Explotary_Data_Analysis

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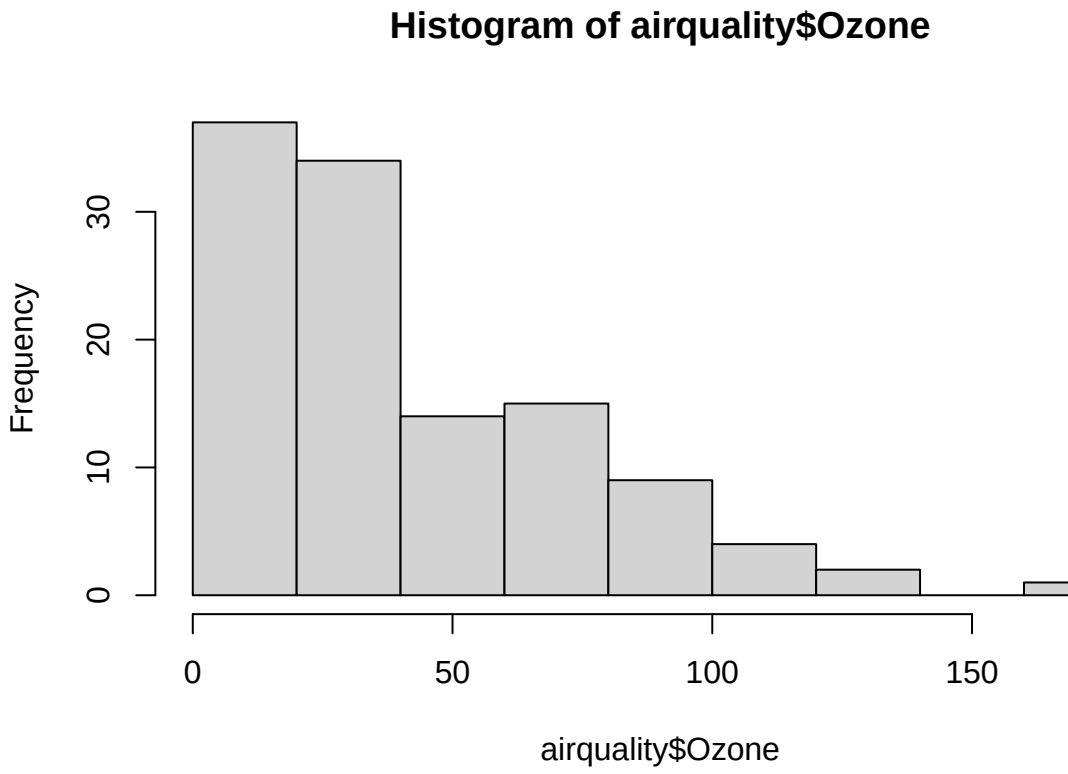
Base plotting system

Including two packages: graphics and grDevices.

