
 $ embarked : chr  "S" "S" "S" "S" ...
 $ boat     : chr  "2" "11" NA NA ...
 $ body     : num  NA NA NA 135 NA NA NA NA NA 22 ...
```

```
 $ home.dest: chr  "St Louis, MO" "Montreal, PQ / Chesterville, ON" "
Montreal, PQ / Chesterville, ON" "Montreal, PQ / Chesterville, ON" ..
.
 - attr(*, "spec")=
  .. cols(
  ..   pclass = col_double(),
  ..   survived = col_double(),
  ..   name = col_character(),
  ..   sex = col_character(),
  ..   age = col_double(),
  ..   sibsp = col_double(),
  ..   parch = col_double(),
  ..   ticket = col_character(),
  ..   fare = col_double(),
  ..   cabin = col_character(),
  ..   embarked = col_character(),
  ..   boat = col_character(),
  ..   body = col_double(),
  ..   home.dest = col_character()
  .. )
```

```
> str(TitanicData)
'data.frame':   1309 obs. of  14 variables:
 $ pclass   : int  1 1 1 1 1 1 1 1 1 1 ...
 $ survived : int  1 1 0 0 0 1 1 0 1 0 ...
 $ name     : Factor w/ 1307 levels "Abbing, Mr. Anthony",..: 22 24 25 26 27 31 46 47 51 55 ...
 $ sex      : Factor w/ 2 levels "female","male": 1 2 1 2 1 2 1 2 1 2 ...
 $ age      : num  29 0.917 2 30 25 ...
 $ sibsp    : int  0 1 1 1 1 0 1 0 2 0 ...
 $ parch    : int  0 2 2 2 2 0 0 0 0 0 ...
 $ ticket   : Factor w/ 929 levels "110152","110413",..: 188 50 50 50 50 125 93 16 77 826 ...
 $ fare     : num  211 152 152 152 152 ...
 $ cabin    : Factor w/ 187 levels "","A10","A11",..: 45 81 81 81 81 151 147 17 63 1 ...
 $ embarked : Factor w/ 4 levels "","C","Q","S": 4 4 4 4 4 4 4 4 4 2 ...
 $ boat     : Factor w/ 28 levels "","1","10","11",..: 13 4 1 1 1 14 3 1 28 1 ...
 $ body     : int  NA NA NA 135 NA NA NA NA NA 22 ...
 $ home.dest: Factor w/ 370 levels "","?Havana, Cuba",..: 310 232 232 232 232 238 163 25 23 230 ...
>
```

```
> psych::describe(TitanicData)
           vars    n   mean     sd median trimmed    mad  min     max   range  skew kurtosis    se
pclass        1 1309   2.29   0.84   3.00    2.37   0.00 1.00    3.00    2.00 -0.60    -1.32  0.02
survived      2 1309   0.38   0.49   0.00    0.35   0.00 0.00    1.00    1.00  0.49    -1.77  0.01
name*         3 1309 653.69 377.31 653.00  653.62 484.81 1.00 1307.00 1306.00  0.00    -1.20 10.43
sex*          4 1309   1.64   0.48   2.00    1.68   0.00 1.00    2.00    1.00 -0.60    -1.64  0.01
age           5 1046  29.88  14.41  28.00   29.39  11.86 0.17   80.00   79.83  0.41     0.13  0.45
sibsp         6 1309   0.50   1.04   0.00    0.27   0.00 0.00    8.00    8.00  3.84    19.93  0.03
parch         7 1309   0.39   0.87   0.00    0.18   0.00 0.00    9.00    9.00  3.66    21.42  0.02
ticket*       8 1309 464.60 278.04 460.00  465.23 379.55 1.00  929.00  928.00 -0.01    -1.33  7.68
fare          9 1308  33.30  51.76  14.45   21.57  10.24 0.00  512.33  512.33  4.36    26.87  1.43
cabin*       10 1309  23.04  47.82   1.00   10.17   0.00 1.00  187.00  186.00  2.10     3.14  1.32
embarked*    11 1309   3.49   0.82   4.00    3.61   0.00 1.00    4.00    3.00 -1.13    -0.51  0.02
boat*        12 1309   5.97   8.00   1.00    4.29   0.00 1.00   28.00   27.00  1.42     0.64  0.22
body         13  121 160.81  97.70 155.00  160.34 130.47 1.00  328.00  327.00  0.09    -1.28  8.88
home.dest*   14 1309 113.16 124.56  54.00   98.99  78.58 1.00  370.00  369.00  0.59    -1.19  3.44
>
> colnames(TitanicData) <- c("Pclass","Survived","Name","Sex","Age","SibSp","Parch","Ticket","Fare",
+                            "Cabin","Embarked")
```

```
Console ~/
> colnames(TitanicData) <- c("Pclass","Survived","Name","Sex","Age","SibSp","Parch","Ticket","Fare",
+                            "Cabin","Embarked")
> TitanicData <- TitanicData[,-13]
> # Convert Name as character
> TitanicData$Name <- as.character(TitanicData$Name)
> # Extract the title from passenger names
> TitanicData$SubTitle <- gsub("\\..*", "", TitanicData$Name)
> TitanicData$Title <- gsub(".*\\ ", "", TitanicData$SubTitle)
> table(TitanicData$Title)  # Count of Titles

