# Assignment1107

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Using the 'cars' data set built in to R Studio, do the following:

1. Generate a scatter plot of the data
2. Find the correlation between the speed and distance variables
3. Generate a linear regression model and show it's summary

```
?mtcars
```

```
## starting httpd help server ... done
```

```
pairs(~mpg+cyl+disp+hp+drat+wt+qsec+vs+am+gear+carb,data = mtcars,
    main = "Scatterplot Matrix")
```


Scatterplot Matrix
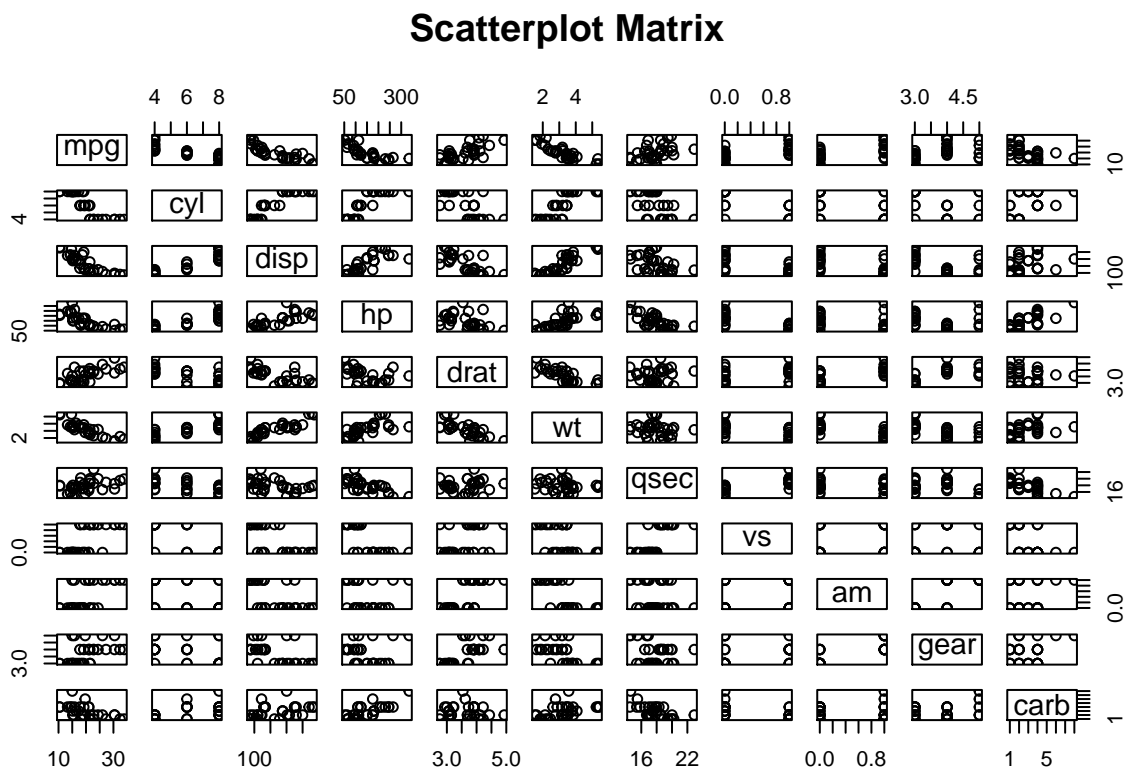
```
#cor.test(mtcars$qsec,mtcars$disp,method = c("pearson", "kendall", "spearman"))
cor(mtcars$qsec,mtcars$disp)
```

```
## [1] -0.4336979
```

1

```r
multi_linear <- lm(mpg~cyl+disp+hp+drat+wt+qsec+vs+am+gear+carb,data=mtcars)
summary(multi_linear)
```

```
##
## Call:
## lm(formula = mpg ~ cyl + disp + hp + drat + wt + qsec + vs +
##     am + gear + carb, data = mtcars)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -3.4506 -1.6044 -0.1196  1.2193  4.6271
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept) 12.30337   18.71788   0.657   0.5181
## cyl         -0.11144    1.04502  -0.107   0.9161
## disp         0.01334    0.01786   0.747   0.4635
## hp          -0.02148    0.02177  -0.987   0.3350
## drat         0.78711    1.63537   0.481   0.6353
## wt          -3.71530    1.89441  -1.961   0.0633 .
## qsec         0.82104    0.73084   1.123   0.2739
## vs           0.31776    2.10451   0.151   0.8814
## am           2.52023    2.05665   1.225   0.2340
## gear         0.65541    1.49326   0.439   0.6652
## carb        -0.19942    0.82875  -0.241   0.8122
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 2.65 on 21 degrees of freedom
## Multiple R-squared:  0.869,  Adjusted R-squared:  0.8066
## F-statistic: 13.93 on 10 and 21 DF,  p-value: 3.793e-07
```