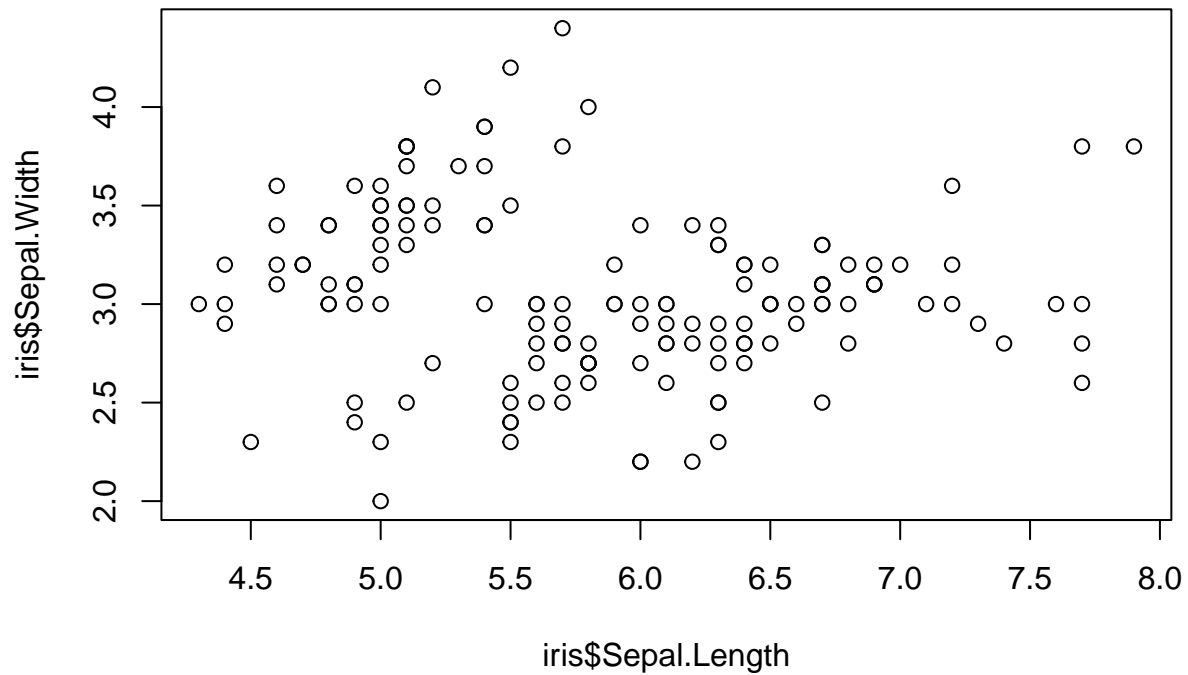# Day_1_Basic_Plot

Bashir,I. (2022)

3/5/2022

Basic Plotting
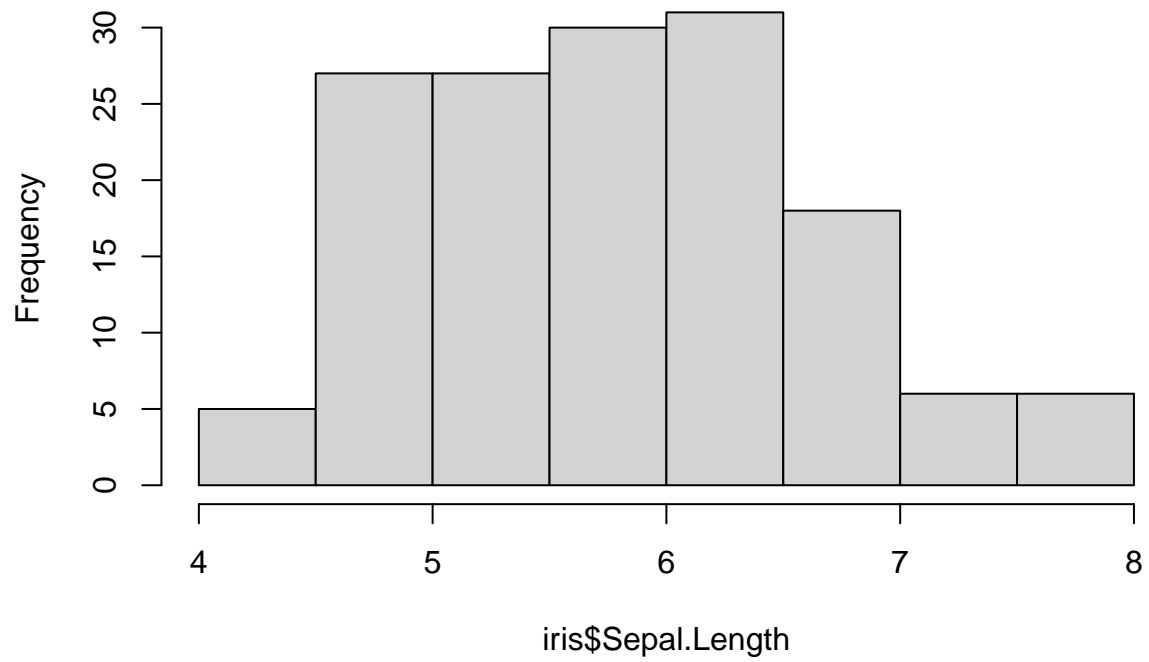
1- Plot

```
data("iris")
plot(iris$Sepal.Length, iris$Sepal.Width)
```


