**Example 1 (Simple Linear Regression):**

Fit a straight line to Y = (number of) Jobs as a function of X = GPA to the following data:

| GPA | Jobs |
|---|---|
| 3.5 | 24 |
| 3.3 | 23 |
| 2.6 | 18 |
| 2.8 | 20 |
| 3 | 22 |
| 2.3 | 15 |
| 2.4 | 17 |
| 2.7 | 17 |
| 3.2 | 22 |
| 3.5 | 25 |
| 2.9 | 21 |
| 3.5 | 25 |
| 2.2 | 13 |
| 3.8 | 27 |
| 2.7 | 18 |

Open the data file JOB_GPA.csv in R.

```
d1<-read.csv("g:/Stats24x7/R/JOB_GPA.csv",header=TRUE)
> attach(d1)
> names(d1)
[1] "GPA"  "Jobs"
```

Read the datafile JOB_GPA.csv in R.
Attach the dataframe d2.

Look at the variable names.

```
> l1 <- lm(Jobs~GPA, data = d1)
```

Fit Job = a + b GPA in R.

```
> l1

Call:
lm(formula = Jobs ~ GPA, data = d1)

Coefficients:
(Intercept)         GPA
     -3.452       8.081
```

OUTPUT from R.
R created an object l1.

```
> summary(l1)

Call:
lm(formula = Jobs ~ GPA, data = d1)

Residuals:
    Min      1Q  Median      3Q     Max
-1.3657 -0.3859 -0.1335  0.6343  1.2101

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  -3.4518     1.3796  -2.502   0.0265 *
GPA           8.0806     0.4602  17.558 1.95e-10 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.8456 on 13 degrees of freedom
Multiple R-squared: 0.9595,     Adjusted R-squared: 0.9564
F-statistic: 308.3 on 1 and 13 DF,  p-value: 1.951e-10
```

OUTPUT from R.

```
> names(l1)
 [1] "coefficients"  "residuals"     "effects"       "rank"
 [5] "fitted.values" "assign"        "qr"            "df.residual"
 [9] "xlevels"       "call"          "terms"         "model"
> qqnorm(l1$residuals)
> qqline(l1$residuals)
```

Names of the object l1:
Assess normality of residuals by drawing Q-Q plot in R.