R Base Plots

Sandeep Kumar

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Plots using Base R Commands

Single Continuos Variable: (dataset Chickwts)

1. Histogram - hist()
2. Density plot - plot()
3. Box-Whisker Plot - boxplot()

Single Discrete Variable: (dataset chickwts)

4. Bar Chart - barplot()

Two Continuous Variable : (dataset cars)

5. Scatter Plot - plot()

Two Variable: One Continuous, One Discrete (Dataset chickwts)

6. Box-Whisker Plot - boxplot() - see 3 above as well
7. Pie Chart - pie()
8. Dot Chart - dotchart()
9. Strip Chart - stripchart()

Two Variables: Both Discrete (Dataset ggplot2::mpg)

10. Mosaic Plot

Time series: (Dataset LakeHuron)

11. Line Charts - plot()

Understanding a Single Continuous Numeric Variable

1. Histogram

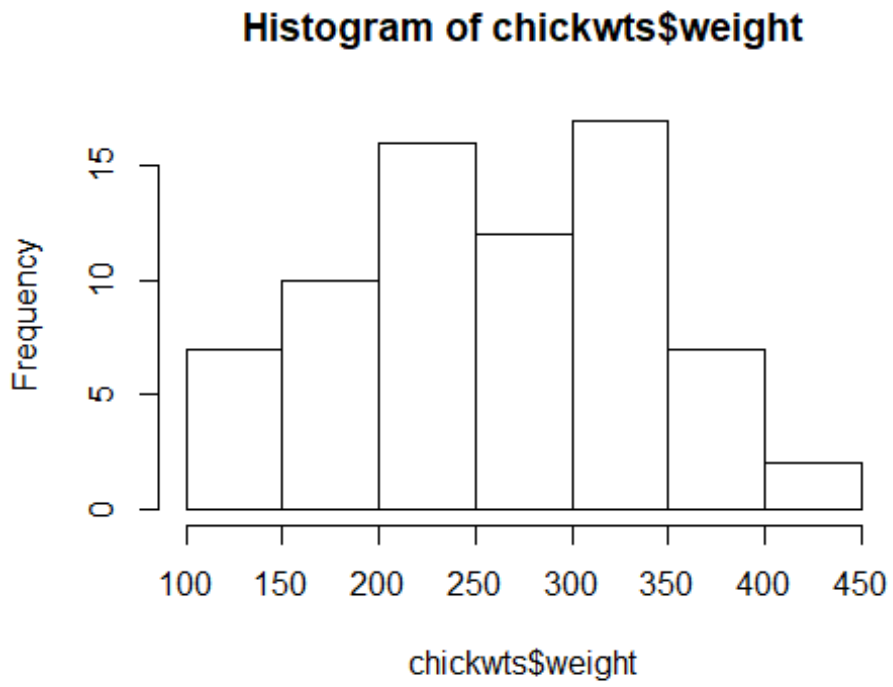
```
str(chickwts)
```

```
## 'data.frame':    71 obs. of  2 variables:
##  $ weight: num  179 160 136 227 217 168 108 124 143 140 ...
##  $ feed  : Factor w/ 6 levels "casein","horsebean",..: 2 2 2 2 2 2 2 2 2 2
...
```

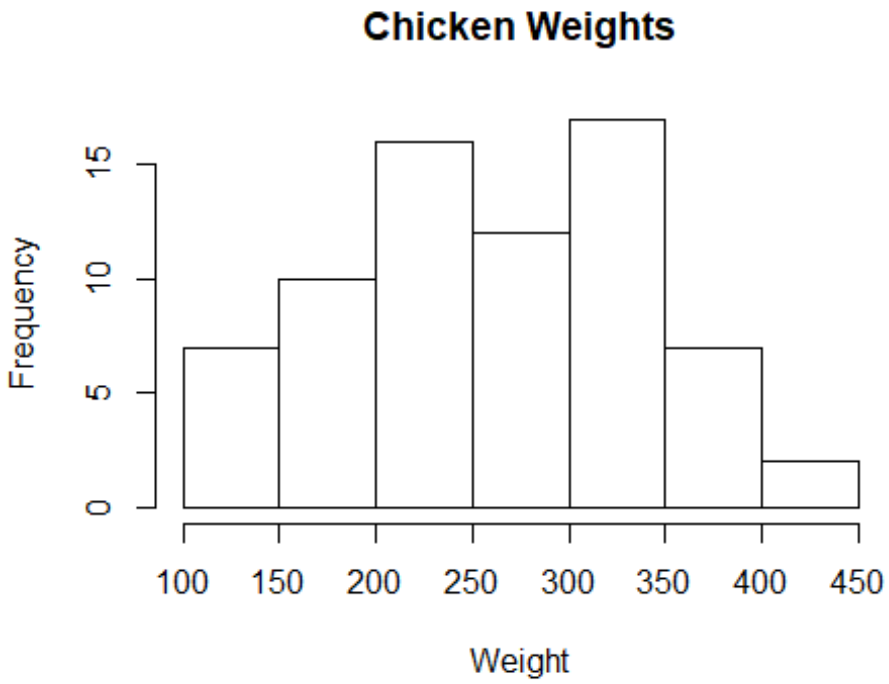
```r
head(chickwts)
```

```
##   weight      feed
## 1    179 horsebean
## 2    160 horsebean
## 3    136 horsebean
## 4    227 horsebean
## 5    217 horsebean
## 6    168 horsebean
```

```r
hist(chickwts$weight)
```