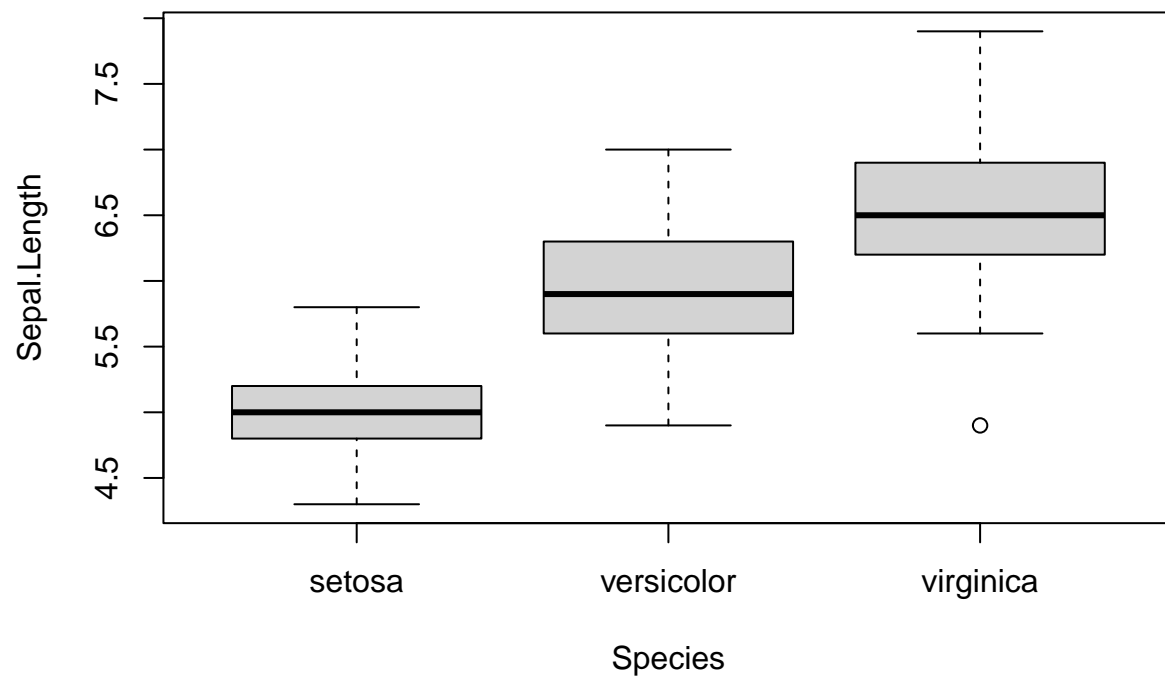2- histogram

```
hist(iris$Sepal.Length)
```

Histogram of iris$Sepal.Length

iris$Sepal.Length

3- boxplot

```
boxplot(Sepal.Length ~ Species, data = iris)
```

4- image graph

```r
x <- matrix(1:120, 12, 10)
x
```
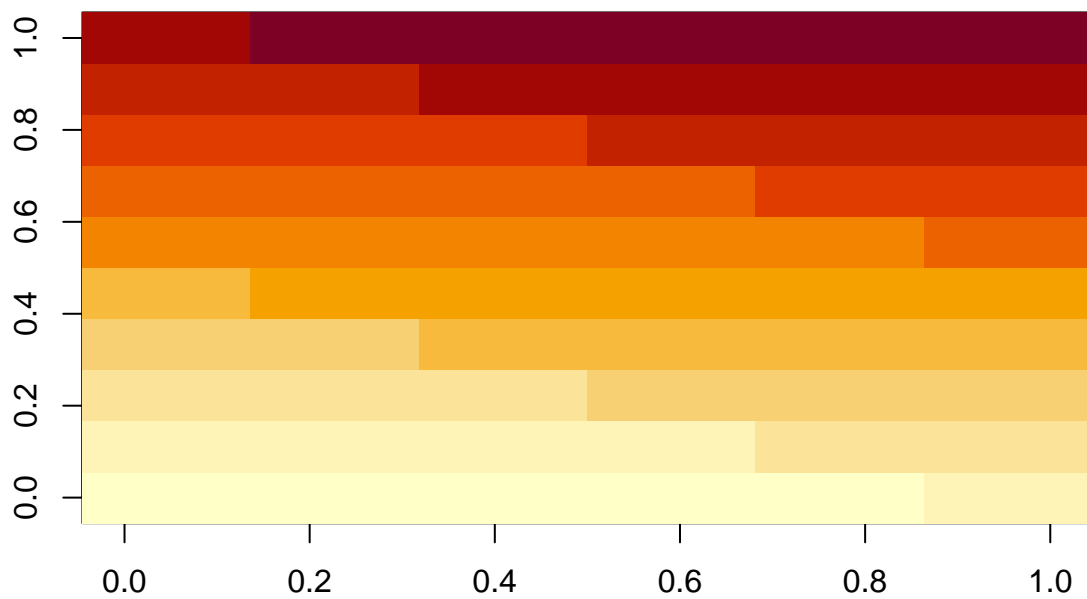
```
##       [,1] [,2] [,3] [,4] [,5] [,6] [,7] [,8] [,9] [,10]
##  [1,]    1   13   25   37   49   61   73   85   97   109
##  [2,]    2   14   26   38   50   62   74   86   98   110
##  [3,]    3   15   27   39   51   63   75   87   99   111
##  [4,]    4   16   28   40   52   64   76   88  100   112
##  [5,]    5   17   29   41   53   65   77   89  101   113
##  [6,]    6   18   30   42   54   66   78   90  102   114
##  [7,]    7   19   31   43   55   67   79   91  103   115
##  [8,]    8   20   32   44   56   68   80   92  104   116
##  [9,]    9   21   33   45   57   69   81   93  105   117
## [10,]   10   22   34   46   58   70   82   94  106   118
## [11,]   11   23   35   47   59   71   83   95  107   119
## [12,]   12   24   36   48   60   72   84   96  108   120
```
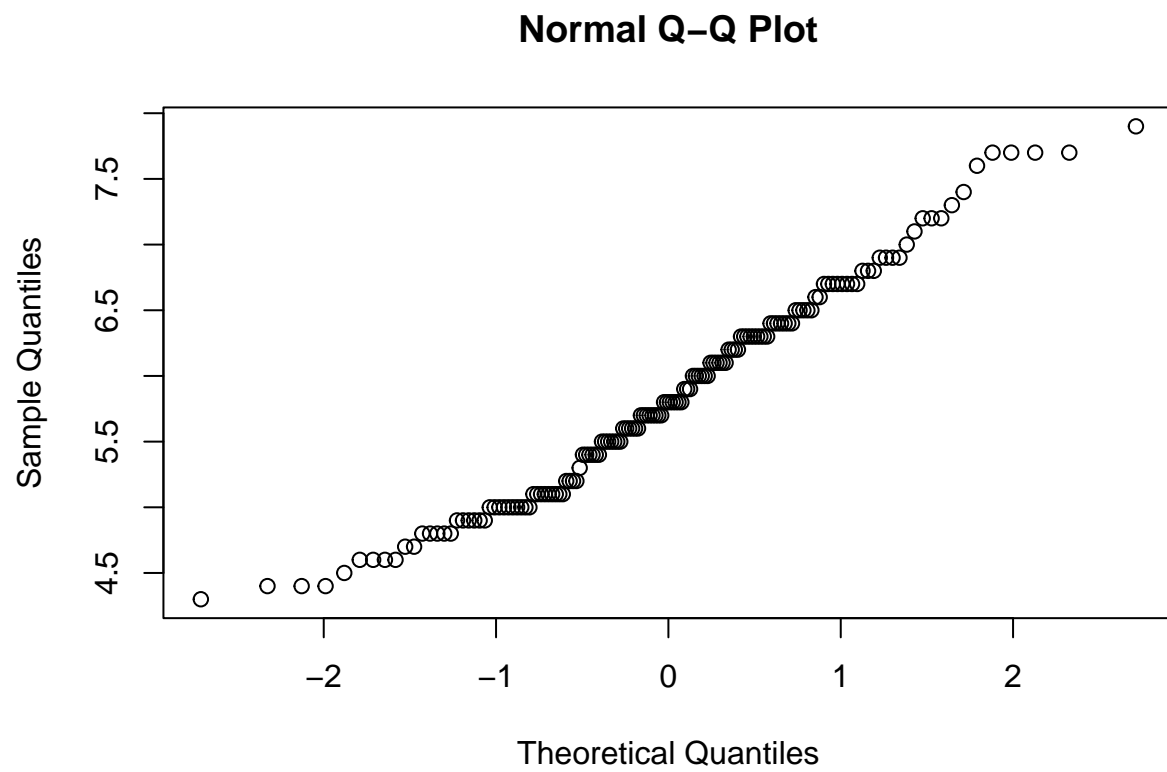
```r
image(x)
```

