# Assignment1-FML

## R Markdown

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## Descriptive statistics

```
##   Manufacturer          Model               Type              Min.Price
##   Length:93           Length:93           Length:93         Min.   : 6.70
##   Class :character    Class :character    Class :character  1st Qu.:10.80
##   Mode  :character    Mode  :character    Mode  :character  Median :14.70
##                                                             Mean   :17.13
##                                                             3rd Qu.:20.30
##                                                             Max.   :45.40
##
##       Price          Max.Price        MPG.city       MPG.highway
##   Min.   : 7.40    Min.   : 7.9    Min.   :15.00    Min.   :20.00
##   1st Qu.:12.20    1st Qu.:14.7    1st Qu.:18.00    1st Qu.:26.00
##   Median :17.70    Median :19.6    Median :21.00    Median :28.00
##   Mean   :19.51    Mean   :21.9    Mean   :22.37    Mean   :29.09
##   3rd Qu.:23.30    3rd Qu.:25.3    3rd Qu.:25.00    3rd Qu.:31.00
##   Max.   :61.90    Max.   :80.0    Max.   :46.00    Max.   :50.00
##
##     AirBags             DriveTrain          Cylinders           EngineSize
##   Length:93           Length:93           Length:93         Min.   :1.000
##   Class :character    Class :character    Class :character  1st Qu.:1.800
##   Mode  :character    Mode  :character    Mode  :character  Median :2.400
##                                                             Mean   :2.668
##                                                             3rd Qu.:3.300
##                                                             Max.   :5.700
##
##     Horsepower          RPM            Rev.per.mile  Man.trans.avail
##   Min.   : 55.0    Min.   :3800    Min.   :1320    Length:93
##   1st Qu.:103.0    1st Qu.:4800    1st Qu.:1985    Class :character
##   Median :140.0    Median :5200    Median :2340    Mode  :character
##   Mean   :143.8    Mean   :5281    Mean   :2332
##   3rd Qu.:170.0    3rd Qu.:5750    3rd Qu.:2565
##   Max.   :300.0    Max.   :6500    Max.   :3755
##
##  Fuel.tank.capacity  Passengers          Length          Wheelbase
##   Min.   : 9.20      Min.   :2.000    Min.   :141.0    Min.   : 90.0
##   1st Qu.:14.50      1st Qu.:4.000    1st Qu.:174.0    1st Qu.: 98.0
##   Median :16.40      Median :5.000    Median :183.0    Median :103.0
```

```
##   Mean   :16.66      Mean   :5.086   Mean   :183.2   Mean   :103.9
##   3rd Qu.:18.80      3rd Qu.:6.000   3rd Qu.:192.0   3rd Qu.:110.0
##   Max.   :27.00      Max.   :8.000   Max.   :219.0   Max.   :119.0
##
##       Width         Turn.circle    Rear.seat.room    Luggage.room       Weight
##   Min.   :60.00   Min.   :32.00   Min.   :19.00   Min.   : 6.00   Min.   :1695
##   1st Qu.:67.00   1st Qu.:37.00   1st Qu.:26.00   1st Qu.:12.00   1st Qu.:2620
##   Median :69.00   Median :39.00   Median :27.50   Median :14.00   Median :3040
##   Mean   :69.38   Mean   :38.96   Mean   :27.83   Mean   :13.89   Mean   :3073
##   3rd Qu.:72.00   3rd Qu.:41.00   3rd Qu.:30.00   3rd Qu.:15.00   3rd Qu.:3525
##   Max.   :78.00   Max.   :45.00   Max.   :36.00   Max.   :22.00   Max.   :4105
##                                   NA's   :2       NA's   :11
##      Origin             Make
##   Length:93        Length:93
##   Class :character  Class :character
##   Mode  :character  Mode  :character
##
##
##
##
```

## Showing Cars with Horsepower > 150 only

```
##     Manufacturer         Model      Type Min.Price Price Max.Price MPG.city
## 2         Acura         Legend   Midsize      29.2  33.9      38.7       18
## 3          Audi             90   Compact      25.9  29.1      32.3       20
## 4          Audi            100   Midsize      30.8  37.7      44.6       19
## 5           BMW           535i   Midsize      23.7  30.0      36.2       22
## 7         Buick        LeSabre     Large      19.9  20.8      21.7       19
## 8         Buick      Roadmaster     Large      22.6  23.7      24.9       16
## 9         Buick        Riviera   Midsize      26.3  26.3      26.3       19
## 10     Cadillac        DeVille     Large      33.0  34.7      36.3       16
## 11     Cadillac        Seville   Midsize      37.5  40.1      42.7       16
## 14    Chevrolet         Camaro    Sporty      13.4  15.1      16.8       19
## 16    Chevrolet     Lumina_APV       Van      14.7  16.3      18.0       18
## 17    