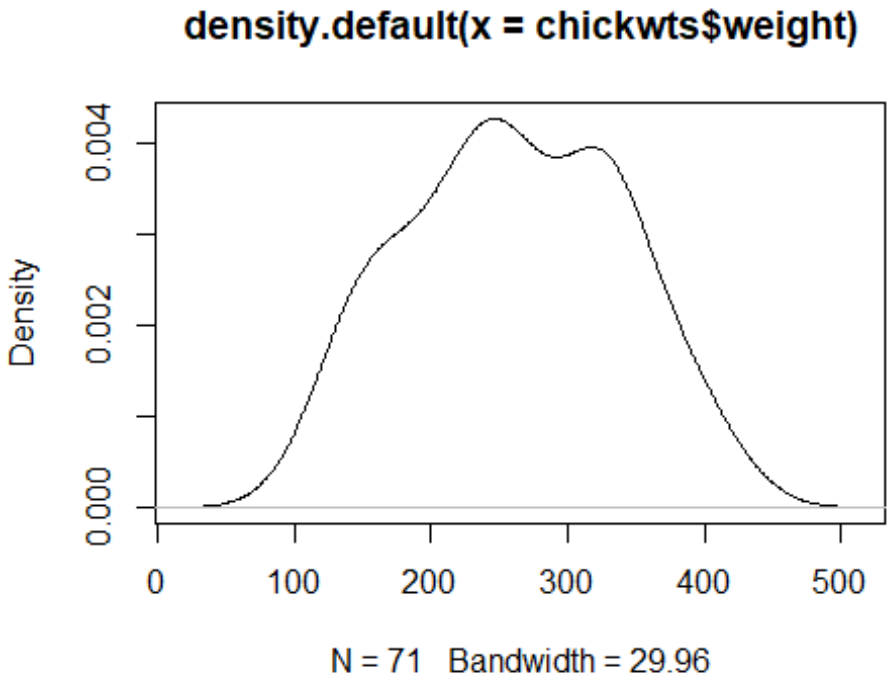



```r
hist(chickwts$weight, xlab="Weight", ylab= "Frequency", main="Chicken Weights")
```



