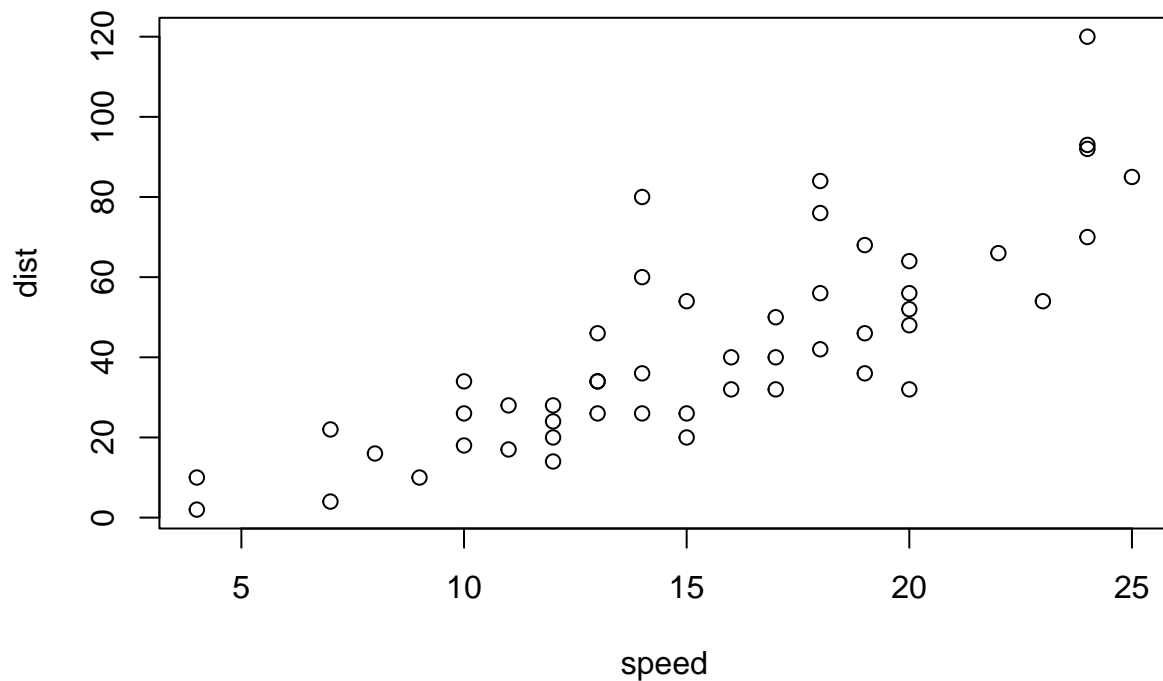# 22238_MDSC_201_Assignment 4

```r
print("Experimenting with the plots in R")
```

```
## [1] "Experimenting with the plots in R"
```

```r
plot(cars)
```
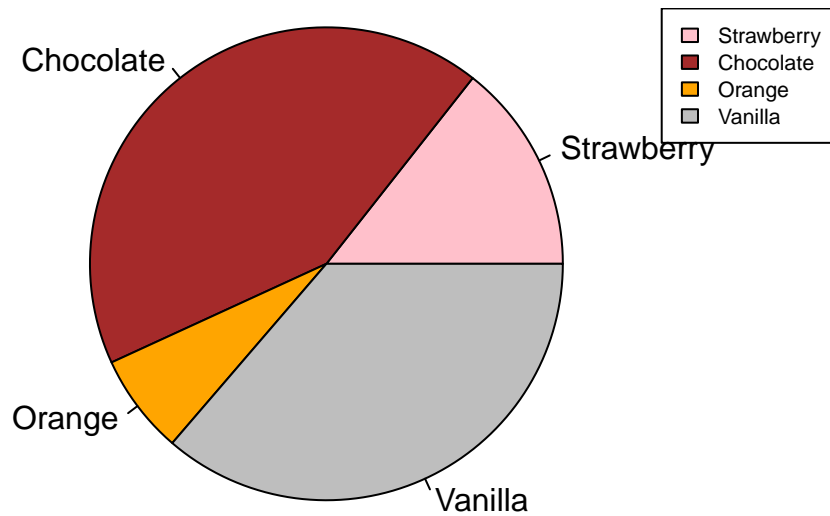


```r
vol <- c(21, 62, 10, 53)

lab <- c("Strawberry", "Chocolate", "Orange", "Vanilla")

colo <- c("pink", "brown", "orange", "grey")

pie(x=vol,labels = lab, radius = 1, col = colo)
legend("topright", c("Strawberry", "Chocolate", "Orange", "Vanilla"), cex = 0.7, fill = colo)
```

```
colors = c("blue", "orange", "brown")
months <- c("Mar", "Apr", "May", "Jun", "Jul")
regions <- c("Region 1", "Region 2", "Region 3")

Values <- matrix(c(2, 9, 3, 11, 9, 4, 8, 7, 3, 12, 5, 2, 8, 10, 11),
                 nrow = 3, ncol = 5, byrow = TRUE)

barplot(Values, main = "Total Revenue", names.arg = months,
                    xlab = "Month", ylab = "Revenue",
                    col = colors, beside = TRUE)

legend("topleft", regions, cex = 0.7, fill = colors)
```

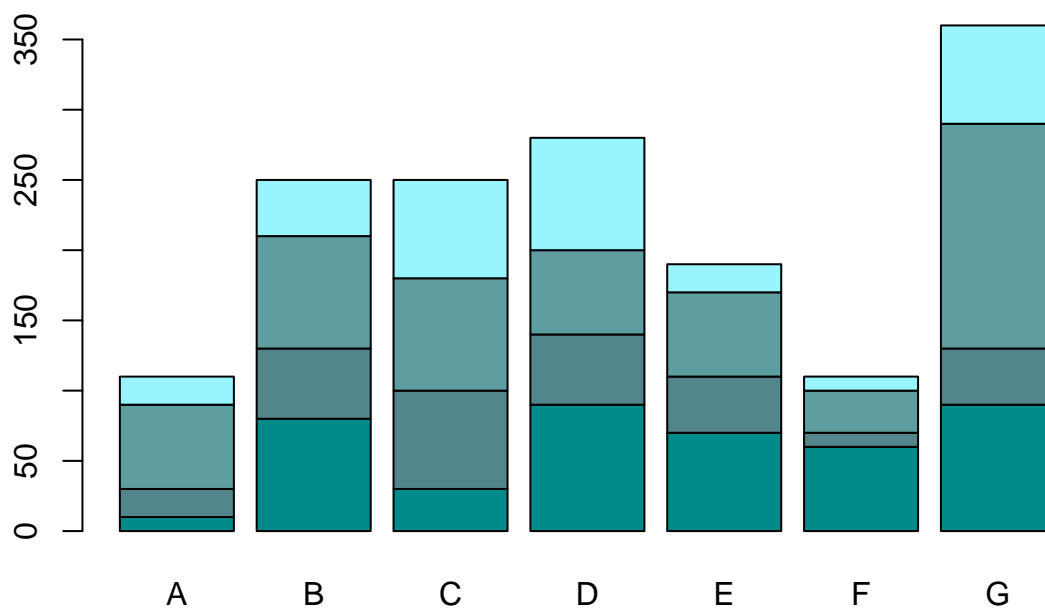# Total Revenue
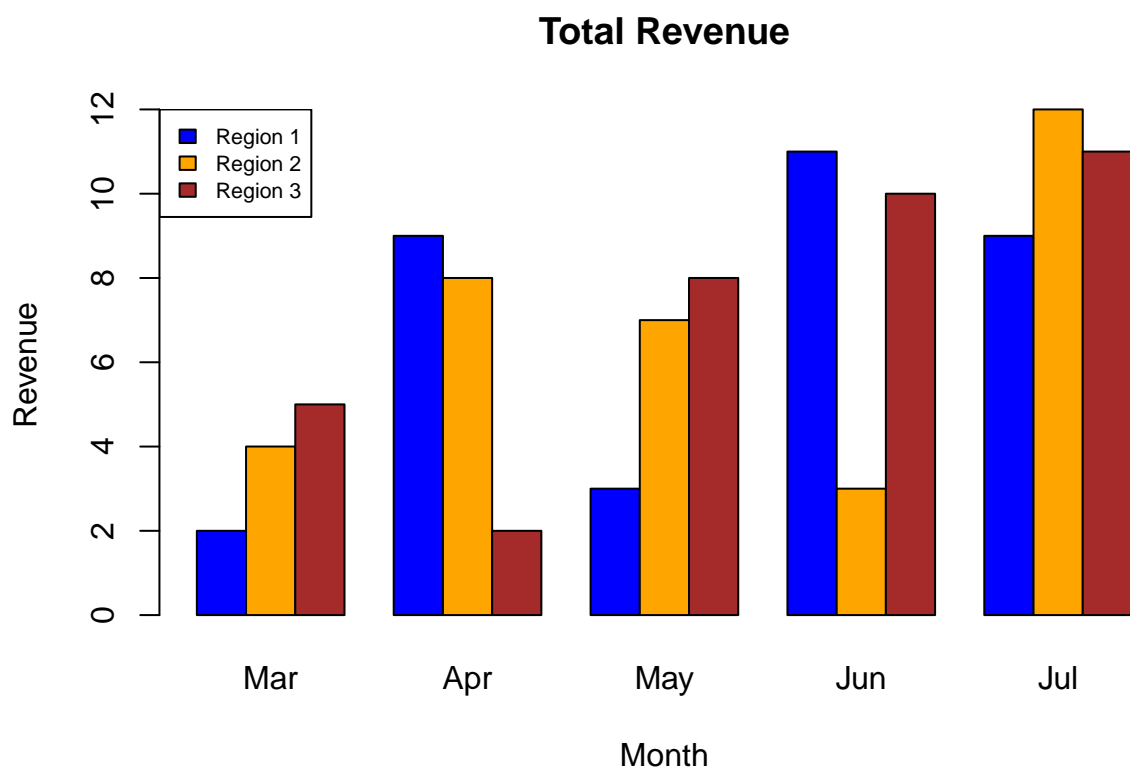

```
dat <- read.table(text = "A    B    C    D    E    F    G
1 10 80 30 90 70 60   90
2 20 50 70 50 40 10   40
3 60 80 80 60  60 30 160
4 20 40 70 80 20 10   70", header = TRUE)

barplot(as.matrix(dat),col = c("darkcyan", "cadetblue4", "cadetblue", "cadetblue1"))
```

```
print(airquality)
```

```
