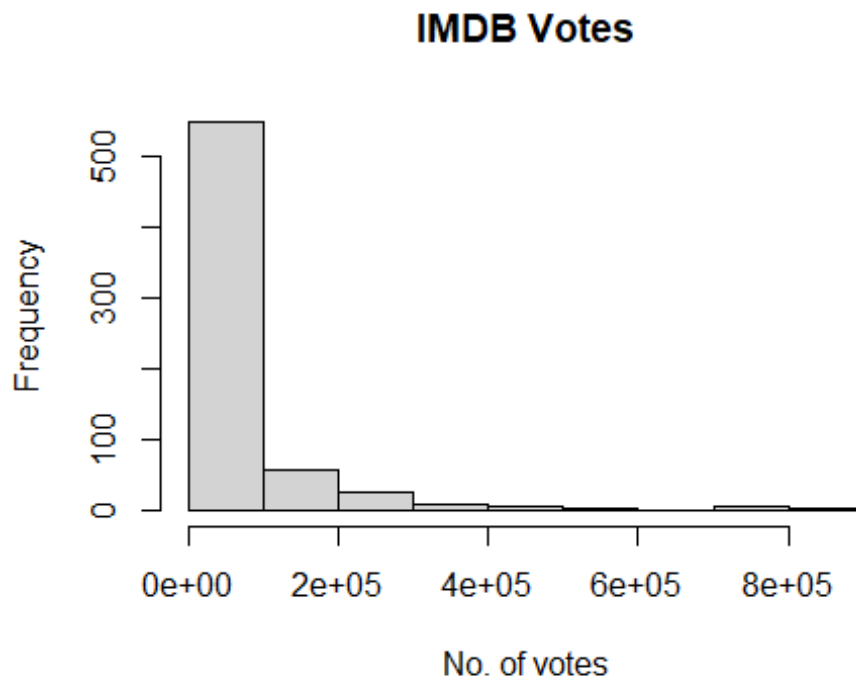


## 612303050 Deshmukh Mehmood Rehan's Assignment 2

Q1. Use the moviesData. Create a histogram of the object named imdb\_num\_votes in this file

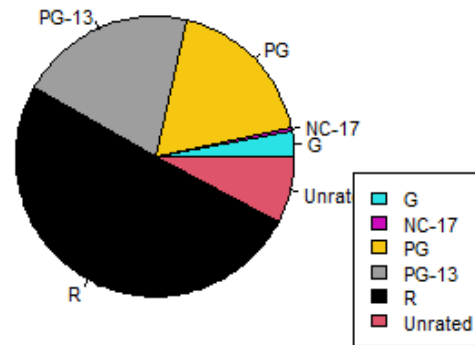
```
moviesData = read.csv("moviesData.csv")  
hist(moviesData$imdb_num_votes, main = "IMDB Votes", xlab = "No. of votes")
```



Q2. Create a pie chart of the object mpaa\_rating and save the plot.

```
mpaa_ratings = factor(moviesData$mpaa_rating)  
mpaa_ratings_table = table(mpaa_ratings)  
pie(mpaa_ratings_table, col = 5:11, main = "MPAA Ratings", cex = 0.7)  
legend("bottomright", levels(mpaa_ratings), fill = 5:11, cex = 0.7)
```

### MPAA Ratings



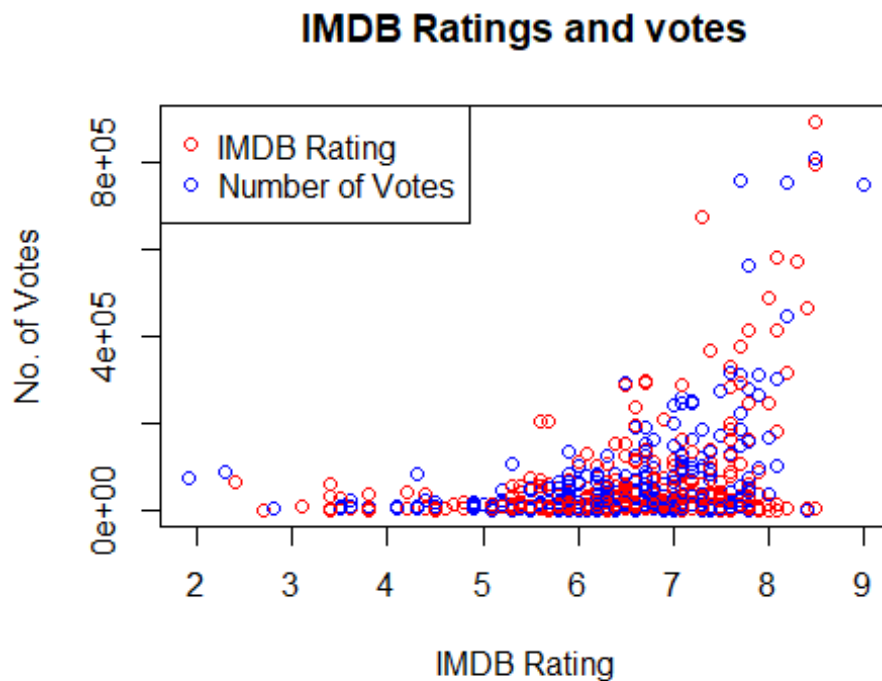
Q3. Read the file moviesData.csv Create a bar chart of critics\_score for the first 10 movies.

```
moviesData = read.csv("moviesData.csv")
score_of_critics = (moviesData$critics_score[1:10])
barplot(score_of_critics, main = "Critics' Score", names.arg = 1:10, xlab = "Movie No.", ylab = "Score")
```