2. Density Plot

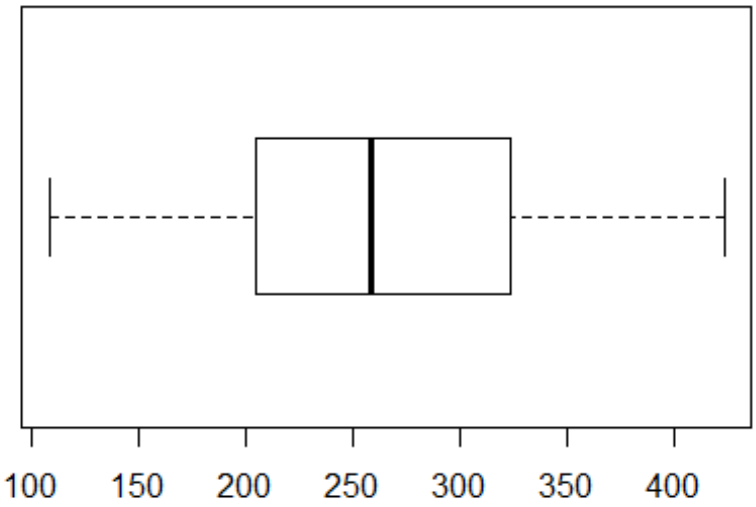
```
plot(density(chickwts$weight))
```



3. Box Plot (for one continuous variable)

Later on we will cover Box Plot for a continuous and discrete variable

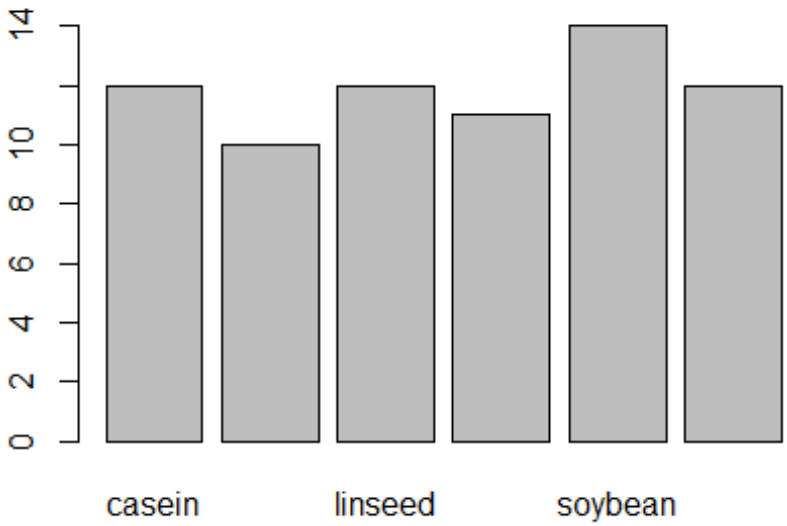
```
boxplot(chickwts$weight, horizontal = TRUE)
```



