Business Analytics Assignment1

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##Install the ISLR library using the install.packages() command

```r
install.packages("ISLR")
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.2'
## (as 'lib' is unspecified)
```

```r
library(ISLR)
```

```r
install.packages("knitr")
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.2'
## (as 'lib' is unspecified)
```

```r
library(knitr)
install.packages("tinytex")
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.2'
## (as 'lib' is unspecified)
```

```r
tinytex::install_tinytex(force=TRUE)
```

```
## tlmgr option sys_bin ~/bin
```

```
## tlmgr option repository 'https://ctan.mirrors.hoobly.com/systems/texlive/tlnet'
```

```
## tlmgr update --list
```

importinmg carseats dataset

```r
library(ISLR)
CarseatsData<-Carseats
summary(CarseatsData)
```

```
##      Sales          CompPrice        Income        Advertising
## Min.   : 0.000   Min.   : 77   Min.   : 21.00   Min.   : 0.000
## 1st Qu.: 5.390   1st Qu.:115   1st Qu.: 42.75   1st Qu.: 0.000
## Median : 7.490   Median :125   Median : 69.00   Median : 5.000
## Mean   : 7.496   Mean   :125   Mean   : 68.66   Mean   : 6.635
## 3rd Qu.: 9.320   3rd Qu.:135   3rd Qu.: 91.00   3rd Qu.:12.000
## Max.   :16.270   Max.   :175   Max.   :120.00   Max.   :29.000
##    Population        Price        ShelveLoc       Age           Education
## Min.   : 10.0   Min.   : 24.0   Bad   : 96   Min.   :25.00   Min.   :10.0
## 1st Qu.:139.0   1st Qu.:100.0   Good  : 85   1st Qu.:39.75   1st Qu.:12.0
## Median :272.0   Median :117.0   Medium:219   Median :54.50   Median :14.0
## Mean   :264.8   Mean   :115.8                Mean   :53.32   Mean   :13.9
## 3rd Qu.:398.5   3rd Qu.:131.0                3rd Qu.:66.00   3rd Qu.:16.0
## Max.   :509.0   Max.   :191.0                Max.   :80.00   Max.   :18.0
## Urban       US
## No :118   No :142
## Yes:282   Yes:258
##
##
##
##
```

Carseat dataset has 400 observations and 11 variables

```
str(CarseatsData)
```

```
## 'data.frame':    400 obs. of  11 variables:
##  $ Sales      : num  9.5 11.22 10.06 7.4 4.15 ...
##  $ CompPrice  : num  138 111 113 117 141 124 115 136 132 132 ...
##  $ Income     : num  73 48 35 100 64 113 105 81 110 113 ...
##  $ Advertising: num  11 16 10 4 3 13 0 15 0 0 ...
##  $ Population : num  276 260 269 466 340 501 45 425 108 131 ...
##  $ Price      : num  120 83 80 97 128 72 108 120 124 124 ...
##  $ ShelveLoc  : Factor w/ 3 levels "Bad","Good","Medium": 1 2 3 3 1 1 3 2 3 3 ...
##  $ Age        : num  42 65 59 55 38 78 71 67 76 76 ...
##  $ Education  : num  17 10 12 14 13 16 15 10 10 17 ...
##  $ Urban      : Factor w/ 2 levels "No","Yes": 2 2 2 2 2 1 2 2 1 1 ...
##  $ US         : Factor w/ 2 levels "No","Yes": 2 2 2 2 1 2 1 2 1 2 ...
```

Maximum value of avertising attribute is 29.000

```
summary(CarseatsData$Advertising)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   0.000   5.000   6.635  12.000  29.000
```
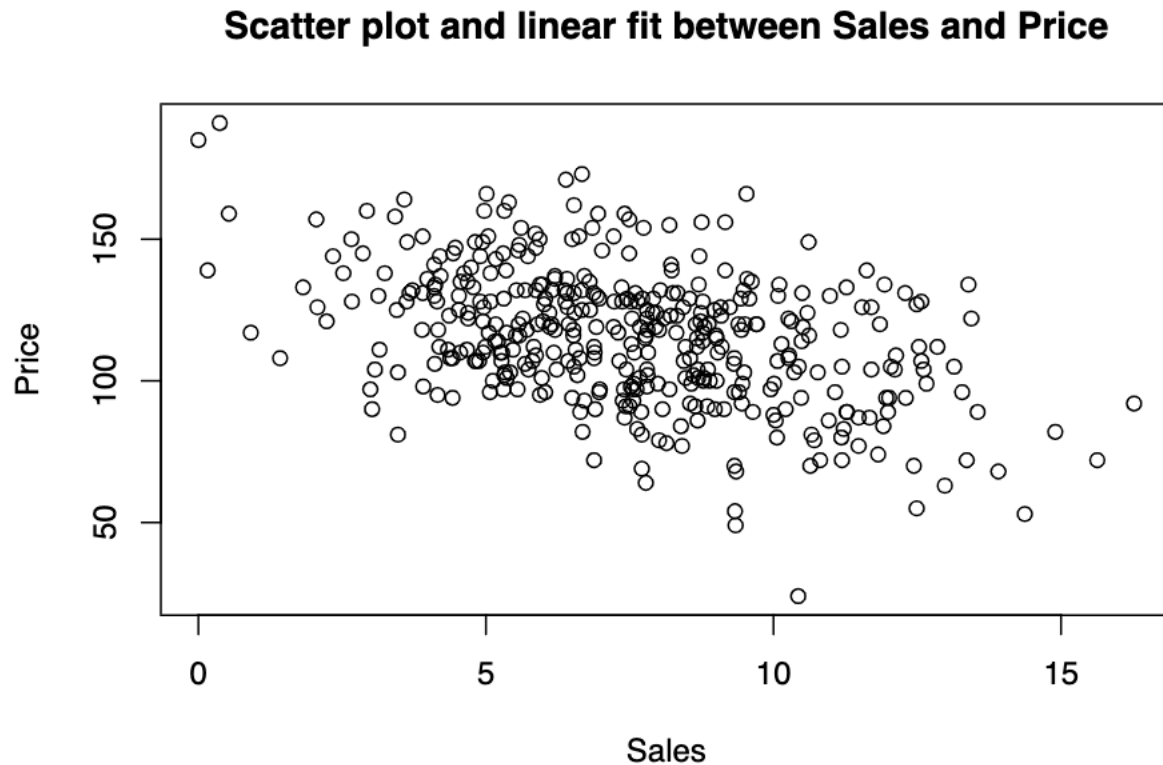
IQR of Price Attribute

```
IQR(CarseatsData$Price)
```

```
## [1] 31
```

##Plot between Sales and Price

```
plot(CarseatsData$Sales, CarseatsData$Price, main="Scatter plot and linear fit between Sales and Price"
```

Scatter plot and linear fit between Sales and Price

correlation of Price and sales

```
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
cor(select(CarseatsData,1,6))
```

```
##              Sales      Price
## Sales   1.0000000 -0.4449507
## Price  -0.4449507  1.0000000
```

The corelation coefficient values above suggest there is weak negative linear corelation between both the attributes.