5- strip chart

```
stripchart(iris$Sepal.Length)
```
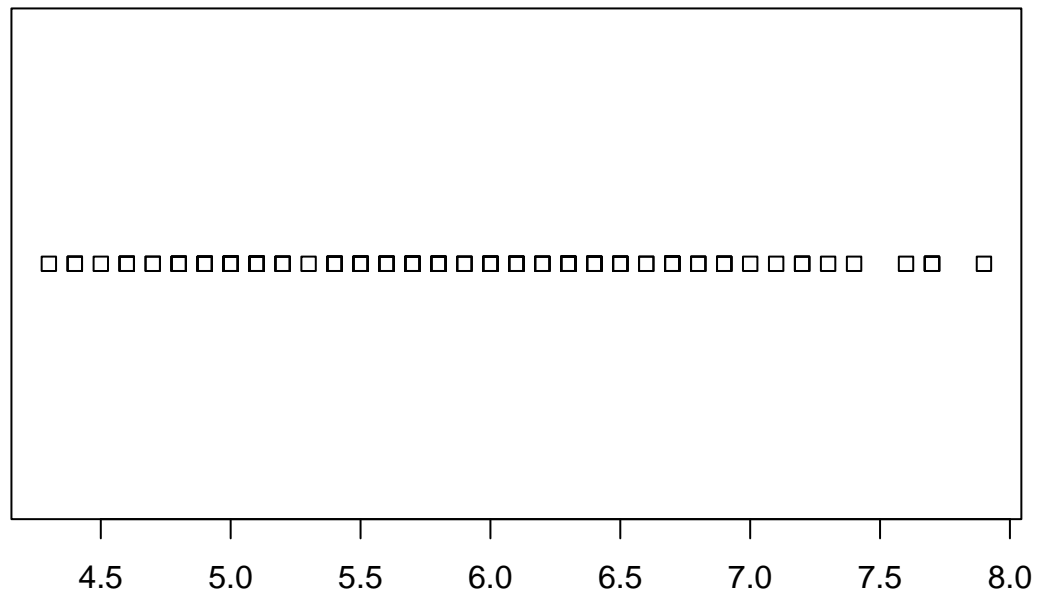
6- qqnormplot

```
qqnorm(iris$Sepal.Length)
```

Normal Q–Q Plot

intermediate plotting

1- scatter plot

```
plot(iris$Sepal.Length, iris$Sepal.Width, xlab="sepal length", ylab = "sepal width", main = "IRIS Scatt
```