Understanding a Single Discrete Variable

4. Bar Chart

```
plot(chickwts$feed)
```

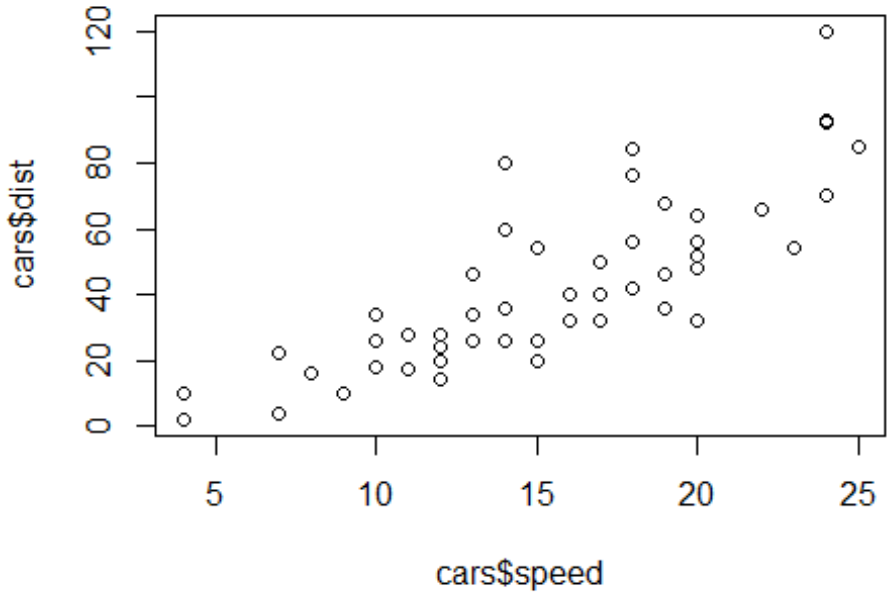


Understanding a two Variable - Continuous X, Continuous Y

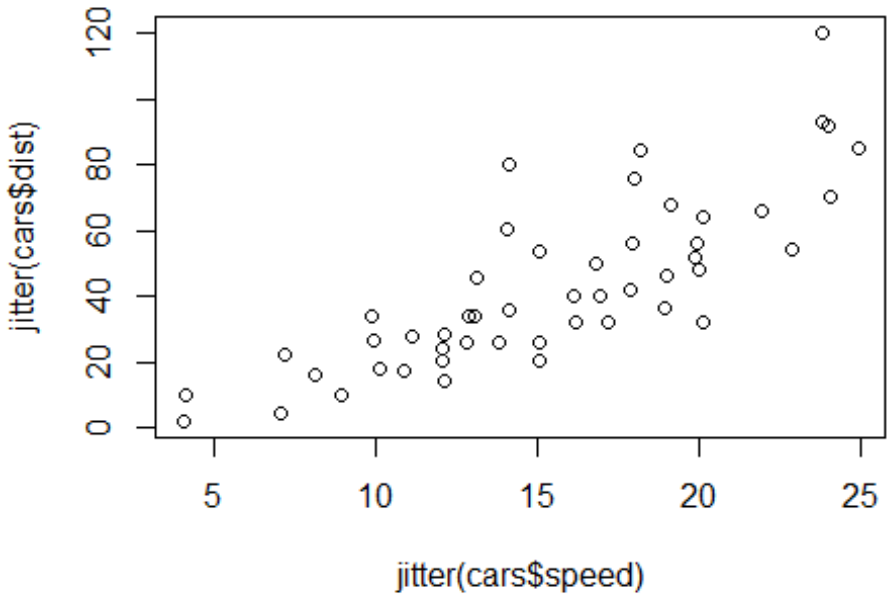
5. Scatter Plot

Cars Dataset

```
plot(cars$speed, cars$dist)
```



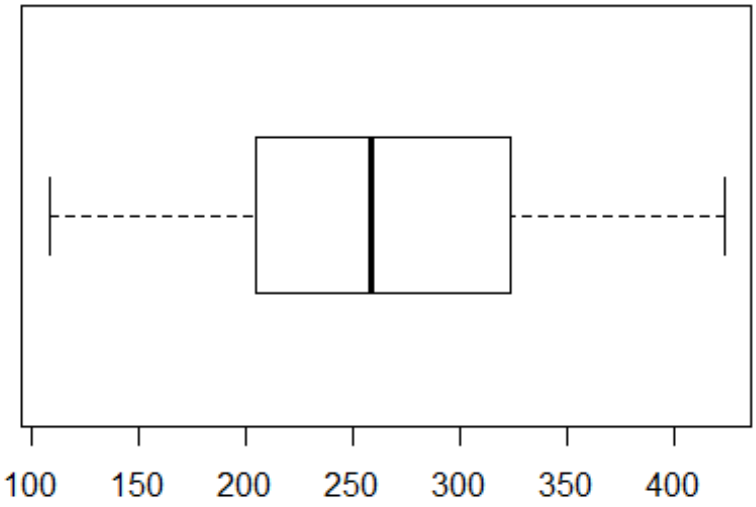

```r
plot(jitter(cars$speed), jitter(cars$dist))
```



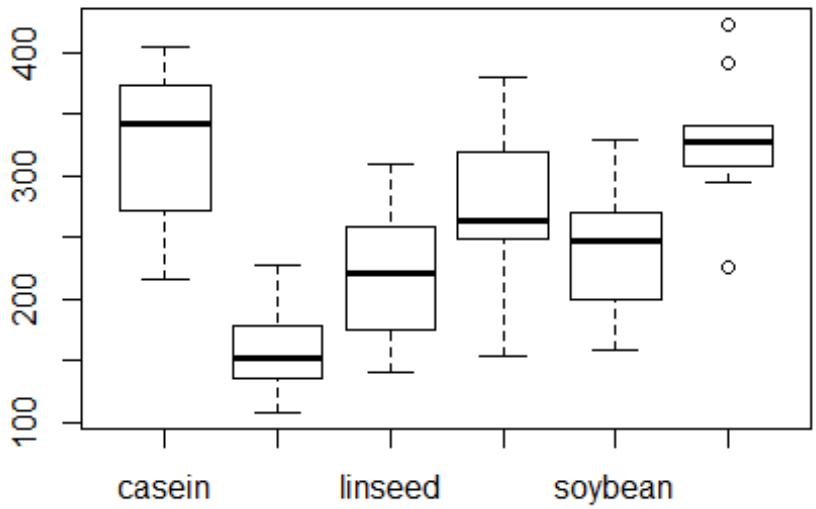
Understanding a two Variable - One Discrete , One Continuous