##      Ozone Solar.R Wind Temp Month Day
## 1      41     190  7.4   67     5   1
## 2      36     118  8.0   72     5   2
## 3      12     149 12.6   74     5   3
## 4      18     313 11.5   62     5   4
## 5      NA      NA 14.3   56     5   5
## 6      28      NA 14.9   66     5   6
## 7      23     299  8.6   65     5   7
## 8      19      99 13.8   59     5   8
## 9       8      19 20.1   61     5   9
## 10     NA     194  8.6   69     5  10
## 11      7      NA  6.9   74     5  11
## 12     16     256  9.7   69     5  12
## 13     11     290  9.2   66     5  13
## 14     14     274 10.9   68     5  14
## 15     18      65 13.2   58     5  15
## 16     14     334 11.5   64     5  16
## 17     34     307 12.0   66     5  17
## 18      6      78 18.4   57     5  18
## 19     30     322 11.5   68     5  19
## 20     11      44  9.7   62     5  20
## 21      1       8  9.7   59     5  21
## 22     11     320 16.6   73     5  22
```

```
## 23     4    25  9.7  61  5  23
## 24    32    92 12.0  61  5  24
## 25    NA    66 16.6  57  5  25
## 26    NA   266 14.9  58  5  26
## 27    NA    NA  8.0  57  5  27
## 28    23    13 12.0  67  5  28
## 29    45   252 14.9  81  5  29
## 30   115   223  5.7  79  5  30
## 31    37   279  7.4  76  5  31
## 32    NA   286  8.6  78  6   1
## 33    NA   287  9.7  74  6   2
## 34    NA   242 16.1  67  6   3
## 35    NA   186  9.2  84  6   4
## 36    NA   220  8.6  85  6   5
## 37    NA   264 14.3  79  6   6
## 38    29   127  9.7  82  6   7
## 39    NA   273  6.9  87  6   8
## 40    71   291 13.8  90  6   9