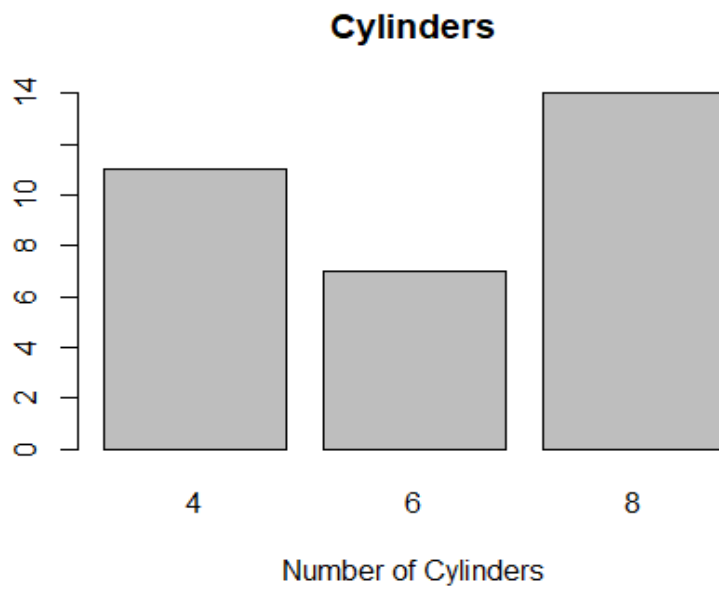
Q4. Create a scatter plot of `imdb_rating` and `imdb_num_votes` to see their relation. Also save the plot.

```
imdb_rating = moviesData$imdb_rating
imdb_num_votes = moviesData$imdb_num_votes
plot(imdb_rating, imdb_num_votes, col = c("red", "blue"), main = "IMDB
Ratings and votes", xlab="IMDB Rating", ylab="No. of Votes")
legend("topleft", legend = c("IMDB Rating", "Number of Votes"), col =
c("red", "blue"), pch = 1)
```



Q5. Using the `mtcars` dataset create a barplot using `cyl` variable

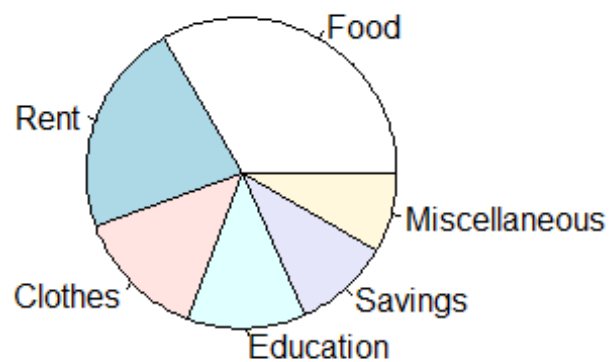
```
data(mtcars)
cylinder_table <- table(mtcars$cyl)
barplot(cylinder_table, main = "Cylinders",
        xlab = "Number of Cylinders")
```



Q6. Represent the following data by pie diagram

```
commodity <- c("Food", "Rent", "Clothes", "Education", "Savings",  
"Miscellaneous")  
expenditure <- c(300, 200, 125, 110, 90, 75)  
  
pie(expenditure, labels = commodity, main = "Expenditure on Commodities")
```