6. Box Plot

```
boxplot(chickwts$weight, horizontal = TRUE)
```

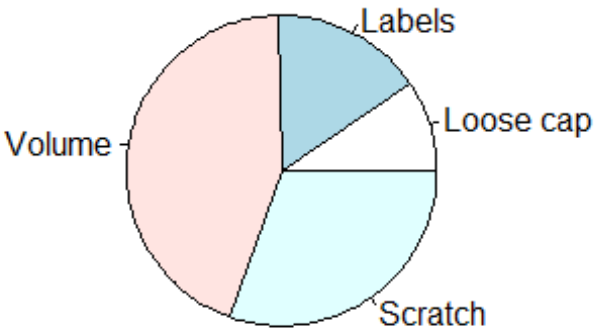



```
boxplot(chickwts$weight ~ chickwts$feed)
```



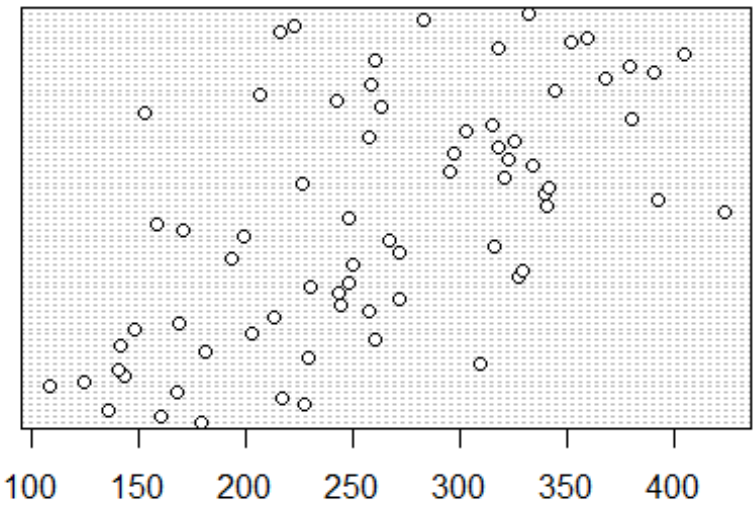
7. Pie Chart

```
defects=c(9,15,42,29)
names(defects)=c("Loose cap", "Labels", "Volume", "Scratch")
pie(defects)
```

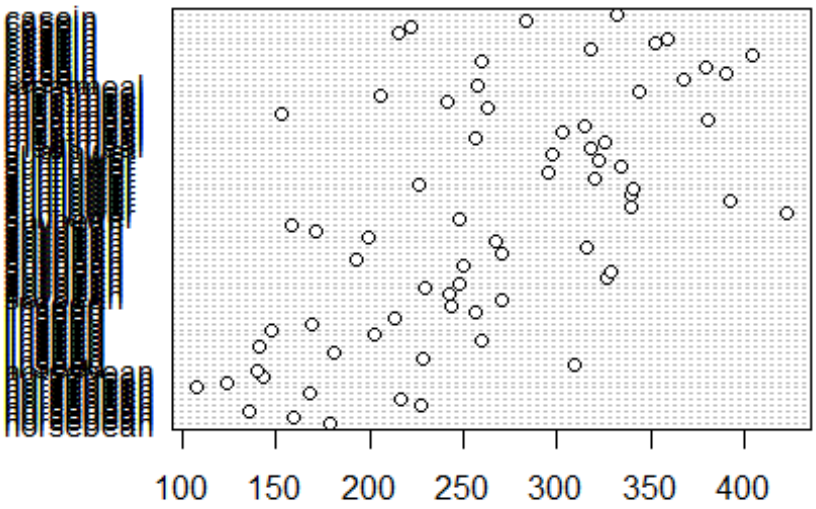


8. Dot Chart

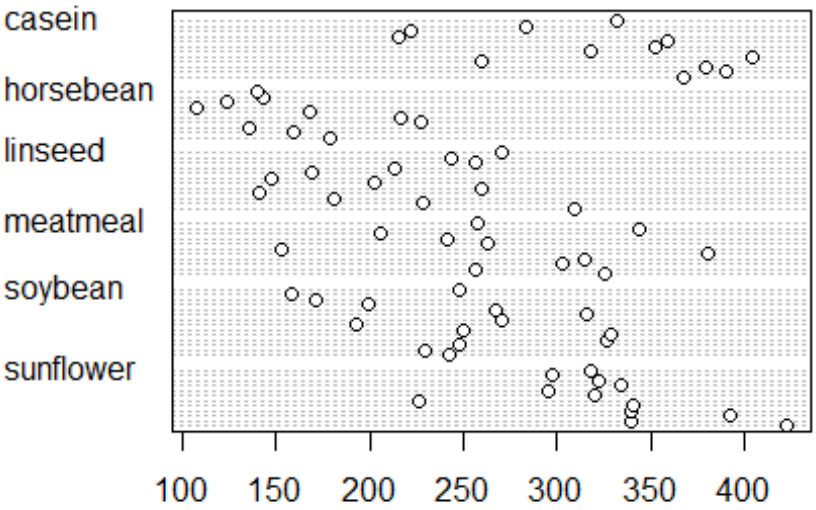
```
dotchart(chickwts$weight)
```



```r
dotchart(chickwts$weight, labels = chickwts$feed)
```