## 41    39   323 11.5  87  6  10
## 42    NA   259 10.9  93  6  11
## 43    NA   250  9.2  92  6  12
## 44    23   148  8.0  82  6  13
## 45    NA   332 13.8  80  6  14
## 46    NA   322 11.5  79  6  15
## 47    21   191 14.9  77  6  16
## 48    37   284 20.7  72  6  17
## 49    20    37  9.2  65  6  18
## 50    12   120 11.5  73  6  19
## 51    13   137 10.3  76  6  20
## 52    NA   150  6.3  77  6  21
## 53    NA    59  1.7  76  6  22
## 54    NA    91  4.6  76  6  23
## 55    NA   250  6.3  76  6  24
## 56    NA   135  8.0  75  6  25
## 57    NA   127  8.0  78  6  26
## 58    NA    47 10.3  73  6  27
## 59    NA    98 11.5  80  6  28
## 60    NA    31 14.9  77  6  29
## 61    NA   138  8.0  83  6  30
## 62   135   269  4.1  84  7   1
## 63    49   248  9.2  85  7   2
## 64    32   236  9.2  81  7   3
## 65    NA   101 10.9  84  7   4
## 66    64   175  4.6  83  7   5
## 67    40   314 10.9  83  7   6
## 68    77   276  5.1  88  7   7
## 69    97   267  6.3  92  7   8
## 70    97   272  5.7  92  7   9
## 71    85   175  7.4  89  7  10
## 72    NA   139  8.6  82  7  11
## 73    10   264 14.3  73  7  12
## 74    27   175 14.9  81  7  13
## 75    NA   291 14.9  91  7  14
## 76     7    48 14.3  80  7  15
```

```
## 77      48     260   6.9    81     7   16
## 78      35     274  10.3    82     7   17
## 79      61     285   6.3    84     7   18
## 80      79     187   5.1    87     7   19
## 81      63     220  11.5    85     7   20
## 82      16       7   