### Expenditure on Commodities

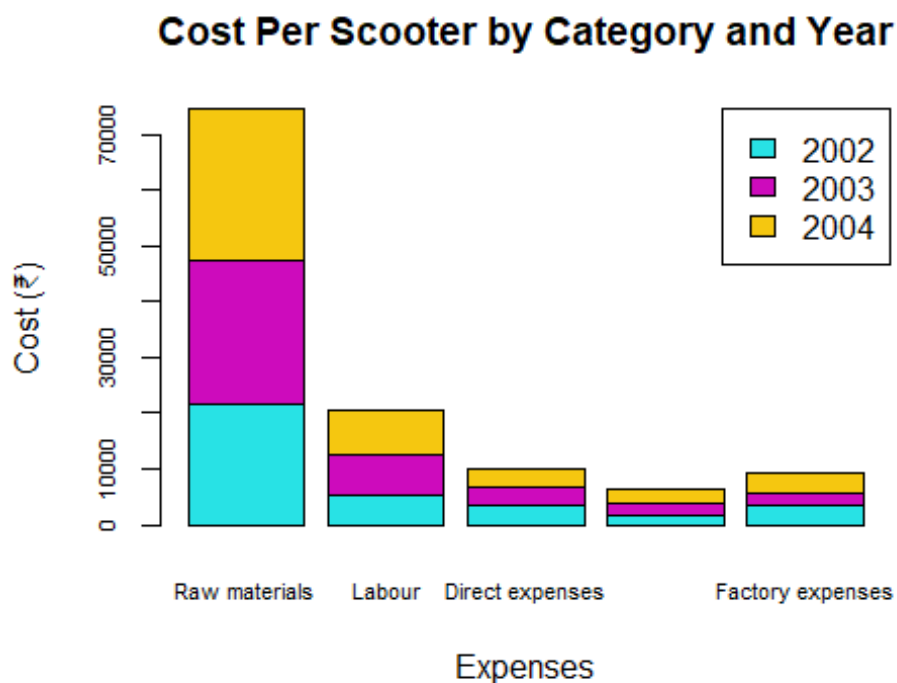


Q7. Represent the following data by subdivided bar diagram

```
years <- c(2002, 2003, 2004)
raw_materials <- c(21600, 26000, 27000)
labour <- c(5400, 7000, 8100)
direct_expenses <- c(3600, 3000, 3500)
office_expenses <- c(1800, 2000, 2700)
factory_expenses <- c(3600, 2000, 3600)

scooter_row_names <- c("Raw materials", "Labour", "Direct expenses", "Office expenses", "Factory expenses")

cost_df <- data.frame(raw_materials, labour, direct_expenses,
office_expenses, factory_expenses)
names(cost_df) <- scooter_row_names
barplot(as.matrix(cost_df), col = 5:7, main = "Cost Per Scooter by Category and Year", ylab = "Cost (₹)", xlab = "Expenses", names.arg = scooter_row_names, cex.axis = 0.7, cex.names = 0.7)
legend("topright", legend = years, fill = 5:7)
```



Q8. The following frequency distribution table gives age distribution gives the age of drivers who were at fault in accidents during a 1-week period in a city Draw a histogram

```
age_groups <- c("18-20", "20-25", "25-30", "30-40", "40-50", "50-60", "60-70")
lowerbound=c(18,20,25,30,40,50,60)
```