  Capt    Col Countess    Don   Dona     Dr Jonkheer   Lady  Major Master   Miss   Mlle    Mme
     1      4        1      1      1      8        1      1      2     61    260      2      1
    Mr    Mrs     Ms    Rev    Sir
   757    197      2      8      1
> Title <- barplot(table(TitanicData$Title),
+                  main = "No. of Passangers by Title", xlab = "Title",
+                  ylab = "No. of Passangers", col = "Blue")
> text(Title, 0,table(TitanicData$Title), pos = 3, srt = 90)
>
```



b) Represent the proportion of people survived by family size using a graph.

The R-script for the given problem is as follows:

```
# b. Represent the proportion of people survived from the family size
using a graph

x <- table(TitanicData$Survived, TitanicData$Title)
# table for survived and died

x             # 0 for survived and 1 for died
p <- x[1,]    # number of passengers survived
p

prop <- round(p*100/sum(p),1)  # proportion of passangers survived
prop
# in barchart format

barplot(p,                          # for number of Passangers
        main = "No. of Passangers Survived by Title",
        xlab = "Title",
        ylab = "No. of Passangers", col = rainbow(length(p)), las =3)
text(p, pos = 3, srt = 90)

barplot(prop,                       # for percentage of passangers
        main = "No. of Passangers by Title", xlab = "Title",
        ylab = "Proportion  of Passangers", col = c("Blue","Red"),
        legend = rownames(prop), ylim=c(0, 100), las = 3)
text(prop, pos = 3, srt = 90)

# in Pie Chart format

pie_chart <- pie(p, labels = p, main = " No.of passengers of Survival
by Family",
                 col = rainbow(length(p)), cex = 1)
legend("right", names(p), cex= 0.5, fill = rainbow(length(p)))