6.9    74     7   21
## 83      NA     258   9.7    81     7   22
## 84      NA     295  11.5    82     7   23
## 85      80     294   8.6    86     7   24
## 86     108     223   8.0    85     7   25
## 87      20      81   8.6    82     7   26
## 88      52      82  12.0    86     7   27
## 89      82     213   7.4    88     7   28
## 90      50     275   7.4    86     7   29
## 91      64     253   7.4    83     7   30
## 92      59     254   9.2    81     7   31
## 93      39      83   6.9    81     8    1
## 94       9      24  13.8    81     8    2
## 95      16      77   7.4    82     8    3
## 96      78      NA   6.9    86     8    4
## 97      35      NA   7.4    85     8    5
## 98      66      NA   4.6    87     8    6
## 99     122     255   4.0    89     8    7
## 100     89     229  10.3    90     8    8
## 101    110     207   8.0    90     8    9
## 102     NA     222   8.6    92     8   10
## 103     NA     137  11.5    86     8   11
## 104     44     192  11.5    86     8   12
## 105     28     273  11.5    82     8   13
## 106     65     157   9.7    80     8   14
## 107     NA      64  11.5    79     8   15
## 108     22      71  10.3    77     8   16
## 109     59      51   6.3    79     8   17
## 110     23     115   7.4    76     8   18
## 111     31     244  10.9    78     8   19
## 112     44     190  10.3    78     8   20
## 113     21     259  15.5    77     8   21
## 114      9      36  14.3    72     8   22
## 115     NA     255  