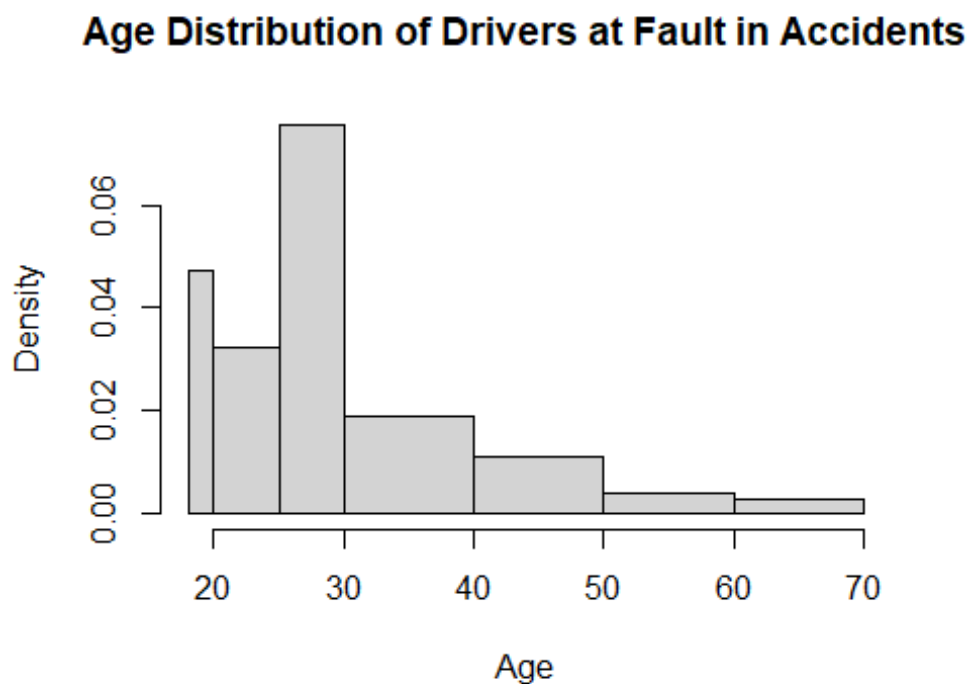
```

upperbound=c(20,25,30,40,50, 60, 70)
age_freq=c(7, 12, 28, 14, 8, 3, 2)
breaks=c(18,upperbound)
x=(lowerbound+upperbound)/2
x
## [1] 19.0 22.5 27.5 35.0 45.0 55.0 65.0

y=rep(x,age_freq)
y
## [1] 19.0 19.0 19.0 19.0 19.0 19.0 19.0 22.5 22.5 22.5 22.5 22.5 22.5 22.5 22.5
## [16] 22.5 22.5 22.5 22.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5
## [31] 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5 27.5
## [46] 27.5 27.5 35.0 35.0 35.0 35.0 35.0 35.0 35.0 35.0 35.0 35.0 35.0 35.0 35.0
## [61] 35.0 45.0 45.0 45.0 45.0 45.0 45.0 45.0 45.0 45.0 55.0 55.0 55.0 65.0 65.0

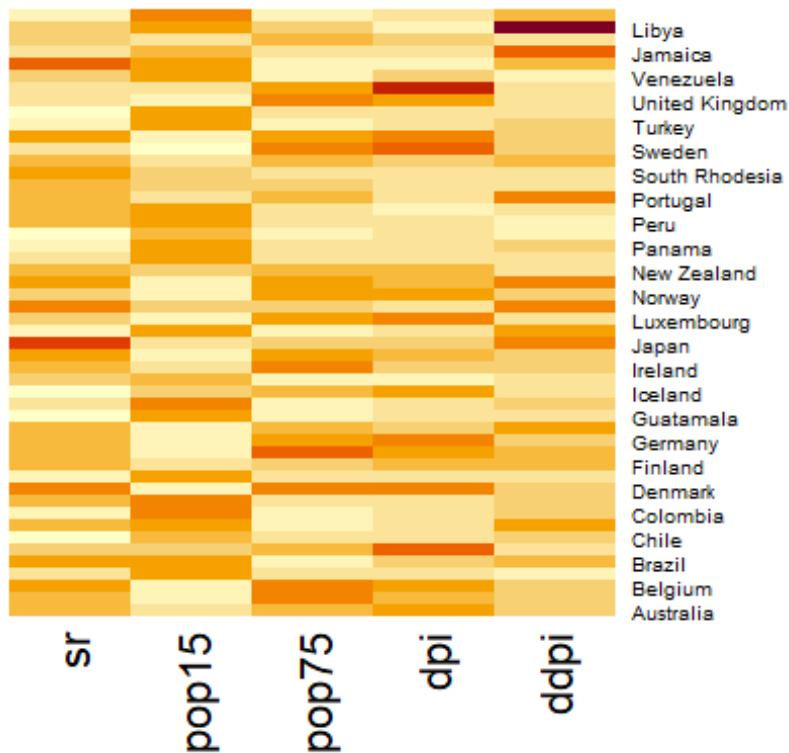
hist(y,breaks,main = "Age Distribution of Drivers at Fault in Accidents",
xlab = "Age")