Chevrolet          Astro       Van      14.7  16.6      18.6       15
## 18    Chevrolet        Caprice     Large      18.0  18.8      19.6       17
## 19    Chevrolet       Corvette    Sporty      34.6  38.0      41.5       17
## 20      Chrylser       Concorde     Large      18.4  18.4      18.4       20
## 28        Dodge        Stealth    Sporty      18.5  25.8      33.1       18
## 30        Eagle         Vision     Large      17.5  19.3      21.2       20
## 38         Ford  Crown_Victoria     Large      20.1  20.9      21.7       18
## 41        Honda        Prelude    Sporty      17.0  19.8      22.7       24
## 48      Infiniti            Q45   Midsize      45.4  47.9      50.4       17
## 49        Lexus          ES300   Midsize      27.5  28.0      28.4       18
## 50        Lexus          SC300   Midsize      34.7  35.2      35.6       18
## 51      Lincoln    Continental   Midsize      33.3  34.3      35.3       17
## 52      Lincoln       Town_Car     Large      34.4  36.1      37.8       18
## 55        Mazda            626   Compact      14.3  16.5      18.7       26
## 56        Mazda            MPV       Van      16.6  19.1      21.7       18
## 57        Mazda           RX-7    Sporty      32.5  32.5      32.5       17
## 59 Mercedes-Benz          300E   Midsize      43.8  61.9      80.0       19
## 63    Mitsubishi      Diamante   Midsize      22.4  26.1      29.9       18
## 65        Nissan         Altima   Compact      13.0  15.7      18.3       24
```

```
## 66       Nissan        Quest      Van    16.7 19.1     21.5       17
## 67       Nissan       Maxima  Midsize    21.0 21.5     22.0       21
## 68    Oldsmobile      Achieva  Compact    13.0 13.5     14.0       24
## 70    Oldsmobile    Silhouette     Van    19.5 19.5     19.5       18
## 71    Oldsmobile   Eighty-Eight   Large   19.5 20.7     21.9       19
## 75       Pontiac      Firebird   Sporty   14.0 17.7     21.4       19
## 76       Pontiac   Grand_Prix  Midsize    15.4 18.5     21.6       19
## 77       Pontiac    Bonneville   Large    19.4 24.4     29.4       19
## 91   Volkswagen       Corrado   Sporty    22.9 23.3     23.7       18
## 93        Volvo           850  Midsize    24.8 26.7     28.5       20
##     MPG.highway            AirBags DriveTrain Cylinders EngineSize Horsepower
## 2            25 Driver & Passenger      Front         6        3.2        200
## 3            26        Driver only      Front         6        2.8        172
## 4            26 Driver & Passenger      Front         6        2.8        172
## 5            30        Driver only       Rear         4        3.5        208
## 7            28        Driver only      Front         6        3.8        170
## 8            25        Driver only       Rear         6        5.7        180
## 9            27        Driver only      Front         6        3.8        170
## 10           25        Driver only      Front         8        4.9        200
## 11           25 Driver & Passenger      Front         8        4.6        295
## 14           28 Driver & Passenger       Rear         6        3.4        160
## 16           23               None      Front         6        3.8        170
## 17           20               None        4WD         6        4.3        165
## 18           26        Driver only       Rear         8        5.0        170
## 19           25        Driver only       Rear         8        5.7        300
## 20           28 Driver & Passenger      Front         6        3.3        153
## 28           24        Driver only        4WD         6        3.0        300
## 30           28 Driver & Passenger      Front         6        3.5        214
## 38           26        Driver only       Rear         8        4.6        190
## 41           31 Driver & Passenger      Front         4        2.3        160
## 48           22        Driver only       Rear         8        4.5        278
## 49           24        Driver only      Front         6        3.0        185
## 50           23 Driver & Passenger       Rear         6        3.0        225
## 51           26 Driver & Passenger      Front         6        3.8        160
## 52           26 Driver & Passenger       Rear         8        4.6        210
## 55           34        Driver only      Front         4        2.5        164
## 56           24               None        4WD         6        3.0        155
## 57           25        