12.6    75     8   23
## 116     45     212   9.7    79     8   24
## 117    168     238   3.4    81     8   25
## 118     73     215   8.0    86     8   26
## 119     NA     153   5.7    88     8   27
## 120     76     203   9.7    97     8   28
## 121    118     225   2.3    94     8   29
## 122     84     237   6.3    96     8   30
## 123     85     188   6.3    94     8   31
## 124     96     167   6.9    91     9    1
## 125     78     197   5.1    92     9    2
## 126     73     183   2.8    93     9    3
## 127     91     189   4.6    93     9    4
## 128     47      95   7.4    87     9    5
## 129     32      92  15.5    84     9    6
## 130     20     252  10.9    80     9    7
```

```
## 131     23     220 10.3     78     9    8
## 132     21     230 10.9     75     9    9
## 133     24     259  9.7     73     9   10
## 134     44     236 14.9     81     9   11
## 135     21     259 15.5     76     9   12
## 136     28     238  6.3     77     9   13
## 137      9      24 10.9     71     9   14
## 138     13     112 11.5     71     9   15
## 139     46     237  6.9     78     9   16
## 140     18     224 13.8     67     9   17
## 141     13      27 10.3     76     9   18
## 142     24     238 10.3     68     9   19
## 143     16     201  8.0     82     9   20
## 144     13     238 12.6     64     9   21
## 145     23      14  9.2     71     9   22
## 146     36     139 10.3     81     9   23
## 147      7      49 10.3     69     9   24
## 148     14      