pie(prop, labels = prop, main = " Proportion of Survival by Family",
    col = rainbow(length(prop)), cex = 1)
legend("right", names(prop), cex= 0.5, fill = rainbow(length(prop)))
```

The output of the R-Script (from Console window) is given as follows:

RStudio

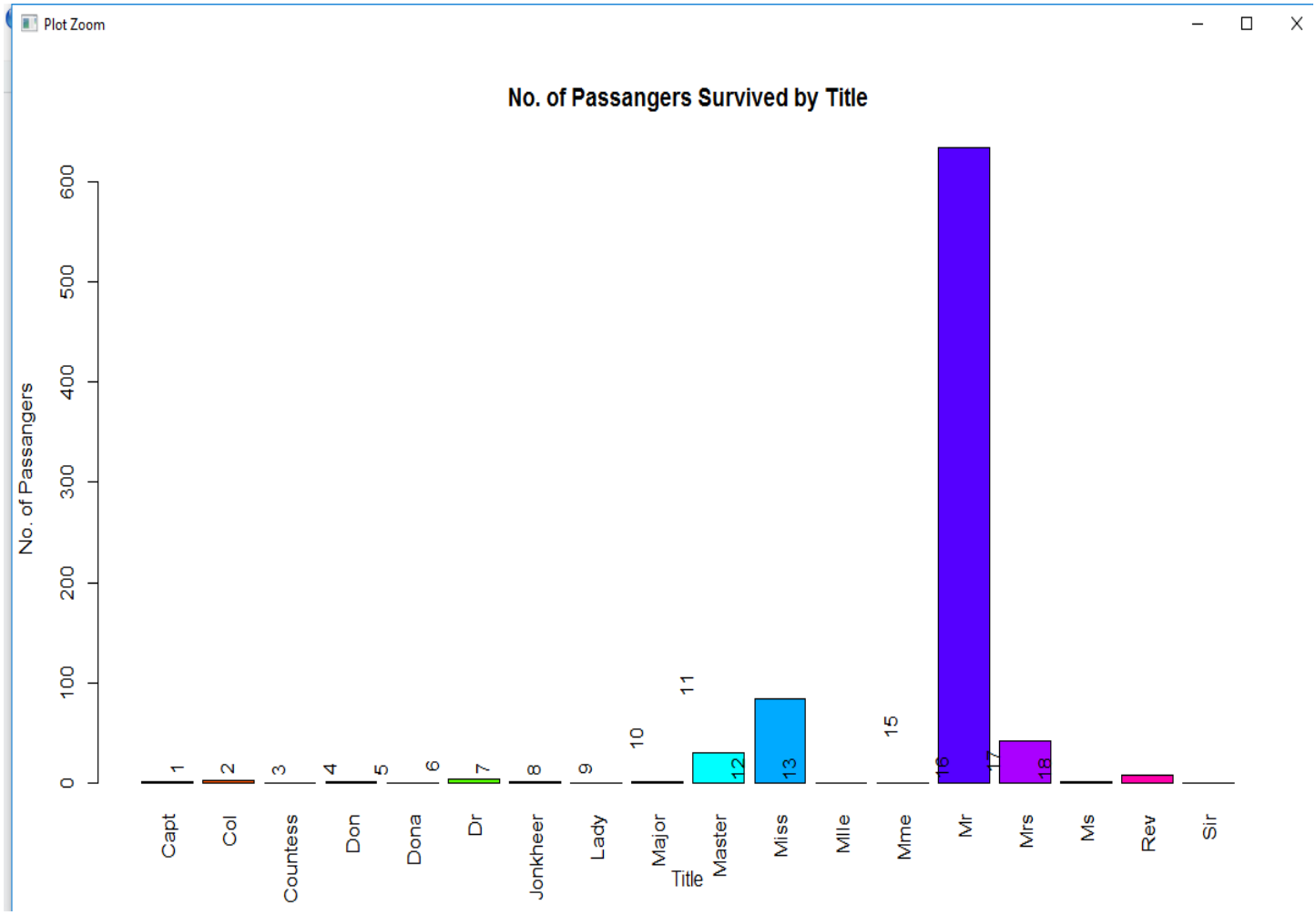
