

# Tutorial 01

1. Upload the built-in dataset called 'mpg' in R Studio. (Install the 'tidyverse' package if it is not already available - `install.packages("tidyverse")` )

```
library(tidyverse)
```

```
dataset<-mpg
```

2. Write the relevant code to display the entire dataset.

```
View(dataset)
```

3. Display the first and last five rows of data in the dataset.

```
#displaying first 05 rows
head(dataset)
#displaying last 05 rows
tail(dataset)
```

4. Display an overview of the dataset, including statistics such as the mean, median, minimum, maximum, and so on.

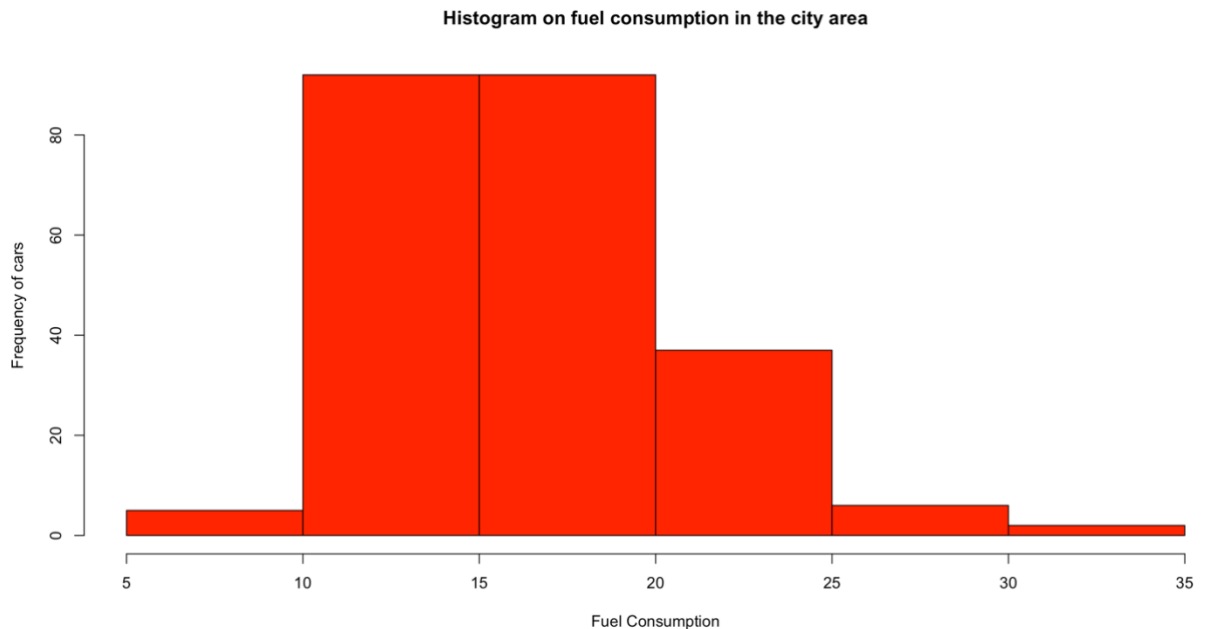
```
summary(dataset)
```

manufacturer	model	displ	year	cyl
Length:234	Length:234	Min. :1.600	Min. :1999	Min. :4.000
Class :character	Class :character	1st Qu.:2.400	1st Qu.:1999	1st Qu.:4.000
Mode :character	Mode :character	Median :3.300	Median :2004	Median :6.000
		Mean :3.472	Mean :2004	Mean :5.889
		3rd Qu.:4.600	3rd Qu.:2008	3rd Qu.:8.000
		Max. :7.000	Max. :2008	Max. :8.000
trans	drv	cty	hwy	
Length:234	Length:234	Min. : 9.00	Min. :12.00	
Class :character	Class :character	1st Qu.:14.00	1st Qu.:18.00	
Mode :character	Mode :character	Median :17.00	Median :24.00	
		Mean :16.86	Mean :23.44	
		3rd Qu.:19.00	3rd Qu.:27.00	
		Max. :35.00	Max. :44.00	
fl	class			
Length:234	Length:234			
Class :character	Class :character			
Mode :character	Mode :character			

5. Create a histogram to display the frequency of vehicles based on fuel consumption in the city area.

```
hist(dataset$cty)
```

6. Customize the implemented histogram by including a title and color scheme to resemble the diagram below.



```
hist(dataset$cty, main = "Histogram on fuel consumption in the city area",  
      xlab = "Fuel Consumption",  
      ylab = "Frequency of cars",  
      col = "red")
```

7. Create another histogram to visualize different manufacturers and the number of vehicles belonging to each manufacturer.

```
manufacturer_counts <- table(dataset$manufacturer)  
# Plot the frequencies using barplot  
barplot(manufacturer_counts,  
        main = "Histogram - manufacturer & frequency",  
        xlab = "manufacturers",  
        ylab = "Frequency",  
        col = "skyblue")
```

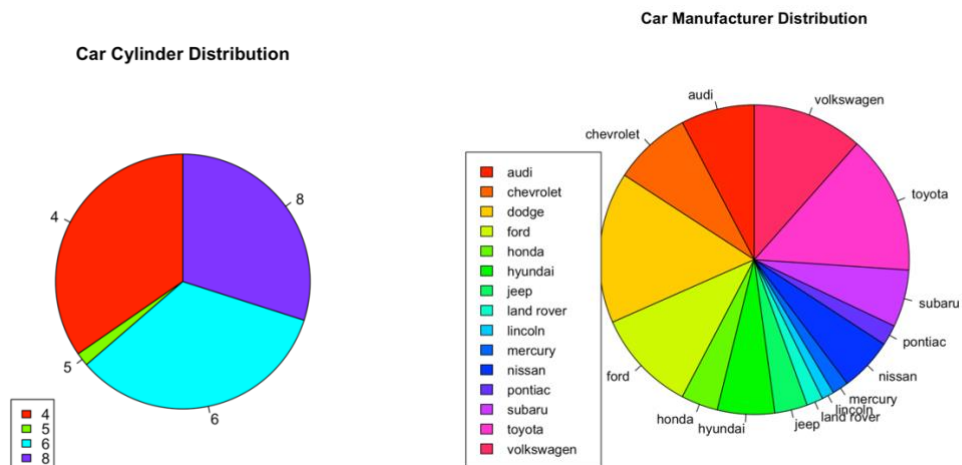
8. Create a pie chart to visualize vehicle manufacturers.

```
car_model_frequencies <- table(dataset$manufacturer)  
car_model_frequencies  
# Create a pie chart  
pie(car_model_frequencies)
```

9. Create a pie chart to visualize the number of cylinders in the vehicles.

```
car_cylinder_frequencies <- table(dataset$cyl)
car_cylinder_frequencies
# Create a pie chart
pie(car_cylinder_frequencies)
```

10. Modify the above pie charts to resemble the diagrams below.



### Practice Question

1. Load the iris dataset and create histograms for each column.
2. Create histograms for sepal, petal width, and length where species is 'setosa'.
3. Create pie charts for sepal, petal width, and length