20 16.6     63     9   25
## 149     30     193  6.9     70     9   26
## 150     NA     145 13.2     77     9   27
## 151     14     191 14.3     75     9   28
## 152     18     131  8.0     76     9   29
## 153     20     223 11.5     68     9   30
```
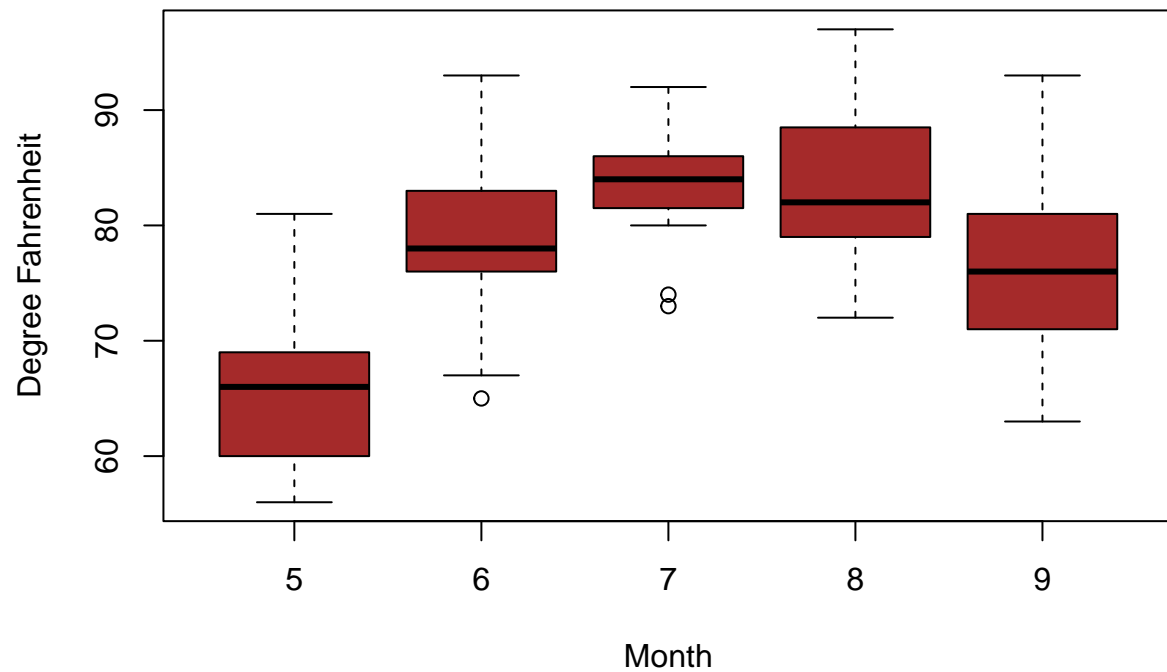
```r
boxplot(Temp~Month,
data=airquality,
main="Box plot depicting temperature of each month",
xlab="Month",
ylab="Degree Fahrenheit",
col="brown",
border="black"
)
```
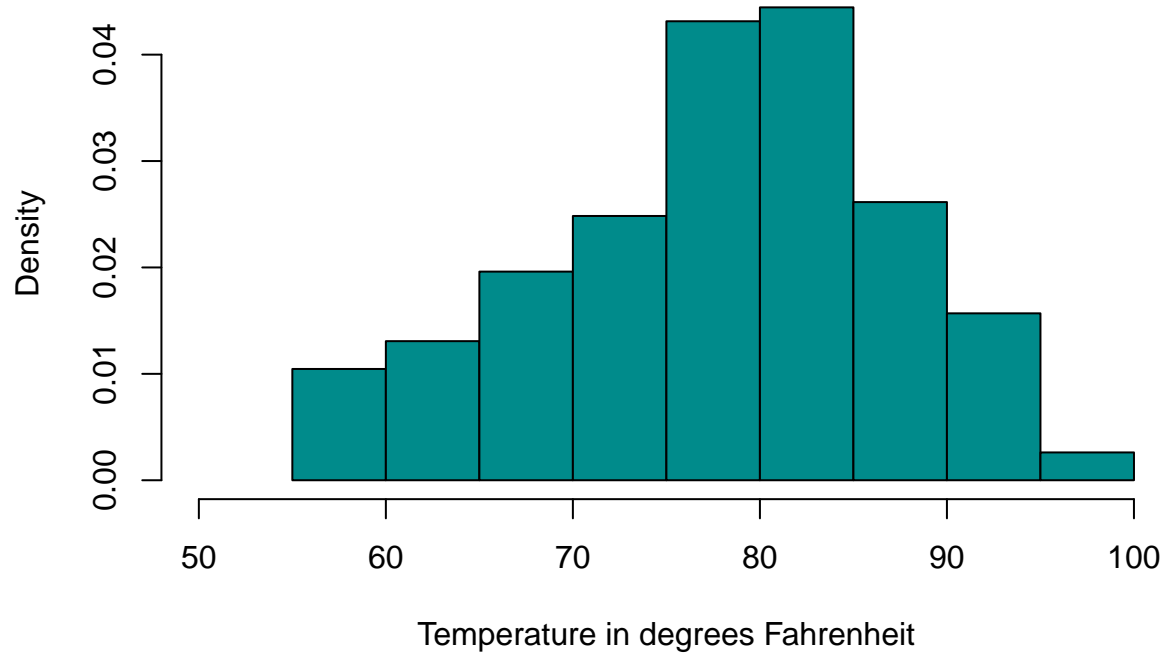
Box plot depicting temperature of each month


```
hist(airquality$Temp,
main="Maximum daily temperature at La Guardia Airport",
xlab="Temperature in degrees Fahrenheit",
xlim=c(50,100),
col="darkcyan",
freq=FALSE
)
```

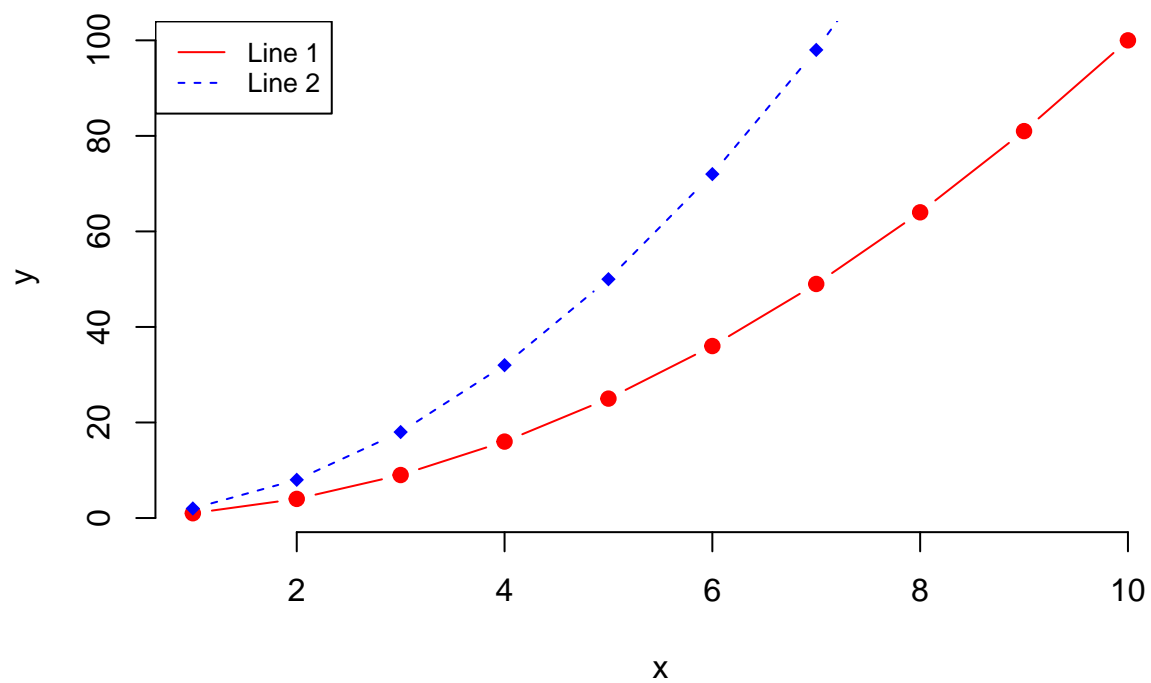# Maximum daily temperature at La Guardia Airport


```
x <- 1:10
y1 <- x*x
y2  <- 2*y1


plot(x, y1,main = "Line plot in R", type = "b", frame = FALSE, pch = 19,
     col = "red", xlab = "x", ylab = "y")

lines(x, y2, pch = 18, col = "blue", type = "b", lty = 2)

legend("topleft", legend=c("Line 1", "Line 2"),
       col=c("red", "blue"), lty = 1:2, cex=0.8)
```
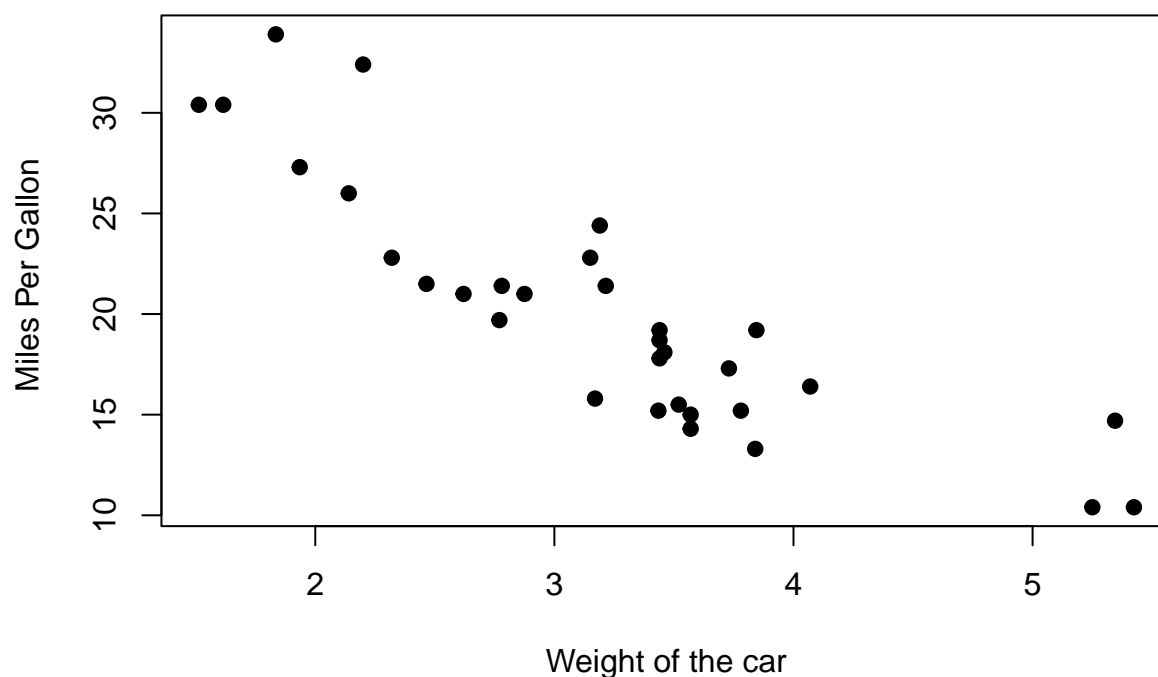
Line plot in R


```
attach(mtcars)
plot(wt, mpg, main="Scatterplot in R",
    xlab="Weight of the car", ylab="Miles Per Gallon ", pch=19)
```

Scatterplot in R

Weight of the car

```
df <- mtcars
print(df)
```

```