IRIS Scatter Plot
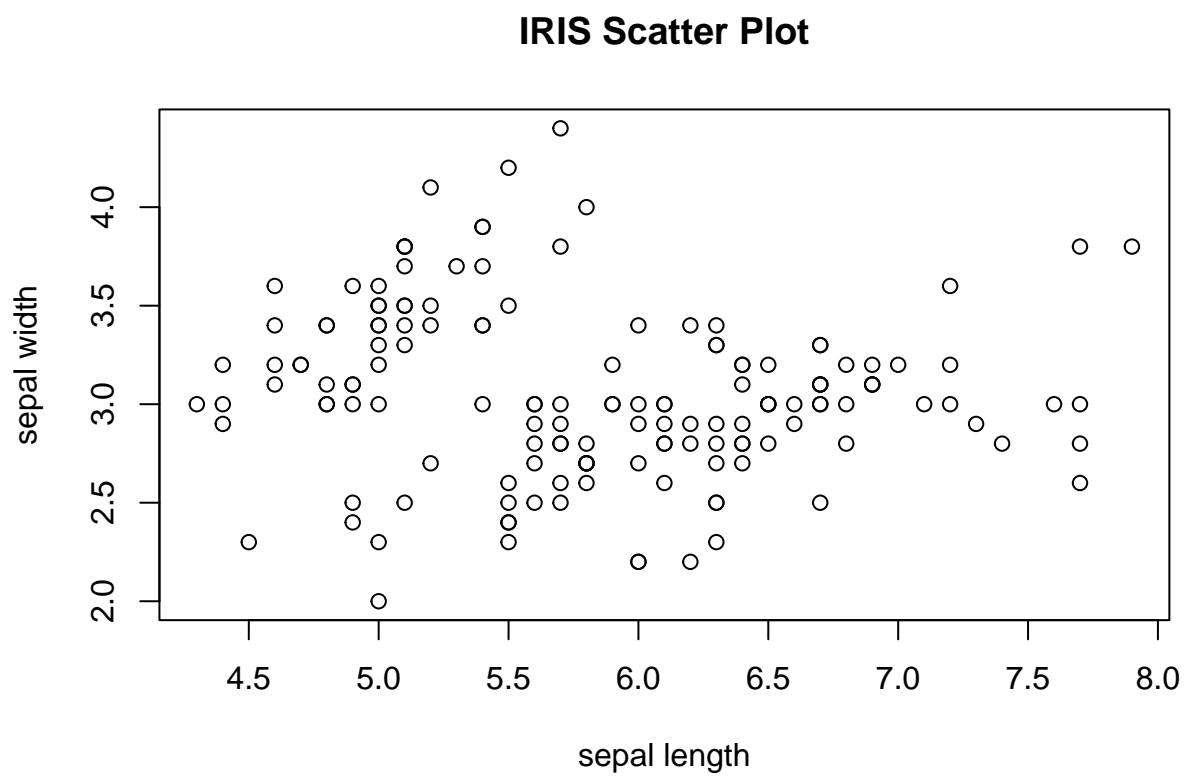
2- Correlation plot

```
plot(iris)
```
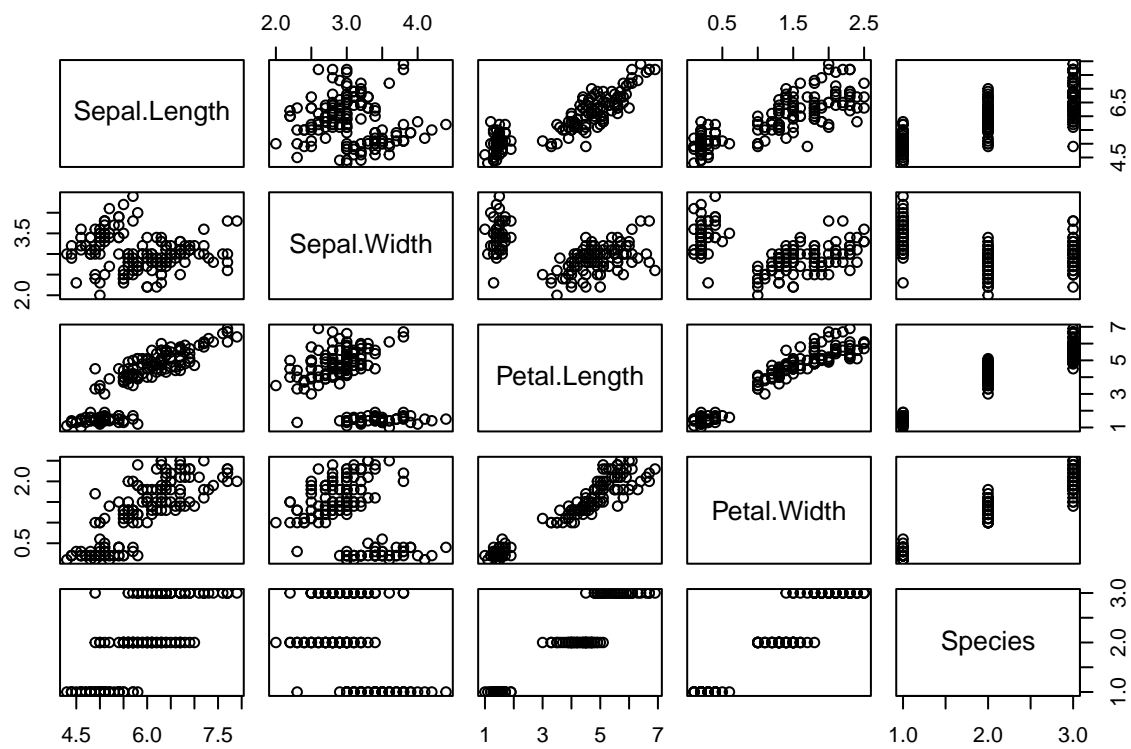
Corr plot

```
library(corrplot)
```

```
## corrplot 0.92 loaded
```

```
# first calculate the correlation
c <- cor(iris[,-5])
corrplot(c)
```
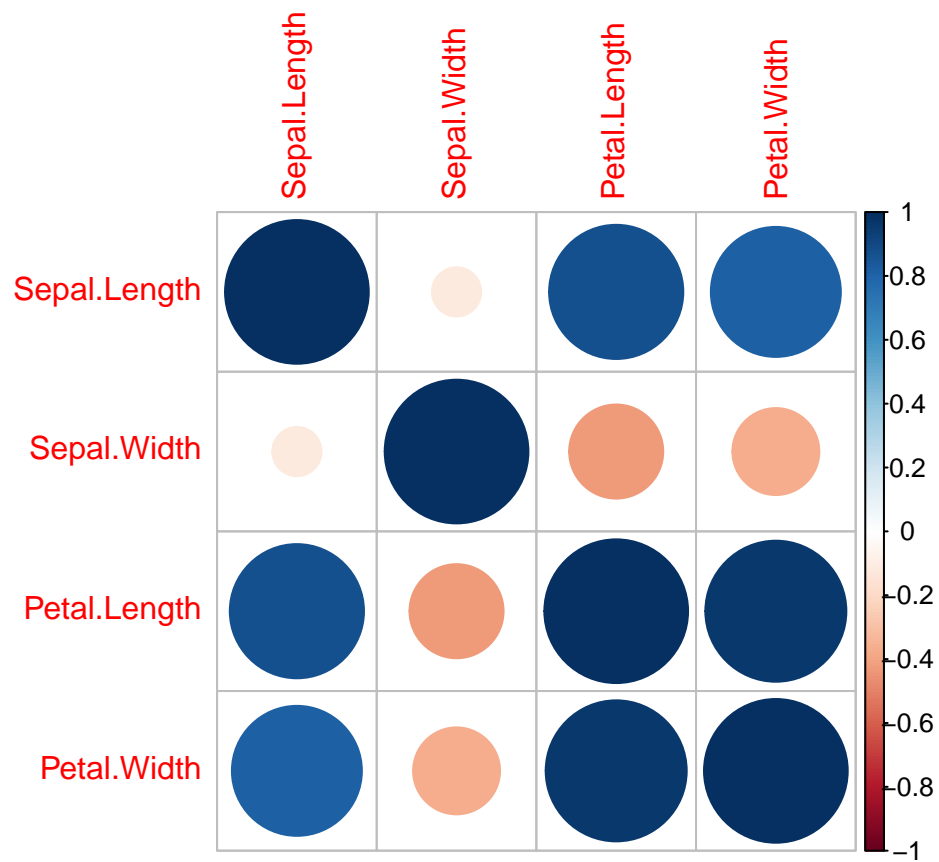
another diverse dataset

```
car <- cor(mtcars)
corrplot(car)
```