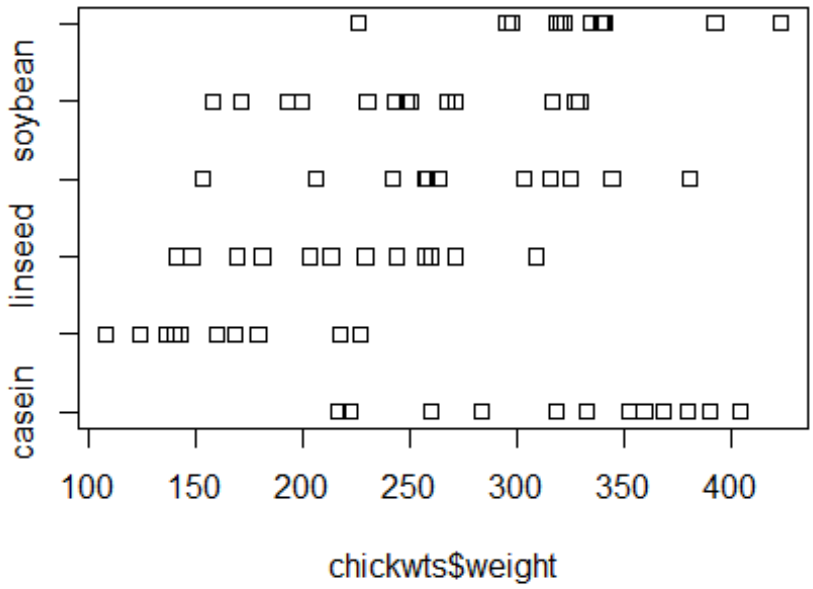



```r
dotchart(chickwts$weight, groups = chickwts$feed)
```



9. Strip Chart (collapse all dots to a single row)

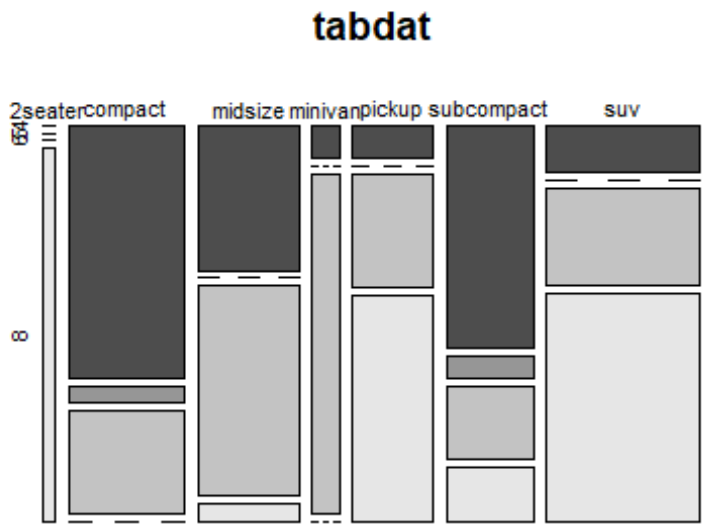
```
stripchart(chickwts$weight~ chickwts$feed)
```