```



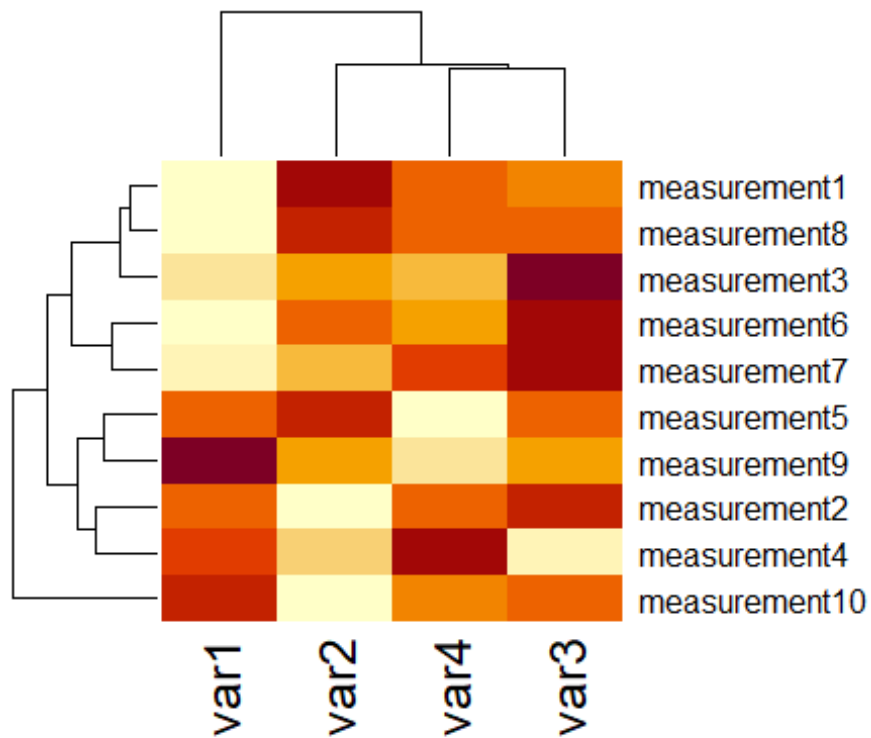
Q9.Create a heatmap using LifeCycleSavings dataset

```
data("LifeCycleSavings")
data=as.matrix(LifeCycleSavings)
heatmap(data, scale = "column", Colv = NA, Rowv = NA )
```



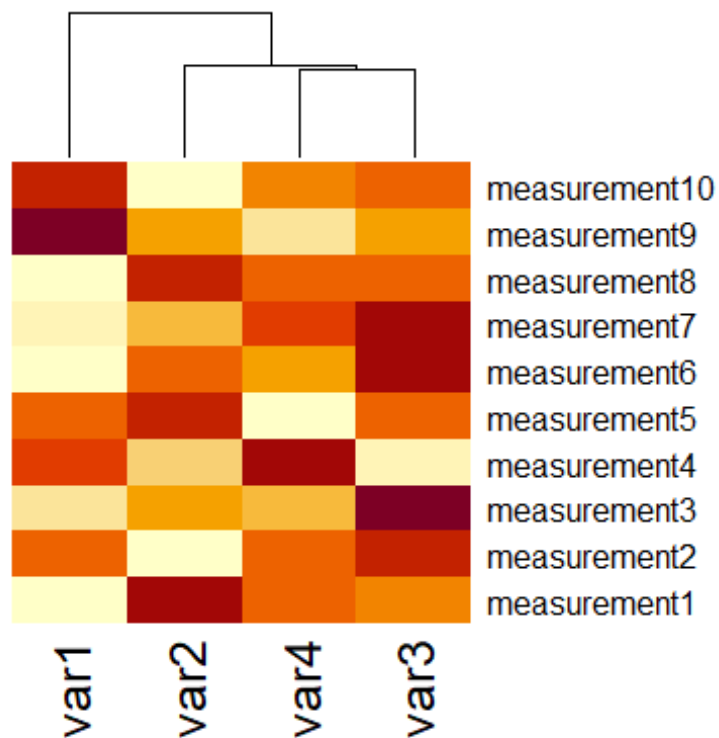
Q10. Create a heatmap using following datasets.

```
var1 = c(0.094, 0.1138, 0.1893, -0.0102, 0.1587, -0.4558, -0.6241, -0.227,
0.7365, 0.9761)
var2 = c(0.668, -0.3847, 0.3303, -0.4259, 0.2948, 0.2244, -0.3119, 0.499, -
0.0872, 0.4355)
var3 = c(0.4153, 0.2671, 0.5821, -0.5967, 0.153, 0.6619, 0.3642, 0.3067, -
0.069, 0.8663)
var4 = c(0.4613, 0.1529, 0.2632, 0.18, -0.2208, 0.0457, 0.2003, 0.3289, -
0.4252, 0.8107)
dataframe = data.frame(var1, var2, var3, var4)
rownames(dataframe) = c("measurement1", "measurement2", "measurement3",
"measurement4", "measurement5", "measurement6", "measurement7",
"measurement8", "measurement9", "measurement10")
heatmap(as.matrix(dataframe))
```



#a) Write code to remove row dendrogram

```
heatmap(as.matrix(dataframe), Rowv = NA)
```





#b) Write code to remove column dendograms

```
heatmap(as.matrix(dataframe), Colv = NA)
```