##                      mpg cyl  disp  hp drat    wt  qsec vs am gear carb
## Mazda RX4           21.0   6 160.0 110 3.90 2.620 16.46  0  1    4    4
## Mazda RX4 Wag       21.0   6 160.0 110 3.90 2.875 17.02  0  1    4    4
## Datsun 710          22.8   4 108.0  93 3.85 2.320 18.61  1  1    4    1
## Hornet 4 Drive      21.4   6 258.0 110 3.08 3.215 19.44  1  0    3    1
## Hornet Sportabout   18.7   8 360.0 175 3.15 3.440 17.02  0  0    3    2
## Valiant             18.1   6 225.0 105 2.76 3.460 20.22  1  0    3    1
## Duster 360          14.3   8 360.0 245 3.21 3.570 15.84  0  0    3    4
## Merc 240D           24.4   4 146.7  62 3.69 3.190 20.00  1  0    4    2
## Merc 230            22.8   4 140.8  95 3.92 3.150 22.90  1  0    4    2
## Merc 280            19.2   6 167.6 123 3.92 3.440 18.30  1  0    4    4
## Merc 280C           17.8   6 167.6 123 3.92 3.440 18.90  1  0    4    4
## Merc 450SE          16.4   8 275.8 180 3.07 4.070 17.40  0  0    3    3
## Merc 450SL          17.3   8 275.8 180 3.07 3.730 17.60  0  0    3    3
## Merc 450SLC         15.2   8 275.8 180 3.07 3.780 18.00  0  0    3    3
## Cadillac Fleetwood  10.4   8 472.0 205 2.93 5.250 17.98  0  0    3    4
## Lincoln Continental 10.4   8 460.0 215 3.00 5.424 17.82  0  0    3    4
## Chrysler Imperial   14.7   8 440.0 230 3.23 5.345 17.42  0  0    3    4
## Fiat 128            32.4   4  78.7  66 4.08 2.200 19.47  1  1    4    1
## Honda Civic         30.4   4  75.7  52 4.93 1.615 18.52  1  1    4    2
## Toyota Corolla      33.9   4  71.1  65 4.22 1.835 19.90  1  1    4    1
## Toyota Corona       21.5   4 120.1  97 3.70 2.465 20.01  1  0    3    1
## Dodge Challenger    15.5   8 318.0 150 2.76 3.520 16.87  0  0    3    2
```