File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function | Addins

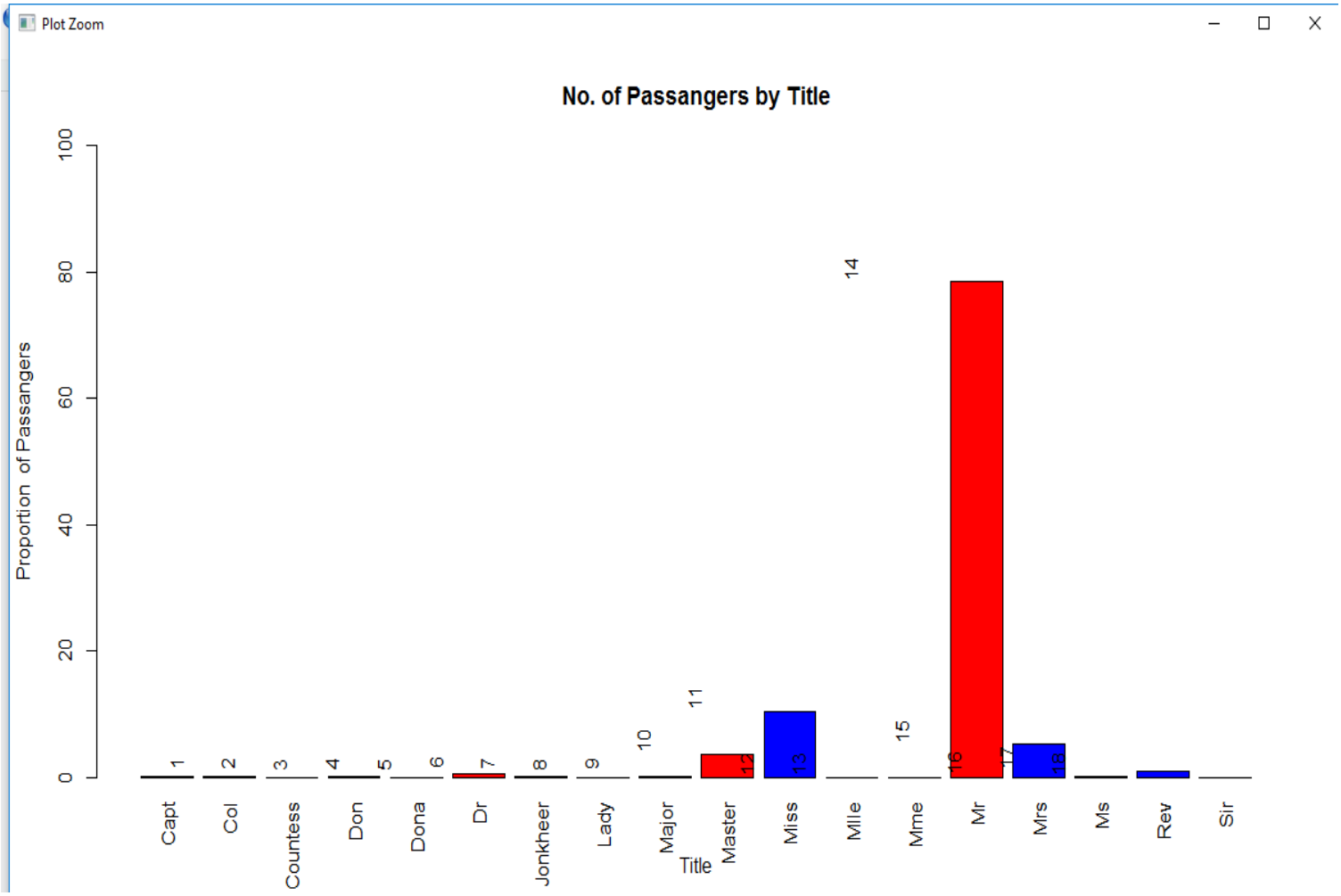
Source

Console ~/

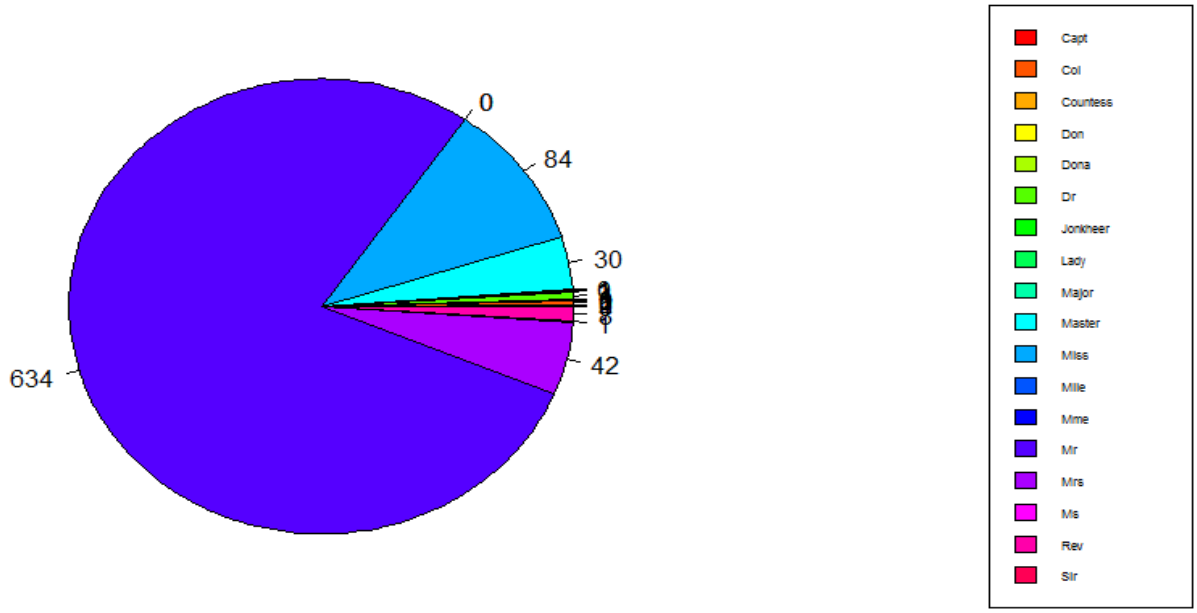
```
> x <- table(TitanicData$Survived, TitanicData$Title) # table for survived and died
> x                                                   # 0 for survived and 1 for died