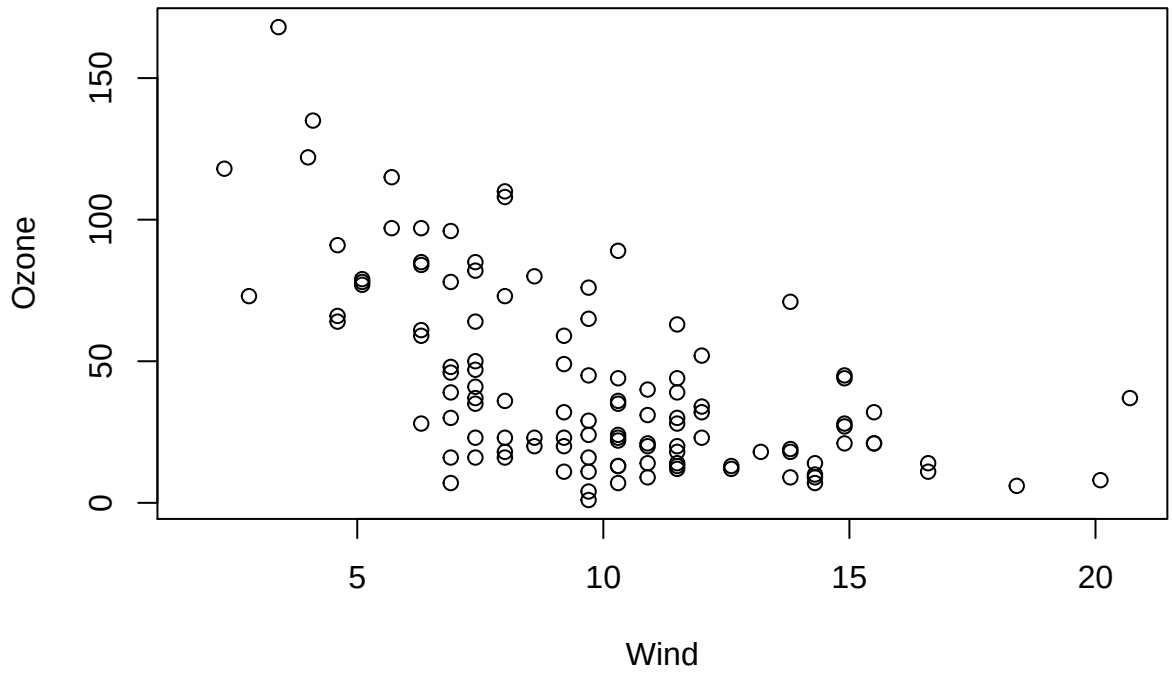
Process of making plot:
1. Initial a new plot. Using the "plot(x,y)" or "hist(x)".
2. Annotate the existing plot.
Note: Using "?par" to know the parameters. "Par()" is the function that set parameters for all the plots in the R session and could over-ride the local parameters.(parameters such as "mfrow", "mfcol")

```
hist(airquality$Ozone)
```