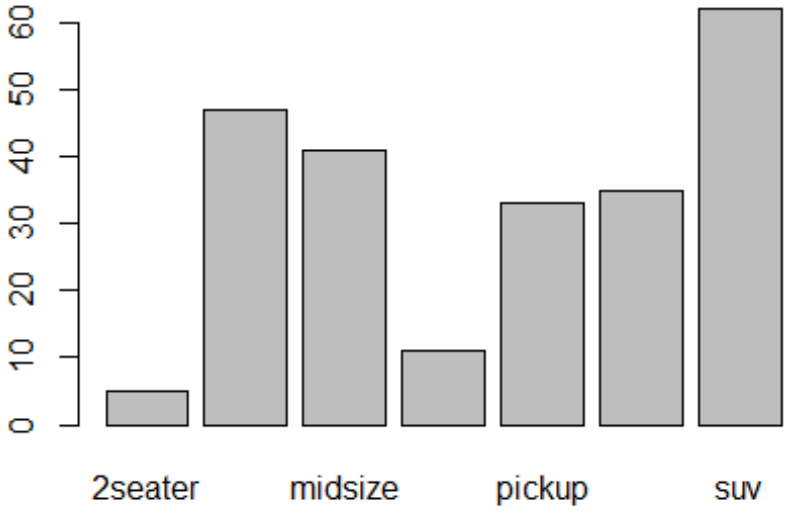
Understanding two discrete variables

10. Mosaic Plot

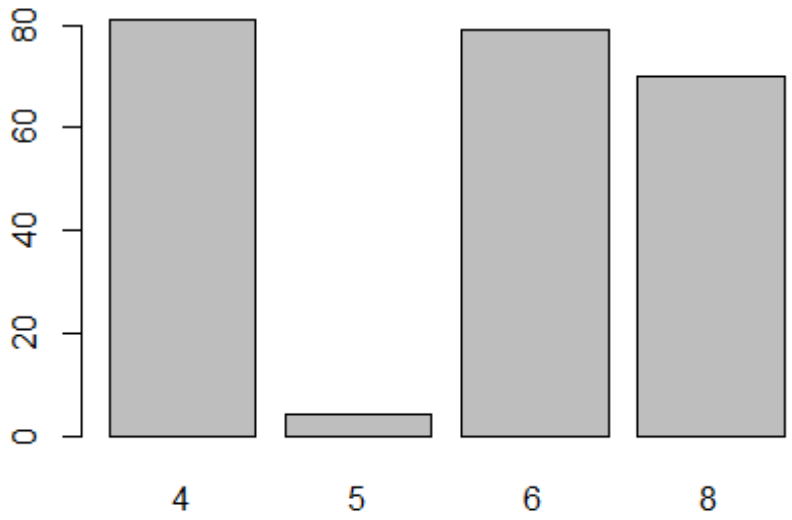
```
library(ggplot2)

## Warning: package 'ggplot2' was built under R version 3.4.3

tabdat <- table(mpg$class, mpg$cyl)
mosaicplot(tabdat, color = TRUE)
```




```
mpclass <- factor(mpg$class)
plot(mpclass)
```



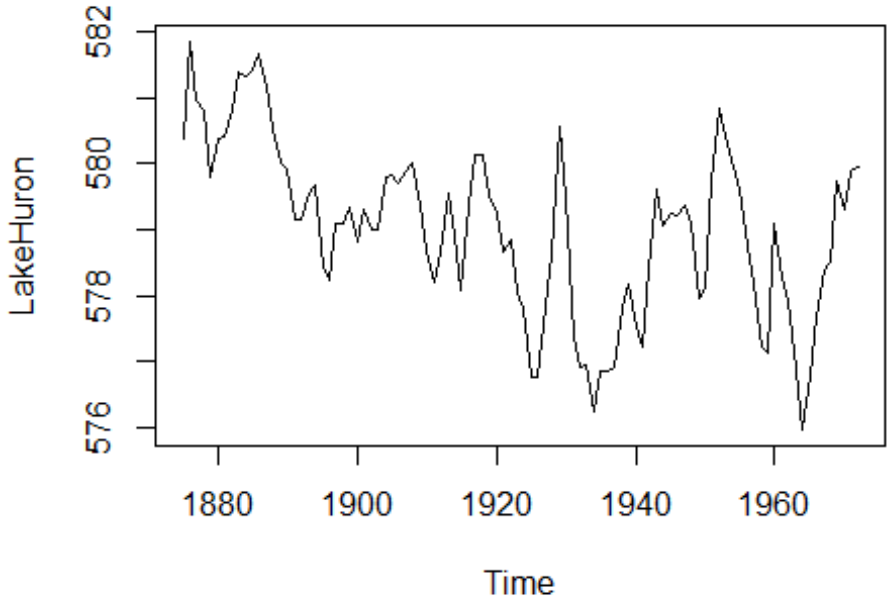
```r
mpcyl <- factor(mpg$cyl)
plot(mpcyl)
```