Number format

```
corrplot(car, method = "number")
```

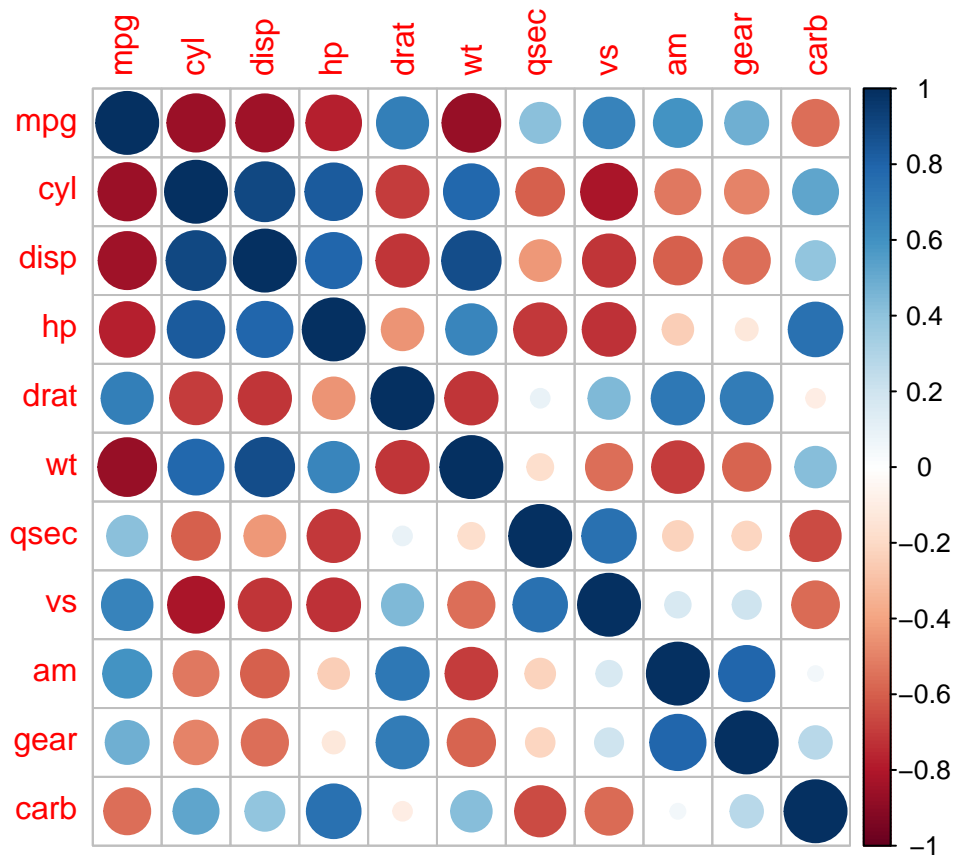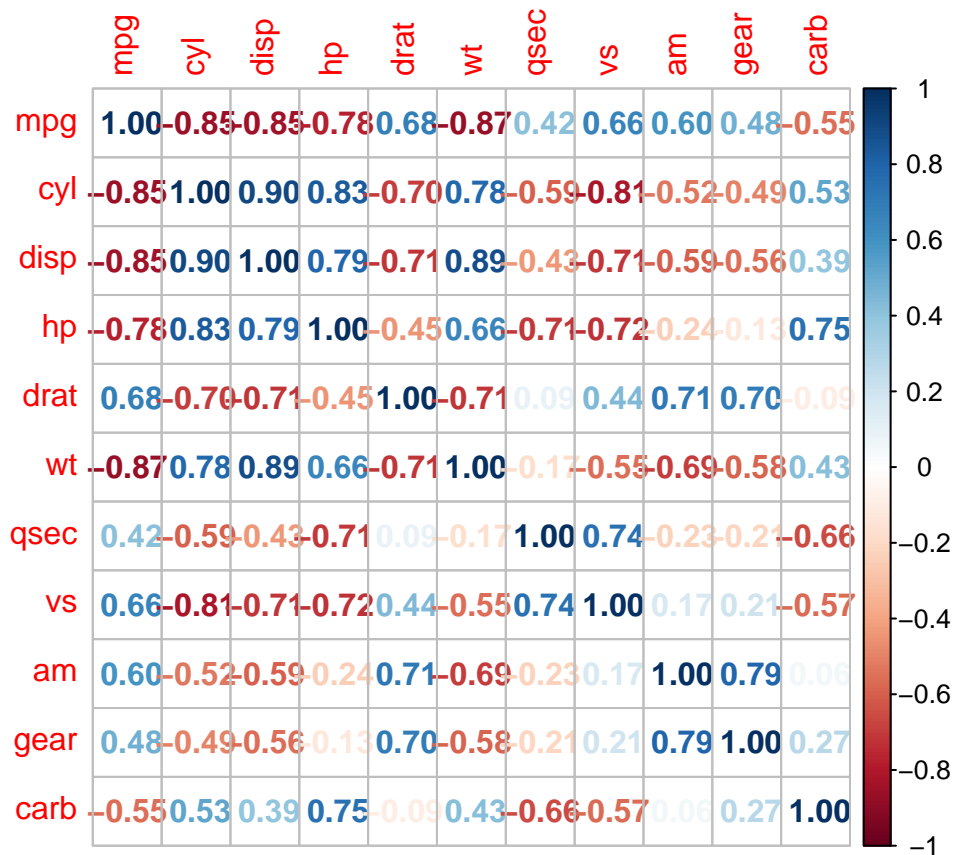|	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
mpg	1.00	-0.85	-0.85	-0.78	0.68	-0.87	0.42	0.66	0.60	0.48	-0.55
cyl	-0.85	1.00	0.90	0.83	-0.70	0.78	-0.59	-0.81	-0.52	-0.49	0.53
disp	-0.85	0.90	1.00	0.79	-0.71	0.89	-0.43	-0.71	-0.59	-0.56	0.39
hp	-0.78	0.83	0.79	1.00	-0.45	0.66	-0.71	-0.72	-0.24	-0.13	0.75
drat	0.68	-0.70	-0.71	-0.45	1.00	-0.71	0.09	0.44	0.71	0.70	-0.09
wt	-0.87	0.78	0.89	0.66	-0.71	1.00	-0.17	-0.55	-0.69	-0.58	0.43
qsec	0.42	-0.59	-0.43	-0.71	0.09	-0.17	1.00	0.74	-0.23	-0.21	-0.66
vs	0.66	-0.81	-0.71	-0.72	0.44	-0.55	0.74	1.00	0.17	0.21	-0.57
am	0.60	-0.52	-0.59	-0.24	0.71	-0.69	-0.23	0.17	1.00	0.79	0.06
gear	0.48	-0.49	-0.56	-0.13	0.70	-0.58	-0.21	0.21	0.79	1.00	0.27
carb	-0.55	0.53	0.39	0.75	-0.09	0.43	-0.66	-0.57	0.06	0.27	1.00