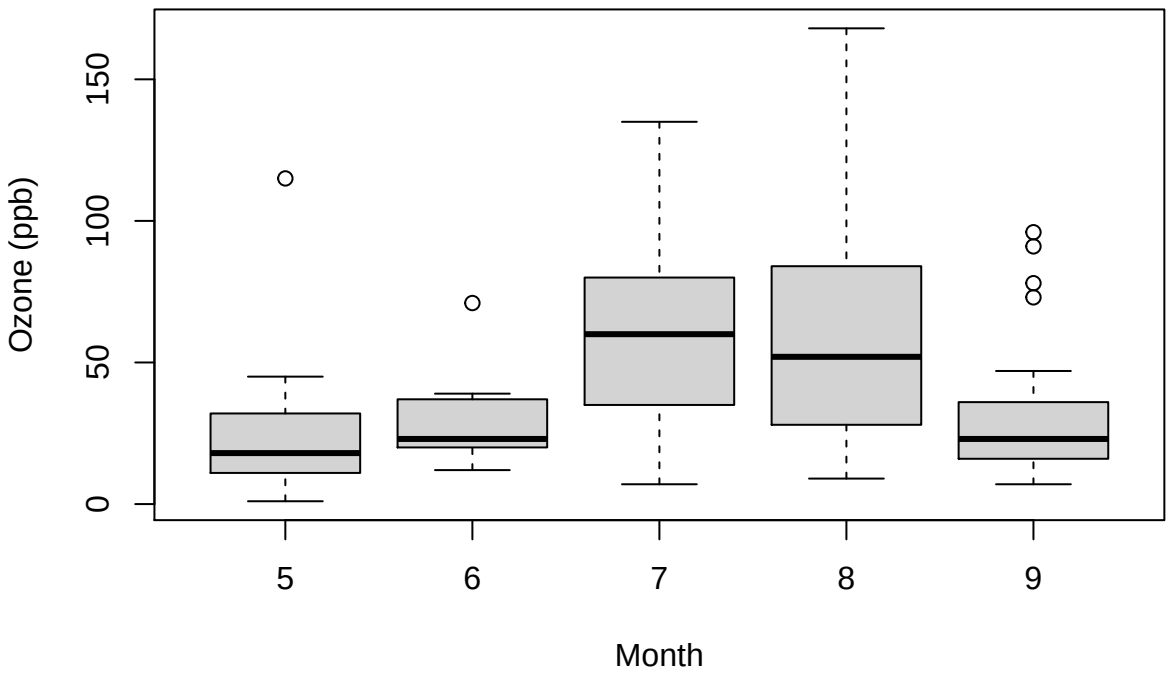


1. Ways to initial the plot.

```r
with(airquality, plot(Wind, Ozone))
```




```r
airquality <- transform(airquality, Month = factor(Month))
boxplot(Ozone ~ Month, airquality, xlab = "Month", ylab = "Ozone (ppb)")
```




```
par("lty")
```

```
## [1] "solid"
```

```
par("col")
```

```
## [1] "black"
```

