# Assignment 1

```r
# Installing package ISLR

library(ISLR)
library(latexpdf)
```

```r
# Summary and Number of rows in Carseats dataset

summary(Carseats)
```

```
##      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
##
##
##
##
```

```r
nrow(Carseats)
```

```
## [1] 400
```

```r
# Maximum Value of Carseat

max(Carseats$Advertising)
```
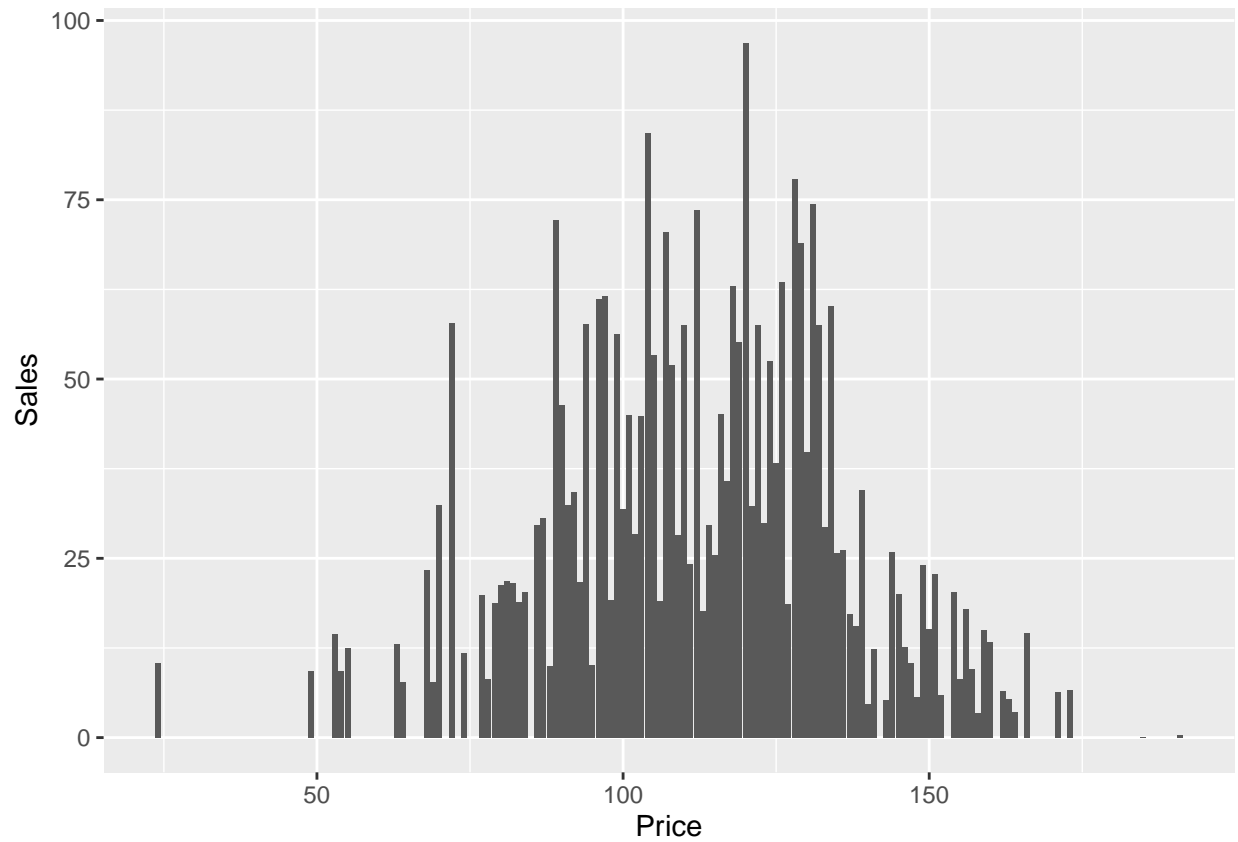
```
## [1] 29
```

```r
# IQR of Price Attribute

IQR(Carseats$Price)
```

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

```
# Plotting Sales against Price
library(ggplot2)
ggplot(Carseats, aes (x= Price, y= Sales)) + geom_col()
```



```
# Finding Corelation coefficient

x<- Carseats$Price
y<- Carseats$Sales
cor(x,y)
```

```
## [1] -0.4449507
```

```
# The correlation coefficient is -0.4449507.
# A (-ve) correlation indicates two variables (Sales and Price) that tend to move in opposite direction
# A correlation coefficient of -0.8 or lower indicates a strong negative relationship.
```