   Capt Col Countess Don Dona  Dr Jonkheer Lady Major Master Miss Mlle Mme  Mr Mrs  Ms Rev Sir
  0    1   2        0   1    0   4        1    0     1      30   84    0   0 634  42   1   8   0
  1    0   2        1   0    1   4        0    1     1      31  176    2   1 123 155   1   0   1
> p <- x[1,]    # number of passengers survived
> p
   Capt      Col Countess      Don     Dona       Dr Jonkheer     Lady    Major   Master     Miss     Mlle      Mme
      1        2        0        1        0        4        1        0        1       30       84        0        0
     Mr      Mrs       Ms      Rev      Sir
    634       42        1        8        0
> prop <- round(p*100/sum(p),1)  # proportion of passangers survived
> prop
   Capt      Col Countess      Don     Dona       Dr Jonkheer     Lady    Major   Master     Miss     Mlle      Mme
    0.1      0.2      0.0      0.1      0.0      0.5      0.1      0.0      0.1      3.7     10.4      0.0      0.0
     Mr      Mrs       Ms      Rev      Sir
   78.4      5.2      0.1      1.0      0.0
> barplot(p,                        # for number of Passangers
+         main = "No. of Passangers Survived by Title",
+         xlab = "Title",
+         ylab = "No. of Passangers", col = rainbow(length(p)), las =3)
> text(p, pos = 3, srt = 90)
>
```



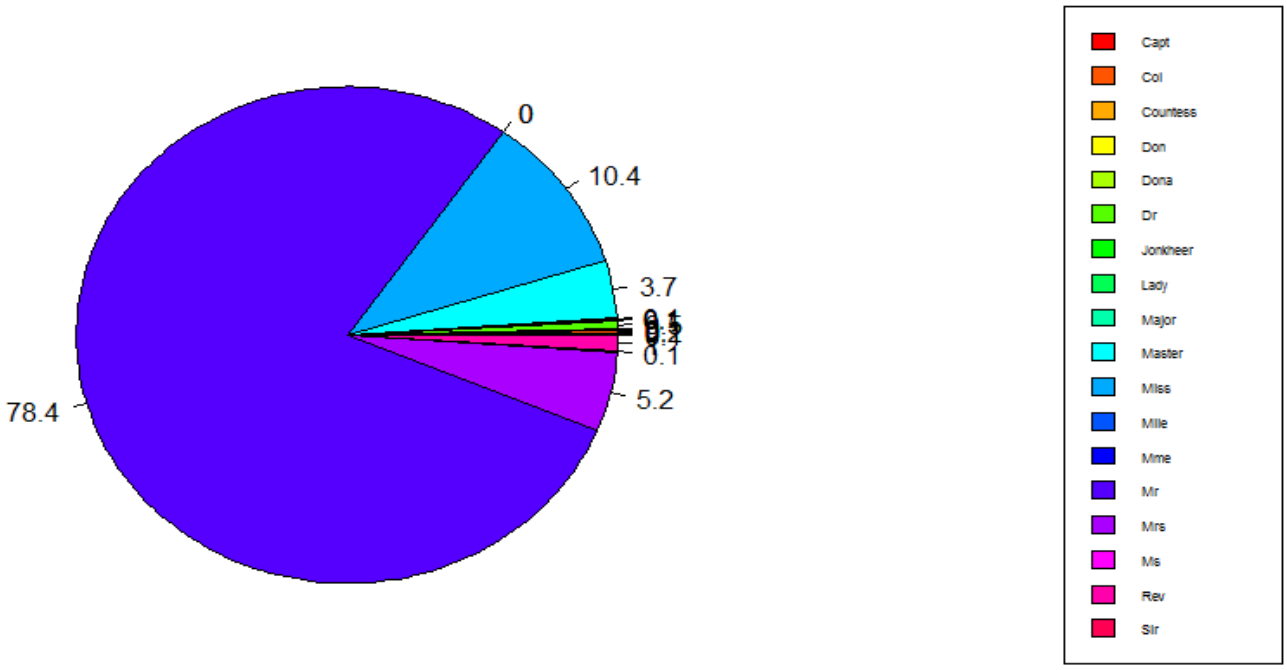
```
> barplot(prop,                          # for percentage of passangers
+         main = "No. of Passangers by Title", xlab = "Title",
+         ylab = "Proportion  of Passangers", col = c("Blue","Red"),
+         legend = rownames(prop), ylim=c(0, 100), las = 3)
> text(prop, pos = 3, srt = 90)
```