Driver only       Rear    rotary        1.3        255
## 59           25 Driver & Passenger       Rear         6        3.2        217
## 63           24        Driver only      Front         6        3.0        202
## 65           30        Driver only      Front         4        2.4        150
## 66           23               None      Front         6        3.0        151
## 67           26        Driver only      Front         6        3.0        160
## 68           31               None      Front         4        2.3        155
## 70           23               None      Front         6        3.8        170
## 71           28        Driver only      Front         6        3.8        170
## 75           28 Driver & Passenger       Rear         6        3.4        160
## 76           27               None      Front         6        3.4        200
## 77           28 Driver & Passenger      Front         6        3.8        170
## 91           25               None      Front         6        2.8        178
## 93           28 Driver & Passenger      Front         5        2.4        168
##     RPM Rev.per.mile Man.trans.avail Fuel.tank.capacity Passengers Length
## 2  5500         2335             Yes               18.0          5    195
## 3  5500         2280             Yes               16.9          5    180
```

```
## 4   5500         2535             Yes             21.1          6     193
## 5   5700         2545             Yes             21.1          4     186
## 7   4800         1570              No             18.0          6     200
## 8   4000         1320              No             23.0          6     216
## 9   4800         1690              No             18.8          5     198
## 10  4100         1510              No             18.0          6     206
## 11  6000         1985              No             20.0          5     204
## 14  4600         1805             Yes             15.5          4     193
## 16  4800         1690              No             20.0          7     178
## 17  4000         1790              No             27.0          8     194
## 18  4200         1350              No             23.0          6     214
## 19  5000         1450             Yes             20.0          2     179
## 20  5300         1990              No             18.0          6     203
## 28  6000         2120             Yes             19.8          4     180
## 30  5800         1980              No             18.0          6     202
## 38  4200         1415              No             20.0          6     212
## 41  5800         2855             Yes             15.9          4     175
## 48  6000         1955              No             22.5          5     200
## 49  5200         2325             Yes             18.5          5     188
## 50  6000         2510             Yes             20.6          4     191
## 51  4400         1835              No             18.4          6     205
## 52  4600         1840              No             20.0          6     219
## 55  5600         2505             Yes             15.5          5     184
## 56  5000         2240              No             19.6          7     190
## 57  6500         2325             Yes             20.0          2     169
## 59  5500         2220              No             18.5          5     187
## 63  6000         2210              No             19.0          5     190
## 65  5600         2130             Yes             15.9          5     181
## 66  4800         2065              No             20.0          7     190
## 67  5200         2045              No             18.5          5     188
## 68  6000         2380              No             15.2          5     188
## 70  4800         1690              No             20.0          7     194
## 71  4800         1570              No             18.0          6     201
## 75  4600         1805             Yes             15.5          4     196
## 76  5000         1890             Yes             16.5          5     195
## 77  4800         1565              No             18.0          6     177
## 91  5800         2385             Yes             18.5          4     159
## 93  6200         2310             Yes             19.3          5     184
##     Wheelbase Width Turn.circle Rear.seat.room Luggage.room Weight  Origin
## 2         115    71          38           30.0           15   3560 non-USA
## 3         