Upper plot

```
corrplot(car, method = "number", type= "upper")
```

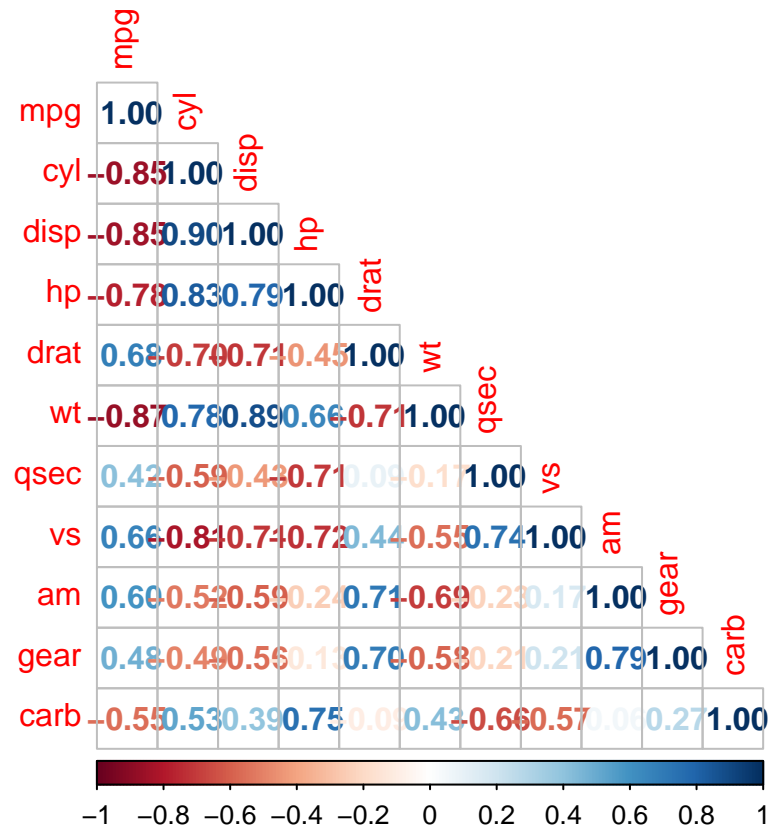|	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
mpg	1.00	-0.85	-0.85	-0.78	0.68	-0.87	0.42	0.66	0.60	0.48	-0.55
cyl		1.00	0.90	0.83	-0.70	0.78	-0.59	-0.81	-0.52	-0.49	0.53
disp			1.00	0.79	-0.71	0.89	-0.43	-0.71	-0.59	-0.56	0.39
hp				1.00	-0.45	0.66	-0.71	-0.72	-0.24	-0.13	0.75
drat					1.00	-0.71	0.09	0.44	0.71	0.70	-0.09
wt						1.00	-0.17	-0.55	-0.69	-0.58	0.43
qsec							1.00	0.74	-0.23	-0.21	-0.66
vs								1.00	0.17	0.21	-0.57
am									1.00	0.79	0.06
gear										1.00	0.27
carb											1.00