```
> pie_chart <- pie(p, labels = p, main = " No.of passengers of Survival
by Family",
+                  col = rainbow(length(p)), cex = 1)
> legend("right", names(p), cex= 0.5, fill = rainbow(length(p)))
```




```
> pie(prop, labels = prop, main = " Proportion of Survival by Family",
+     col = rainbow(length(prop)), cex = 1)
> legend("right", names(prop), cex= 0.5, fill = rainbow(length(prop)))
```



c. **Impute the missing values in Age variable using Mice library, create two different graphs showing Age distribution before and after imputation**

The R-script for the given problem is as follows:

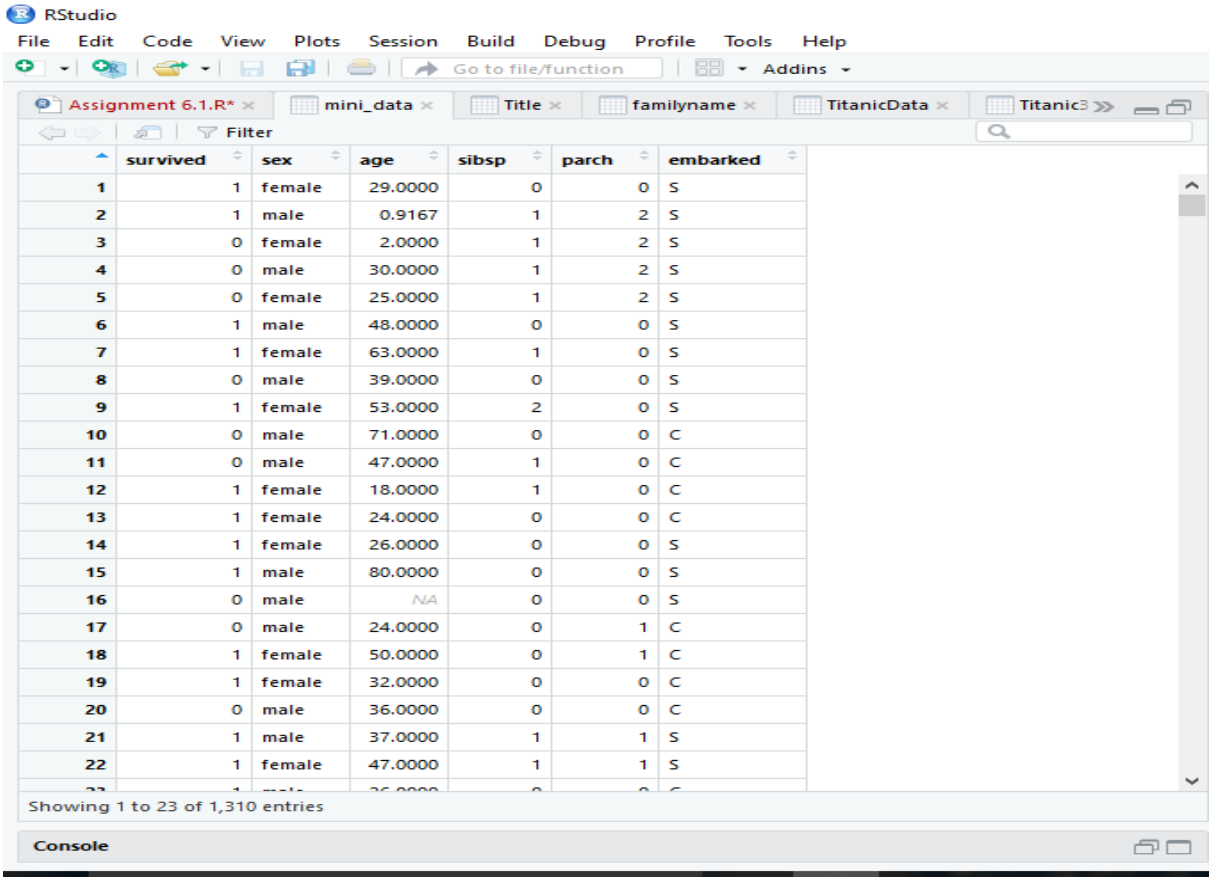
```
# c. Impute the missing values in Age variable using Mice Library, create two different
#graphs showing Age distribution before and after imputation.
library(mice)
sum(is.na(TitanicData$age))
str(TitanicData)
#Removing columns 1,2,3,4,5,7,12,13,14,16,17,18
mini_data <- TitanicData[-c(1,2,3,4,5,7,12,13,14,16,17,18)]
View(mini_data)
md.pattern(mini_data)
library(dplyr)
mini_data <- mini_data %>%
  mutate(
    survived = as.factor(survived),
    sex = as.factor(sex),
    age = as.numeric(age),
    sibsp = as.factor(sibsp),
    parch = as.factor(parch),
    embarked = as.factor(embarked)
  )
str(mini_data)
```

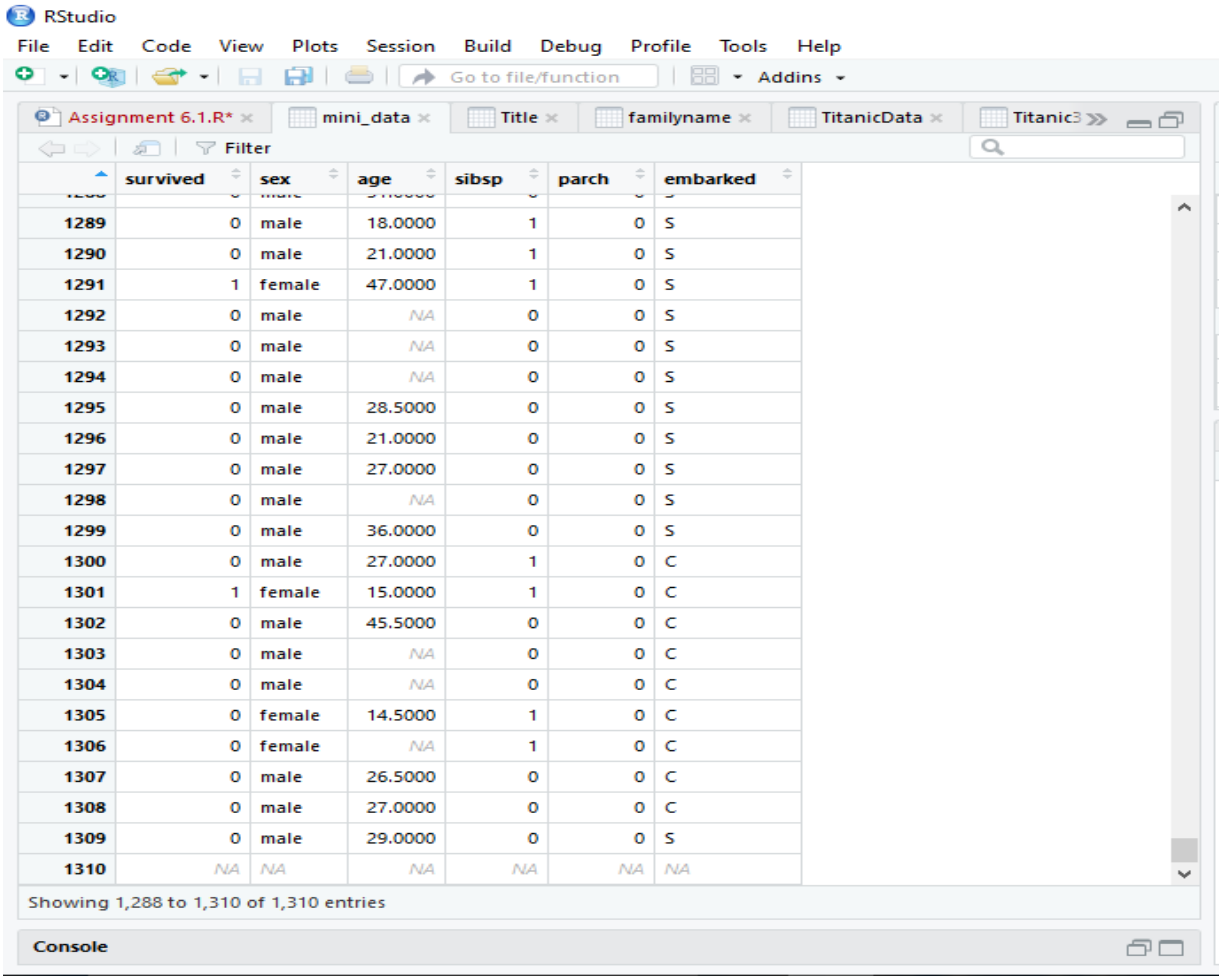
```
mice_data <- mice(mini_data, m=5, maxit=10,seed=500)