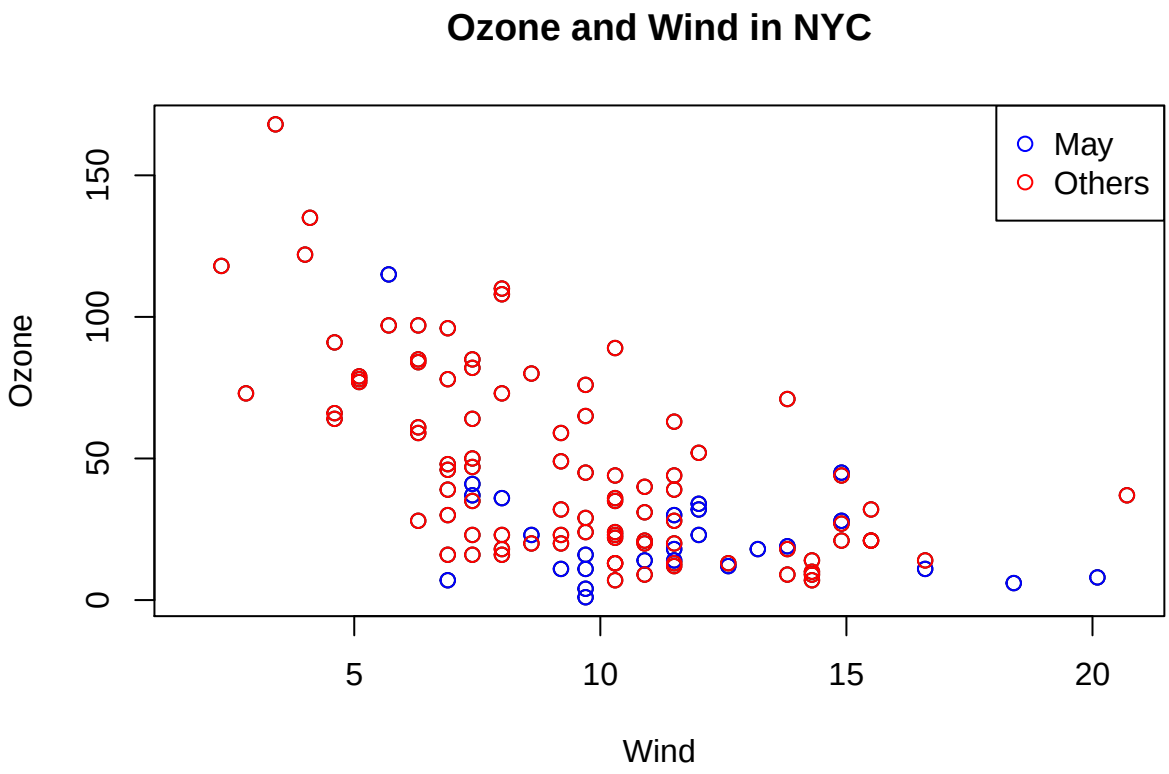
```
par("mfrow")
```

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

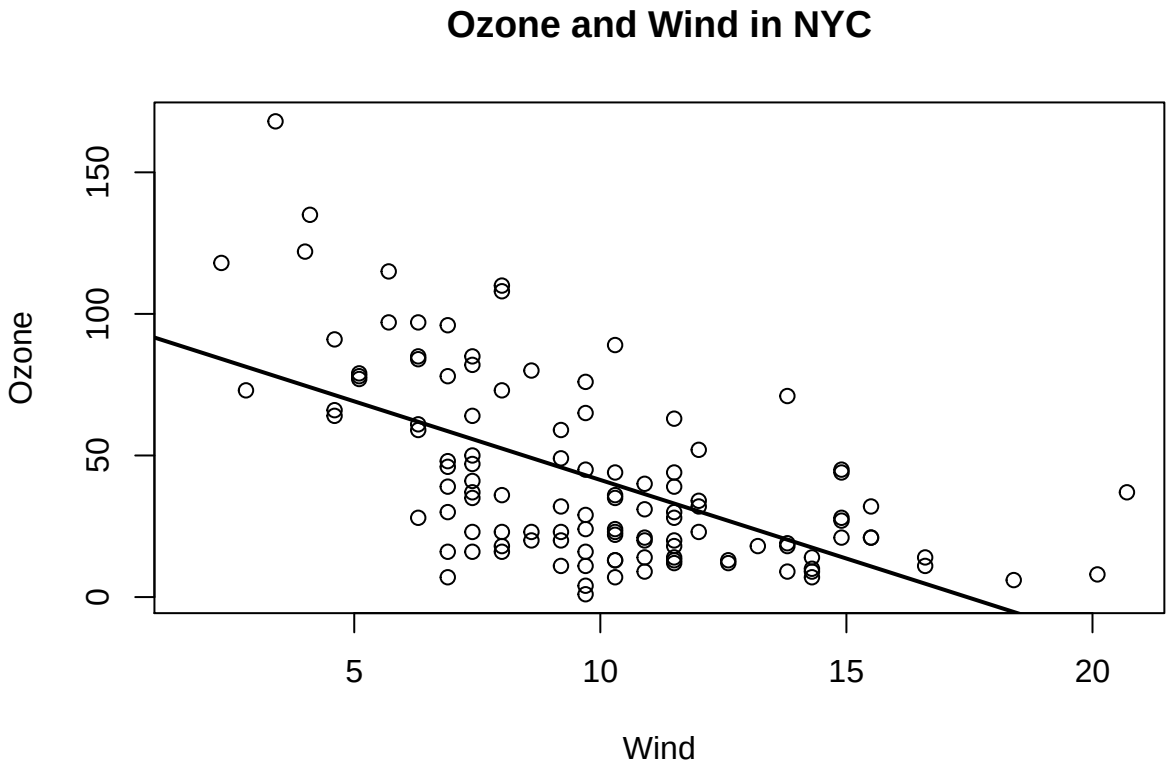
2. Annotate the existing plot.

- Base ploting functions: plot, lines, points, text(add text labele), title, mtext(add text to margin), axis(add axis ticks).

