

Homework - 1

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Sample of the MtCars dataset

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21.0	6	160	110	3.90	2.620	16.46	0	1	4	4
Mazda RX4 Wag	21.0	6	160	110	3.90	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108	93	3.85	2.320	18.61	1	1	4	1
Hornet 4 Drive	21.4	6	258	110	3.08	3.215	19.44	1	0	3	1
Hornet Sportabout	18.7	8	360	175	3.15	3.440	17.02	0	0	3	2
Valiant	18.1	6	225	105	2.76	3.460	20.22	1	0	3	1

Description:

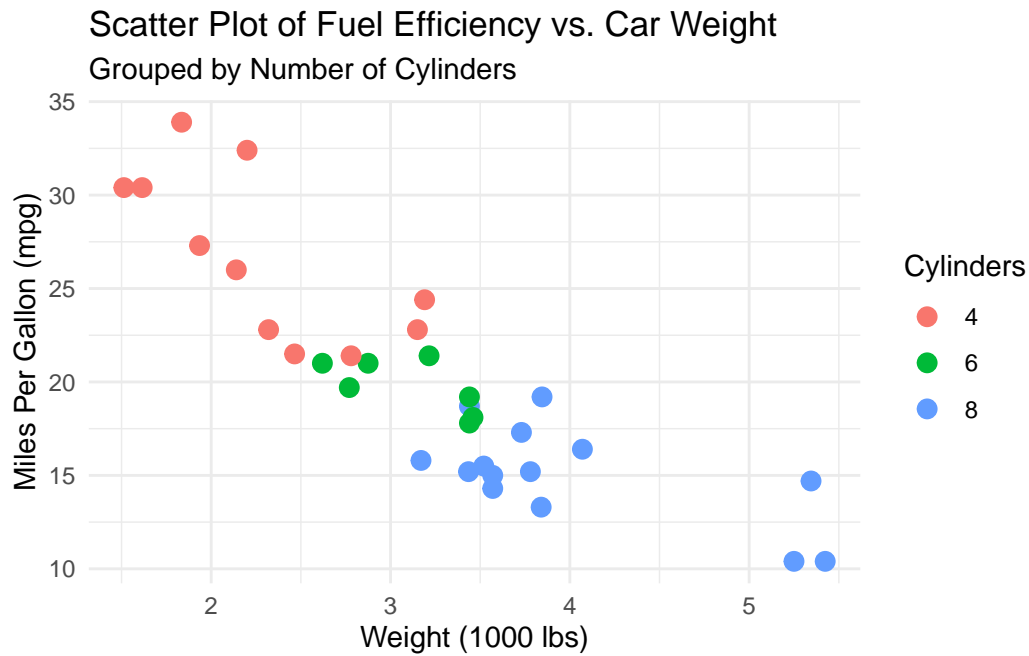
The mtcars dataset comprises fuel consumption and 10 aspects of automobile design and performance for 32 car models from the 1973–74 Motor Trend magazine.

Each row corresponds to a different car model, and each column is a numeric attribute related to that car.

Summary

mpg	wt	cyl
Min. :10.40	Min. :1.513	Min. :4.000
1st Qu.:15.43	1st Qu.:2.581	1st Qu.:4.000
Median :19.20	Median :3.325	Median :6.000
Mean :20.09	Mean :3.217	Mean :6.188
3rd Qu.:22.80	3rd Qu.:3.610	3rd Qu.:8.000
Max. :33.90	Max. :5.424	Max. :8.000

Scatter Plot



- **Negative correlation:**

There is a **clear downward trend**, showing that **as weight increases, fuel efficiency decreases**. Heavier cars tend to consume more fuel.

- **Cylinders as a differentiator:**

- 4-cylinder cars (red) are generally lighter and more fuel-efficient.
- 6-cylinder cars (green) are in the middle range for both weight and mpg.
- 8-cylinder cars (blue) are heavier and less fuel-efficient.