Time Series

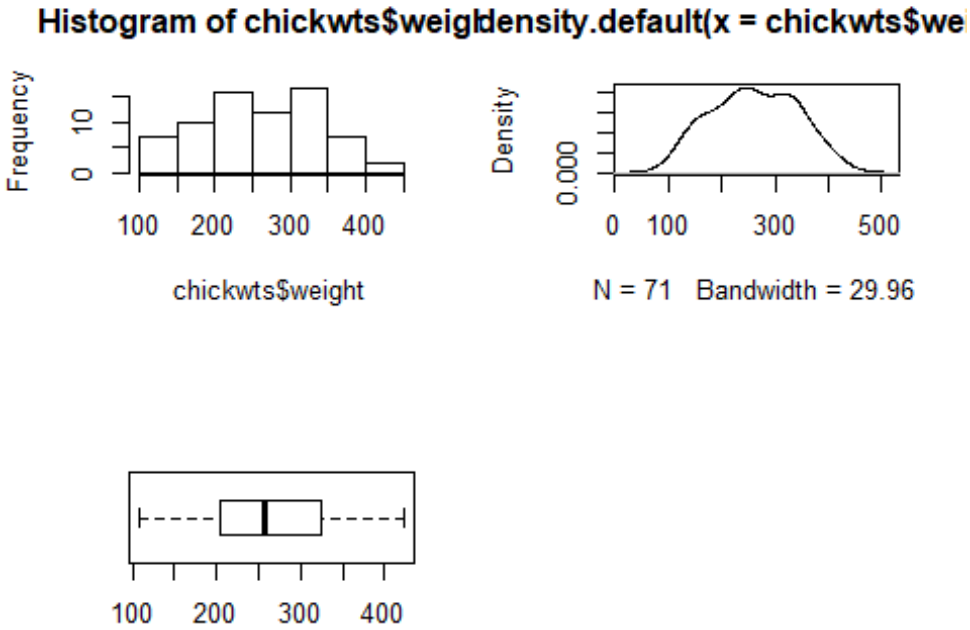
10. Line Chart

```r
plot(LakeHuron, type="l")
```



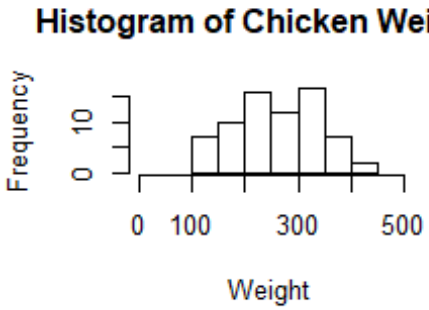
Multiple Plots

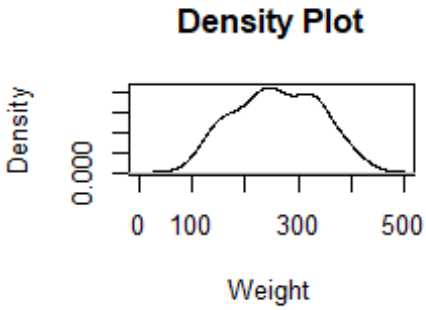
```
par(mfrow=c(2,2))

hist(chickwts$weight)
plot(density(chickwts$weight))
boxplot(chickwts$weight, horizontal = TRUE)
```

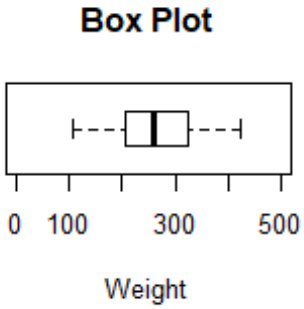


Lets add titles to these graphs

```
par(mfrow=c(2,2))

hist(chickwts$weight, main="Histogram of Chicken Weights", xlab="Weight",
ylab="Frequency", xlim = c(0,500))
plot(density(chickwts$weight), main="Density Plot", xlab="Weight",
ylab="Density", xlim = c(0,500))
boxplot(chickwts$weight, horizontal = TRUE, main="Box Plot", xlab="Weight",
ylim = c(0,500))
```


Histogram of Chicken Weight
Frequency
0
10
0
100
300
500
Weight


Density Plot
Density
0.000
0
100
300
500
Weight


Box Plot
0
100
300
500
Weight