102    67          37           28.0           14   3375 non-USA
## 4         106    70          37           31.0           17   3405 non-USA
## 5         109    69          39           27.0           13   3640 non-USA
## 7         111    74          42           30.5           17   3470     USA
## 8         116    78          45           30.5           21   4105     USA
## 9         108    73          41           26.5           14   3495     USA
## 10        114    73          43           35.0           18   3620     USA
## 11        111    74          44           31.0           14   3935     USA
## 14        101    74          43           25.0           13   3240     USA
## 16        110    74          44           30.5           NA   3715     USA
## 17        111    78          42           33.5           NA   4025     USA
## 18        116    77          42           29.5           20   3910     USA
## 19         96    74          43             NA           NA   3380     USA
## 20        113    74          40           31.0           15   3515     USA
```

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```
## 28          97    72         40          20.0        11   3805    USA
## 30         113    74         40          30.0        15   3490    USA
## 38         114    78         43          30.0        21   3950    USA
## 41         100    70         39          23.5         8   2865 non-USA
## 48         113    72         42          29.0        15   4000 non-USA
## 49         103    70         40          27.5        14   3510 non-USA
## 50         106    71         39          25.0         9   3515 non-USA
## 51         109    73         42          30.0        19   3695    USA
## 52         117    77         45          31.5        22   4055    USA
## 55         103    69         40          29.5        14   2970 non-USA
## 56         110    72         39          27.5        NA   3735 non-USA
## 57          96    69         37            NA        NA   2895 non-USA
## 59         110    69         37          27.0        15   3525 non-USA
## 63         107    70         43          27.5        14   3730 non-USA
## 65         103    67         40          28.5        14   3050 non-USA
## 66         112    74         41          27.0        NA   4100 non-USA
## 67         104    69         41          28.5        14   3200 non-USA
## 68         103    67         39          28.0        14   2910    USA
## 70         110    74         44          30.5        NA   3715    USA
## 71         111    74         42          31.5        17   3470    USA
## 75         101    75         43          25.0        13   3240    USA
## 76         108    72         41          28.5        16   3450    USA
## 77         111    74         43          30.5        18   3495    USA
## 91          97    66         36          26.0        15   2810 non-USA
## 93         105    69         38          30.0        15   3245 non-USA
##                           Make
## 2               Acura Legend
## 3                   Audi 90
## 4                   Audi 100
## 5                   BMW 535i
## 7               Buick LeSabre
## 8           Buick Roadmaster
## 9               Buick Riviera
## 10          Cadillac DeVille
## 11          Cadillac Seville
## 14          Chevrolet Camaro
## 16      Chevrolet Lumina_APV
## 17           Chevrolet Astro
## 18         Chevrolet Caprice
## 19        Chevrolet Corvette
## 20         Chrylser Concorde
## 28             Dodge Stealth
## 30               Eagle Vision
## 38       Ford Crown_Victoria
## 41             Honda Prelude
## 48               Infiniti Q45
## 49                Lexus ES300
## 50                Lexus SC300
## 51       Lincoln Continental
## 52           Lincoln Town_Car
## 55                 Mazda 626
## 56                 Mazda MPV
## 57                 Mazda RX-7
## 59         Mercedes-Benz 300E
```
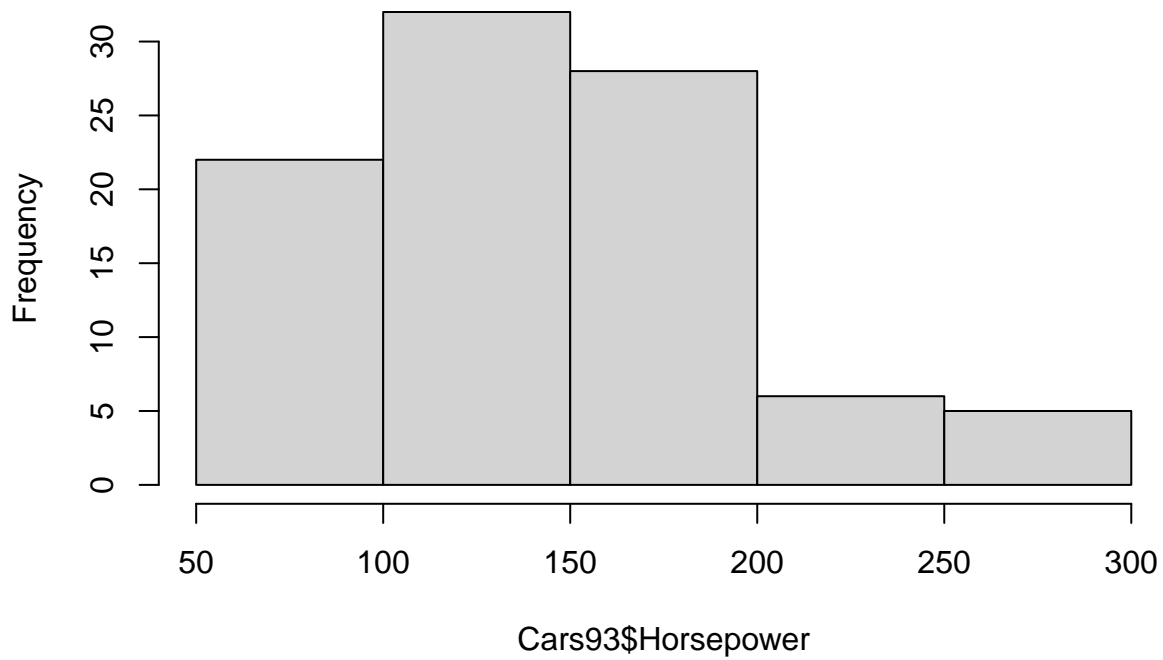
```
## 63        Mitsubishi Diamante
## 65           Nissan Altima
## 66            Nissan Quest
## 67           Nissan Maxima
## 68        Oldsmobile Achieva
## 70      Oldsmobile Silhouette
## 71 Oldsmobile Eighty-Eight
## 75          Pontiac Firebird
## 76        Pontiac Grand_Prix
## 77        Pontiac Bonneville
## 91       Volkswagen Corrado
## 93              Volvo 850
```

Histogram of the Horsepower

**Horsepower of Cars histogram**

# Horsepower and Price scatterplot