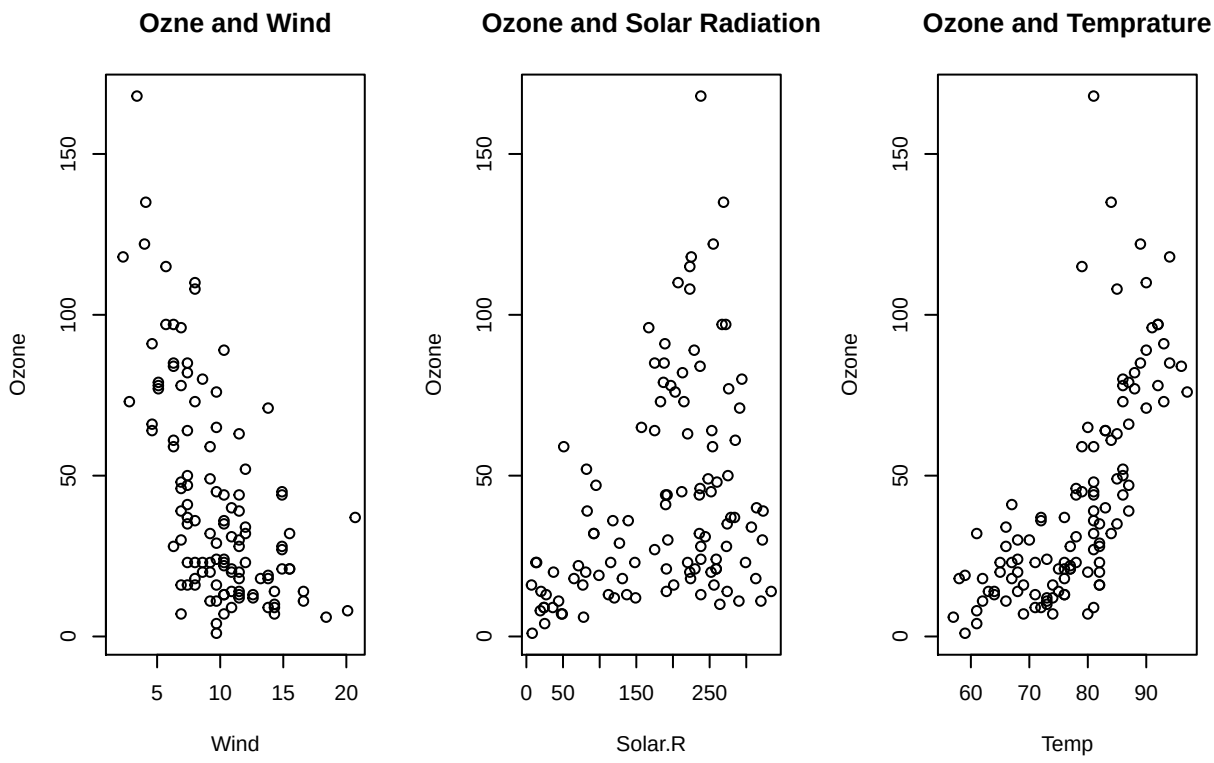
```
with(airquality, plot(Wind, Ozone))
title(main = "Ozone and Wind in NYC")
with(subset(airquality, Month == 5 ), points(Wind, Ozone, col = "blue"))
with(subset(airquality, Month != 5), points(Wind, Ozone, col = "Red"))
legend("topright", pch = 1, col = c("blue", "red"), legend = c("May", "Others"))
```




```
with(airquality, plot(Wind, Ozone, main = "Ozone and Wind in NYC"), pch = 20)
model <- lm(Ozone ~ Wind, airquality)
abline(model, lwd=2)
```




```
par(mfrow = c(1, 3), oma= c(0,0,2,0))
with(airquality, {
  plot(Wind, Ozone, main = "Ozne and Wind")
  plot(Solar.R, Ozone, main = "Ozone and Solar Radiation")
  plot(Temp, Ozone, main = "Ozone and Temprature")
  mtext("Ozone and Weather in NYC", outer = T) # Why doesn't work? Because the default oma is 0.
})
```


Ozone and Weather in NYC
Ozne and Wind
Ozone and Solar Radiation
Ozone and Temprature
Ozone
Wind
Solar.R
Temp
0
50
100
150
5
10
15
20
0
50
150
250
60
70
80
90