```
## AMC Javelin        15.2  8 304.0 150 3.15 3.435 17.30  0  0    3    2
## Camaro Z28         13.3  8 350.0 245 3.73 3.840 15.41  0  0    3    4
## Pontiac Firebird   19.2  8 400.0 175 3.08 3.845 17.05  0  0    3    2
## Fiat X1-9          27.3  4  79.0  66 4.08 1.935 18.90  1  1    4    1
## Porsche 914-2      26.0  4 120.3  91 4.43 2.140 16.70  0  1    5    2
## Lotus Europa       30.4  4  95.1 113 3.77 1.513 16.90  1  1    5    2
## Ford Pantera L     15.8  8 351.0 264 4.22 3.170 14.50  0  1    5    4
## Ferrari Dino       19.7  6 145.0 175 3.62 2.770 15.50  0  1    5    6
## Maserati Bora      15.0  8 301.0 335 3.54 3.570 14.60  0  1    5    8
## Volvo 142E         21.4  4 121.0 109 4.11 2.780 18.60  1  1    4    2
```

```r
cat("Means of the miles per gallon : ", mean(df$mpg))
```

```
## Means of the miles per gallon :  20.09062
```

```r
cat("\n\n")
```

```r
cat("Median of weight of the car dataset : ", median(df$wt))
```

```
## Median of weight of the car dataset :  3.325
```

```r
cat("\n\n")
```

```r
cat("Mode of the weight from the car dataset : ", names(sort(-table(df$wt)))[1])
```

```
## Mode of the weight from the car dataset :  3.44
```

```r
cat("\n\n")
```

```r
cat("Quantiles of the weight: ",quantile(df$wt))
```

```
## Quantiles of the weight:  1.513 2.58125 3.325 3.61 5.424
```