summary(mini_data)

Imputed=complete(mice_data,5)

hist(TitanicData$age,  main='Actual Data',col="green")

hist(Imputed$age, main='Imputed Data',col="black")
```

The output of the R-Script (from Console window) is given as follows:

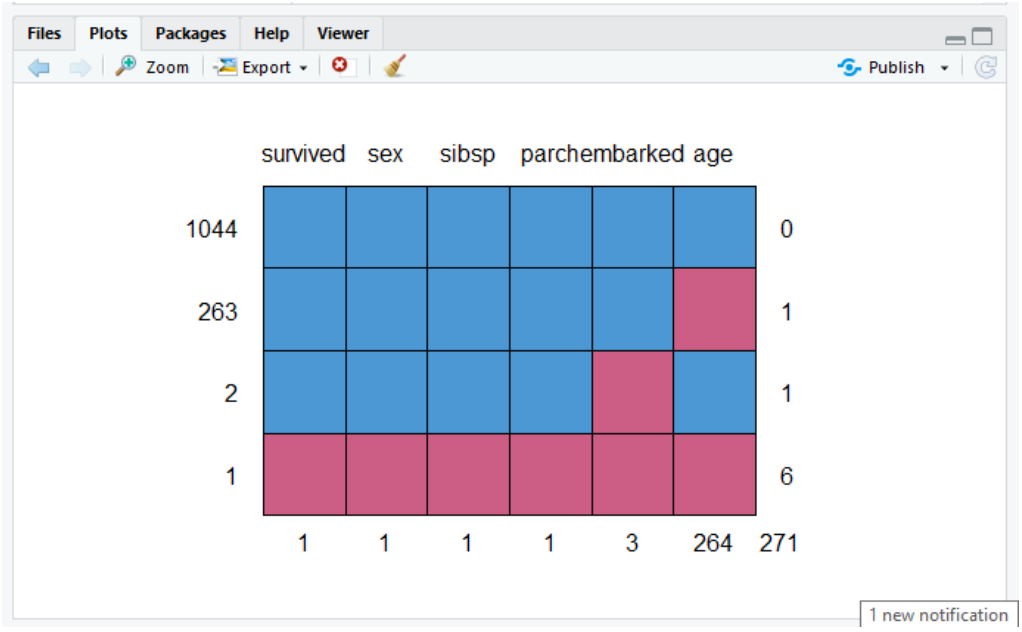
```
> library(mice)
> sum(is.na(TitanicData$age))
[1] 264
> str(TitanicData)
'data.frame':      1310 obs. of  18 variables:
 $ title      : Factor w/ 34 levels "Billiard,","Brito,",..: 18 15 18 21
22 21 18 21 22 21 ...
 $ first_name : Factor w/ 1127 levels "(Ada E Hall)",..: 298 508 465 507
506 456 672 1025 271 909 ...
 $ family_name: Factor w/ 868 levels "Abbing,","Abbott,",..: 16 17 17 17
17 21 25 25 28 31 ...
 $ name       : Factor w/ 1144 levels "Billiard, Master. James William",
..: 159 64 194 575 1019 549 232 864 982 792 ...
 $ pclass     : num  1 1 1 1 1 1 1 1 1 1 ...
 $ survived   : num  1 1 0 0 0 1 1 0 1 0 ...
 $ name       : chr  "Allen, Miss. Elisabeth Walton" "Allison, Master. H
udson Trevor" "Allison, Miss. Helen Loraine" "Allison, Mr. Hudson Joshua
Creighton" ...
 $ sex        : chr  "female" "male" "female" "male" ...
 $ age        : num  29 0.917 2 30 25 ...
 $ sibsp      : num  0 1 1 1 1 0 1 0 2 0 ...
 $ parch      : num  0 2 2 2 2 0 0 0 0 0 ...
 $ ticket     : chr  "24160" "113781" "113781" "113781" ...
 $ fare       : num  211 152 152 152 152 ...
 $ cabin      : chr  "B5" "C22 C26" "C22 C26" "C22 C26" ...
 $ embarked   : chr  "S" "S" "S" "S" ...
 $ boat       : chr  "2" "11" NA NA ...
 $ body       : num  NA NA NA 135 NA NA NA NA NA 22 ...
 $ home.dest  : chr  "St Louis, MO" "Montreal, PQ / Chesterville, ON" "M
ontreal, PQ / Chesterville, ON" "Montreal, PQ / Chesterville, ON" ...
```

```
> mini_data <- TitanicData[-c(1,2,3,4,5,7,12,13,14,16,17,18)]

> View(mini_data)
```





```
> md.pattern(mini_data)
     survived sex sibsp parch embarked age
1044        1   1     1     1        1   1   0
263         1   1     1     1        1   0   1
2           1   1     1     1        0   1   1
1           0   0     0     0        0   0   6
            1   1     1     1        3 264 271
```



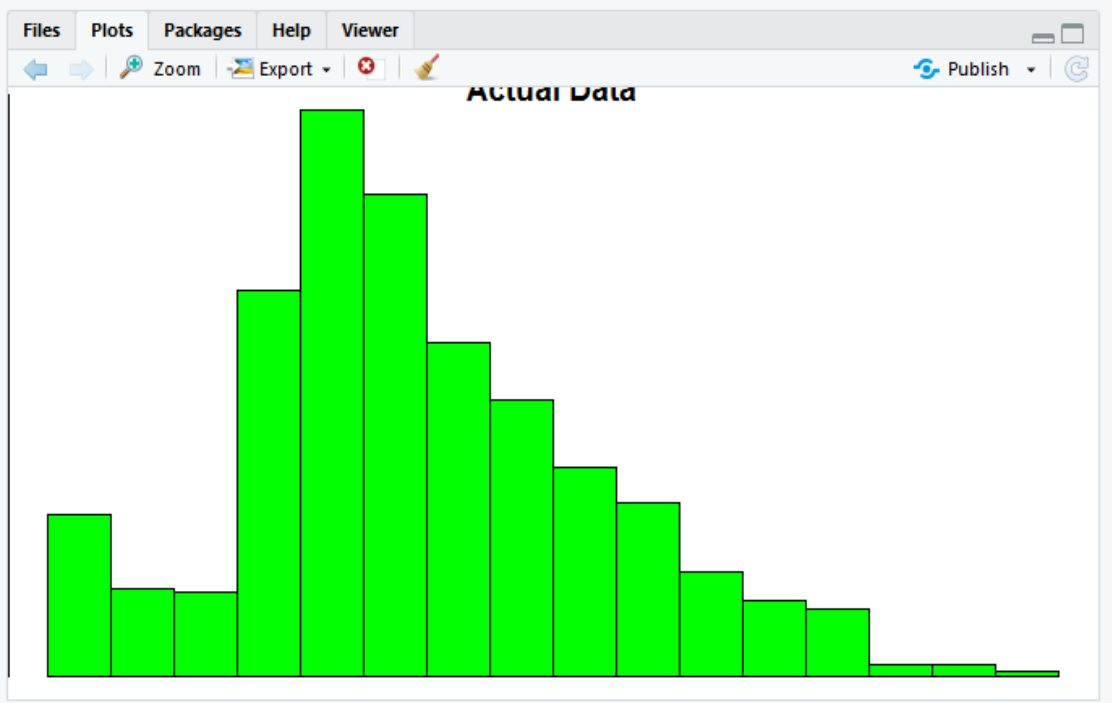