Upper plot

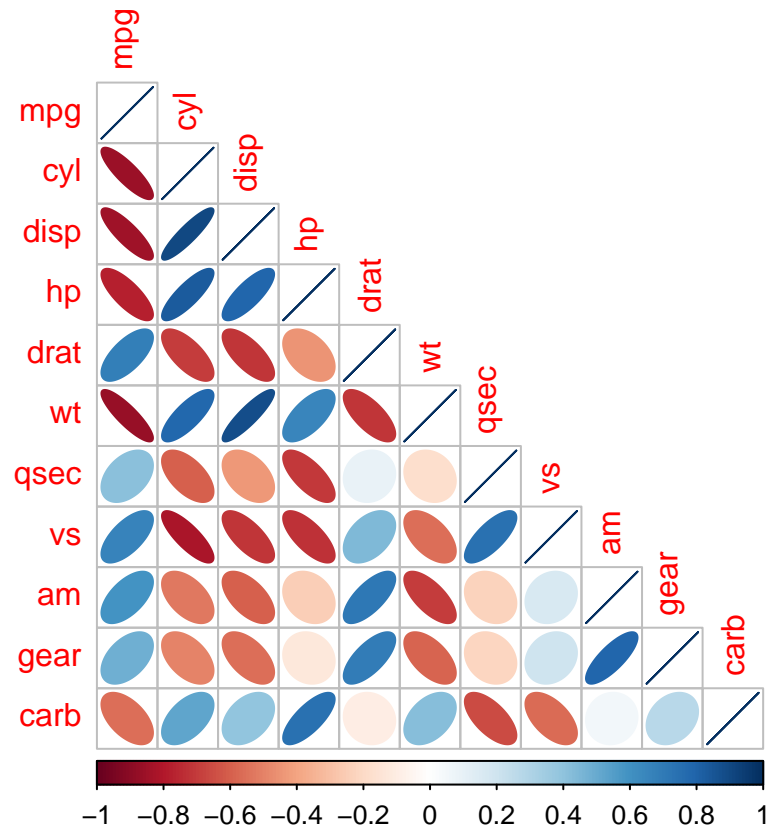```
corrplot(car, method = "number", type= "lower")
```

square

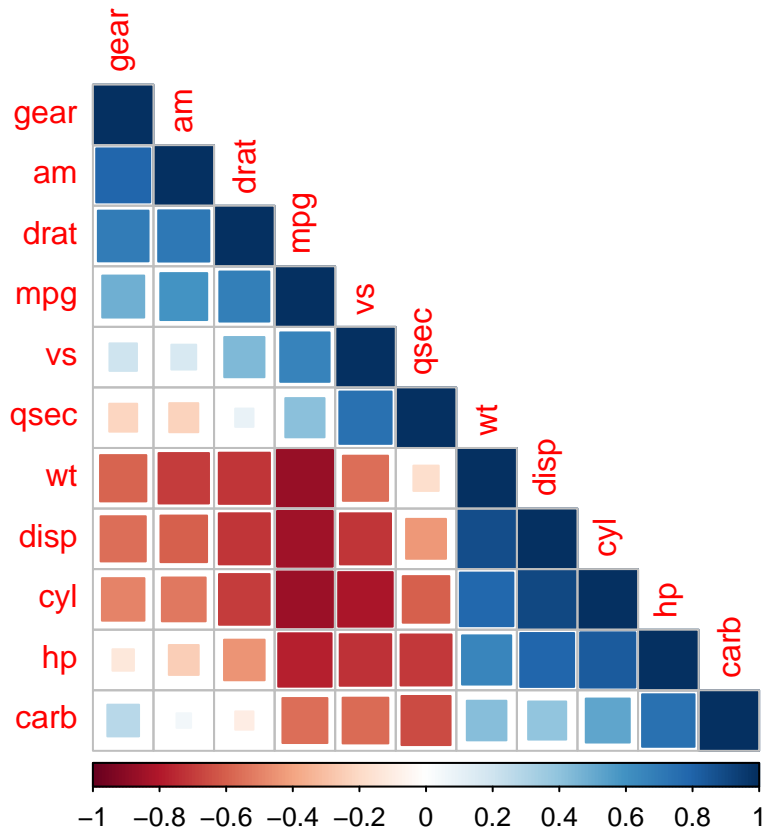```
corrplot(car, method = "square", type= "lower")
```
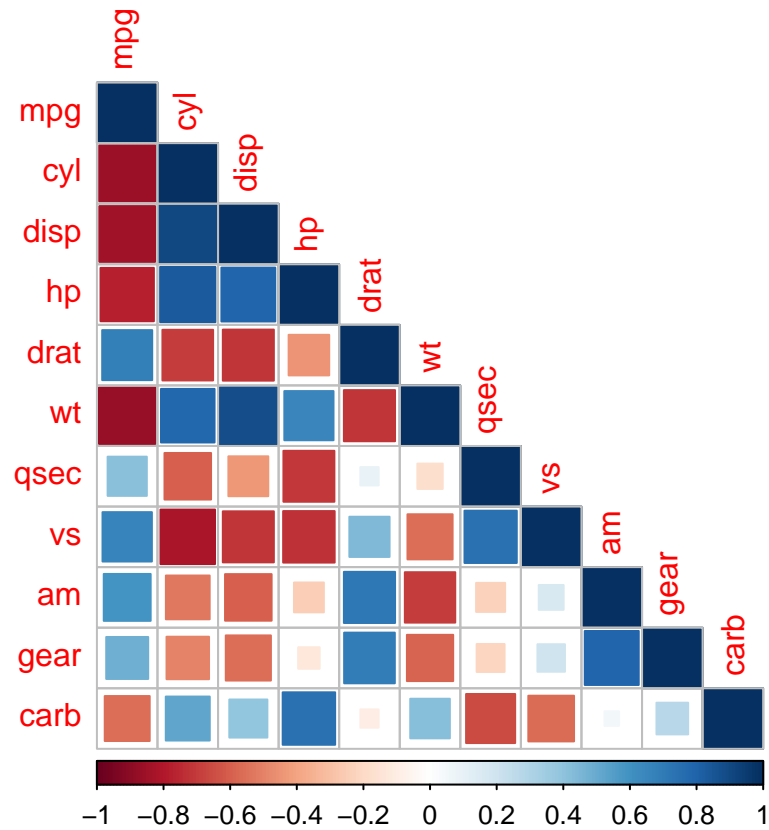
Ellipsis

```
corrplot(car, method = "ellipse", type= "lower")
```

Order of corrlation

```
corrplot(car, method = "square", type= "lower", order = 'AOE')
```
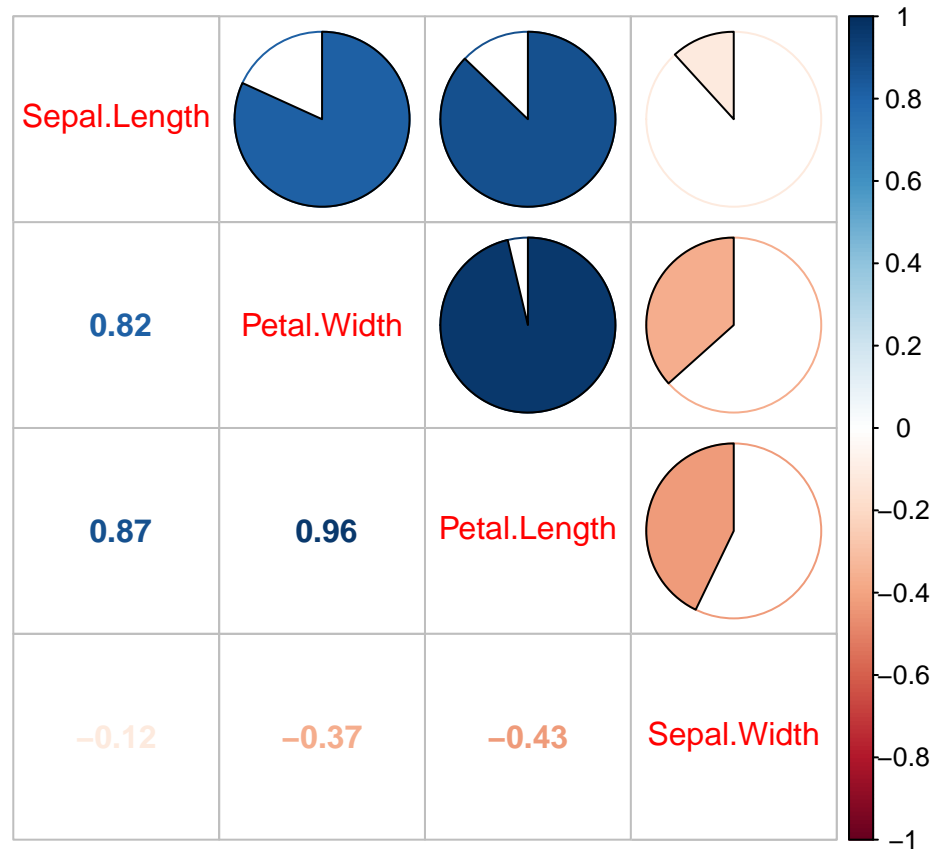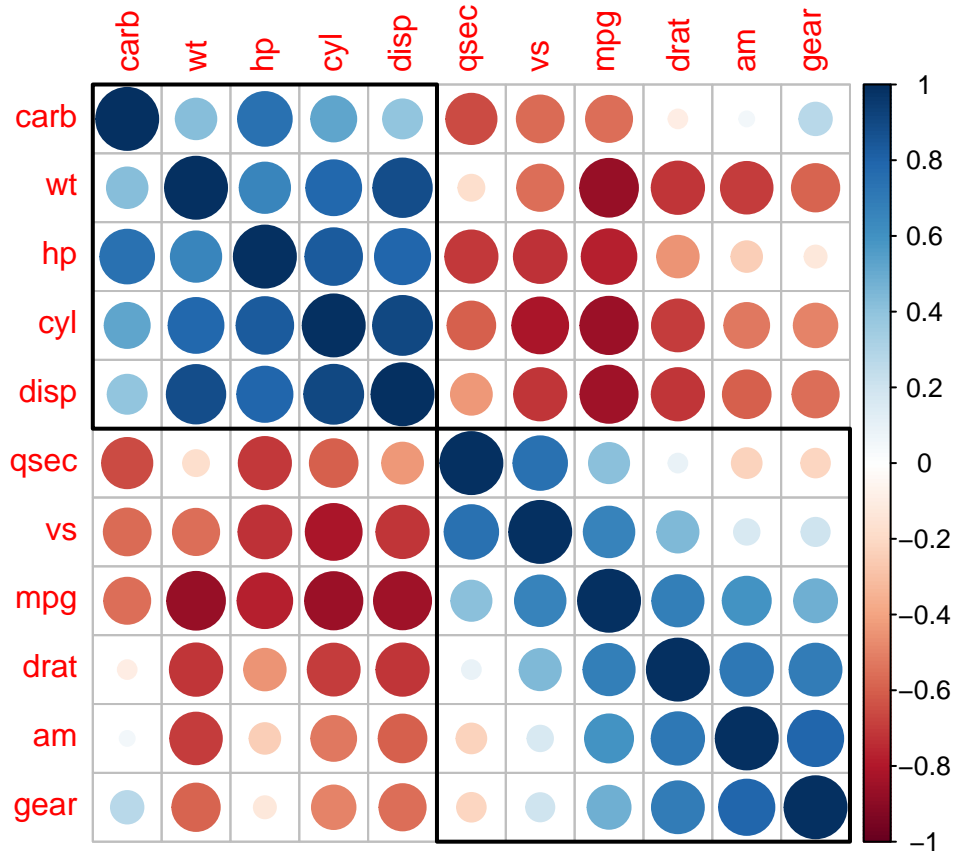
Mixed corrplot

```
corrplot.mixed(c)
```

```
corrplot.mixed(c, lower = "number", upper = "pie",  order = 'AOE')
```

