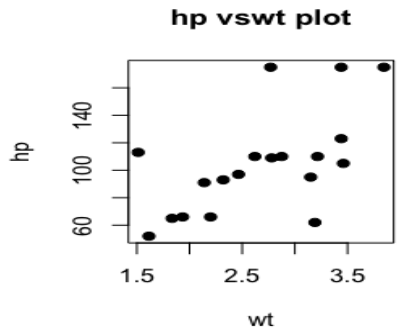
```
#U49253220

rm(list=ls())
x= matrix(c(120,90,40,110,95,45,30,50,40),ncol = 3,byrow=TRUE)
colnames(x)=c("Republican","Democrat","Independent")
rownames(x)=c("Male","Female","Not Declared")
data=as.table(x)
data.out=chisq.test(data)

#Null Hypothesis
#All the variables are independent

#df=no.of rows - 1* no.of columns - 1  3-1*3-1=4
#p value for the test is 0.000066655
#p value is the probability of independence
#we reject the null hypothesis as p is less than 0.5

y=subset(mtcars,mpg>=18 & wt<=4)
attach(y)

plot(wt,hp,pch=19,main="hp vswt plot")
```




```
cor(wt,hp,method = "pearson")
[1] 0.5980204

#There is 59% correlation between wt and hp variables.
M1=cor.test(wt,hp,method="pearson")
z=lm(hp~wt, data=y)
summary(z)
Call:
lm(formula = hp ~ wt, data = y)
Residuals:
    Min      1Q  Median      3Q     Max
-59.657 -16.537  -1.390   5.244  67.032
```

```
Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)    17.68      29.19   0.606  0.55272
wt             32.59      10.59   3.076  0.00684 **
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 30.72 on 17 degrees of freedom
Multiple R-squared:  0.3576,  Adjusted R-squared:  0.3198
F-statistic: 9.464 on 1 and 17 DF,  p-value: 0.006841

#the null Hypothesis is that there is no correlation between wt and hp
#test-statistic value is 3.12
#we can say there is a correlation between wt and hp
```