```
> library(dplyr)
> mini_data <- mini_data %>%
+   mutate(
+     survived = as.factor(survived),
+     sex = as.factor(sex),
+     age = as.numeric(age),
+     sibsp = as.factor(sibsp),
+     parch = as.factor(parch),
+     embarked = as.factor(embarked)
+   )
> str(mini_data)
'data.frame':       1310 obs. of  6 variables:
 $ survived: Factor w/ 2 levels "0","1": 2 2 1 1 1 2 2 1 2 1 ...
 $ sex     : Factor w/ 2 levels "female","male": 1 2 1 2 1 2 1 2 1 2 ...
 $ age     : num  29 0.917 2 30 25 ...
 $ sibsp   : Factor w/ 7 levels "0","1","2","3",..: 1 2 2 2 2 1 2 1 3 1
...
 $ parch   : Factor w/ 8 levels "0","1","2","3",..: 1 3 3 3 3 1 1 1 1 1
...
 $ embarked: Factor w/ 3 levels "C","Q","S": 3 3 3 3 3 3 3 3 3 1 ...
> mice_data <- mice(mini_data, m=5, maxit=10,seed=500)
```

```
iter imp variable
 1   1  survived  sex  age  sibsp  parch  embarked
 1   2  survived  sex  age  sibsp  parch  embarked
 1   3  survived  sex  age  sibsp  parch  embarked
 1   4  survived  sex  age  sibsp  parch  embarked
 1   5  survived  sex  age  sibsp  parch  embarked
 2   1  survived  sex  age  sibsp  parch  embarked
 2   2  survived  sex  age  sibsp  parch  embarked
 2   3  survived  sex  age  sibsp  parch  embarked
 2   4  survived  sex  age  sibsp  parch  embarked
 2   5  survived  sex  age  sibsp  parch  embarked
 3   1  survived  sex  age  sibsp  parch  embarked
 3   2  survived  sex  age  sibsp  parch  embarked
 3   3  survived  sex  age  sibsp  parch  embarked
 3   4  survived  sex  age  sibsp  parch  embarked
 3   5  survived  sex  age  sibsp  parch  embarked
 4   1  survived  sex  age  sibsp  parch  embarked
 4   2  survived  sex  age  sibsp  parch  embarked
 4   3  survived  sex  age  sibsp  parch  embarked
 4   4  survived  sex  age  sibsp  parch  embarked
 4   5  survived  sex  age  sibsp  parch  embarked
 5   1  survived  sex  age  sibsp  parch  embarked
 5   2  survived  sex  age  sibsp  parch  embarked
 5   3  survived  sex  age  sibsp  parch  embarked
 5   4  survived  sex  age  sibsp  parch  embarked
 5   5  survived  sex  age  sibsp  parch  embarked
 6   1  survived  sex  age  sibsp  parch  embarked
 6   2  survived  sex  age  sibsp  parch  embarked
 6   3  survived  sex  age  sibsp  parch  embarked
 6   4  survived  sex  age  sibsp  parch  embarked
 6   5  survived  sex  age  sibsp  parch  embarked
 7   1  survived  sex  age  sibsp  parch  embarked
 7   2  survived  sex  age  sibsp  parch  embarked
 7   3  survived  sex  age  sibsp  parch  embarked
 7   4  survived  sex  age  sibsp  parch  embarked
 7   5  survived  sex  age  sibsp  parch  embarked
 8   1  survived  sex  age  sibsp  parch  embarked
 8   2  survived  sex  age  sibsp  parch  embarked
 8   3  survived  sex  age  sibsp  parch  embarked
 8   4  survived  sex  age  sibsp  parch  embarked
 8   5  survived  sex  age  sibsp  parch  embarked
 9   1  survived  sex  age  sibsp  parch  embarked
```

```
  9    2  survived  sex  age  sibsp  parch  embarked
  9    3  survived  sex  age  sibsp  parch  embarked
  9    4  survived  sex  age  sibsp  parch  embarked
  9    5  survived  sex  age  sibsp  parch  embarked
  10   1  survived  sex  age  sibsp  parch  embarked
  10   2  survived  sex  age  sibsp  parch  embarked
  10   3  survived  sex  age  sibsp  parch  embarked
  10   4  survived  sex  age  sibsp  parch  embarked
  10   5  survived  sex  age  sibsp  parch  embarked
```

```
> summary(mini_data)
 survived       sex           age               sibsp          parch
 0   :809   female:466   Min.   : 0.1667   0       :891   0       :1002
 1   :500   male  :843   1st Qu.:21.0000   1       :319   1       : 170
 NA's:  1   NA's  :  1   Median :28.0000   2       : 42   2       : 113
                         Mean   :29.8811   4       : 22   3       :   8
                         3rd Qu.:39.0000   3       : 20   4       :   6
                         Max.   :80.0000   (Other): 15   (Other):  10
                         NA's   :264       NA's    :  1   NA's    :   1
 embarked
 C   :270
 Q   :123
 S   :914
 NA's:  3
```

```
> Imputed=complete(mice_data,5)
> hist(TitanicData$age,  main='Actual Data',col="green")
```



```
> hist(Imputed$age, main='Imputed Data',col="black")
```