Clusstering

```
corrplot(car, order = 'hclust', addrect = 2)
```

for more information visit this link https://cran.r-project.org/web/packages/corrplot/vignettes/corrplot-intro.html

Another Method

```
library(PerformanceAnalytics)
```

```
## Loading required package: xts
```

```
## Loading required package: zoo
```

```
##
## Attaching package: 'zoo'
```

```
## The following objects are masked from 'package:base':
##
##     as.Date, as.Date.numeric
```
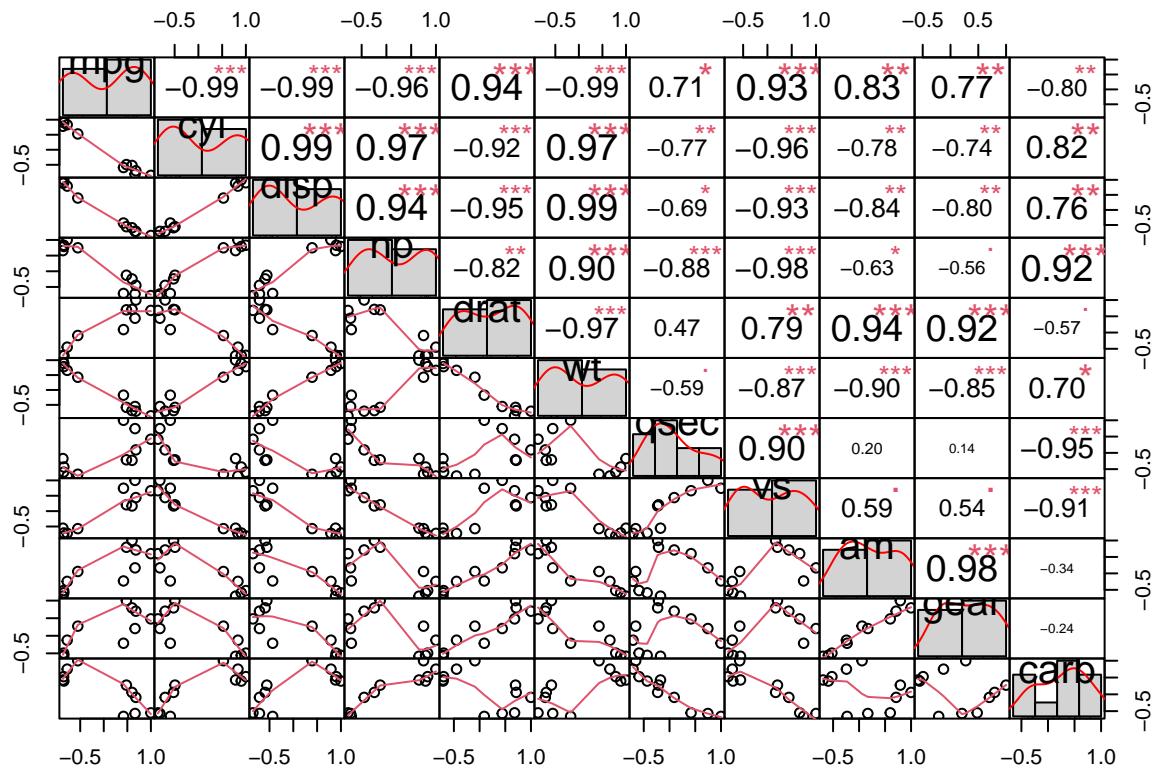
```
##
## Attaching package: 'PerformanceAnalytics'
```

```
## The following object is masked from 'package:graphics':
##
##     legend
```

```
chart.Correlation(car, method = "pearson", histogram = TRUE)
```

Alos see this link: https://r-coder.com/correlation-plot-r/