



# Cars price dataset

Exploratory data analysis

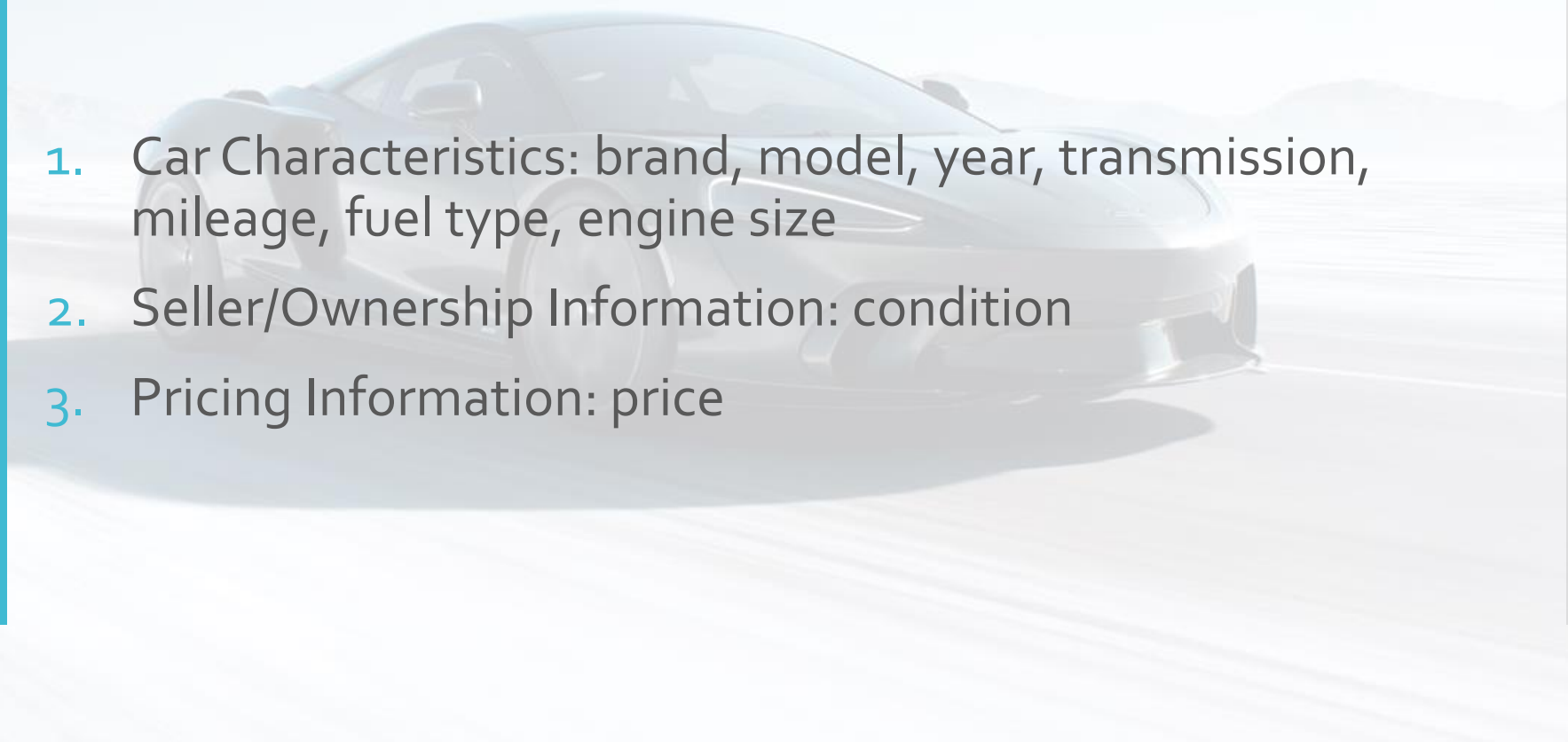
Kholoud othman

# Cars price dataset

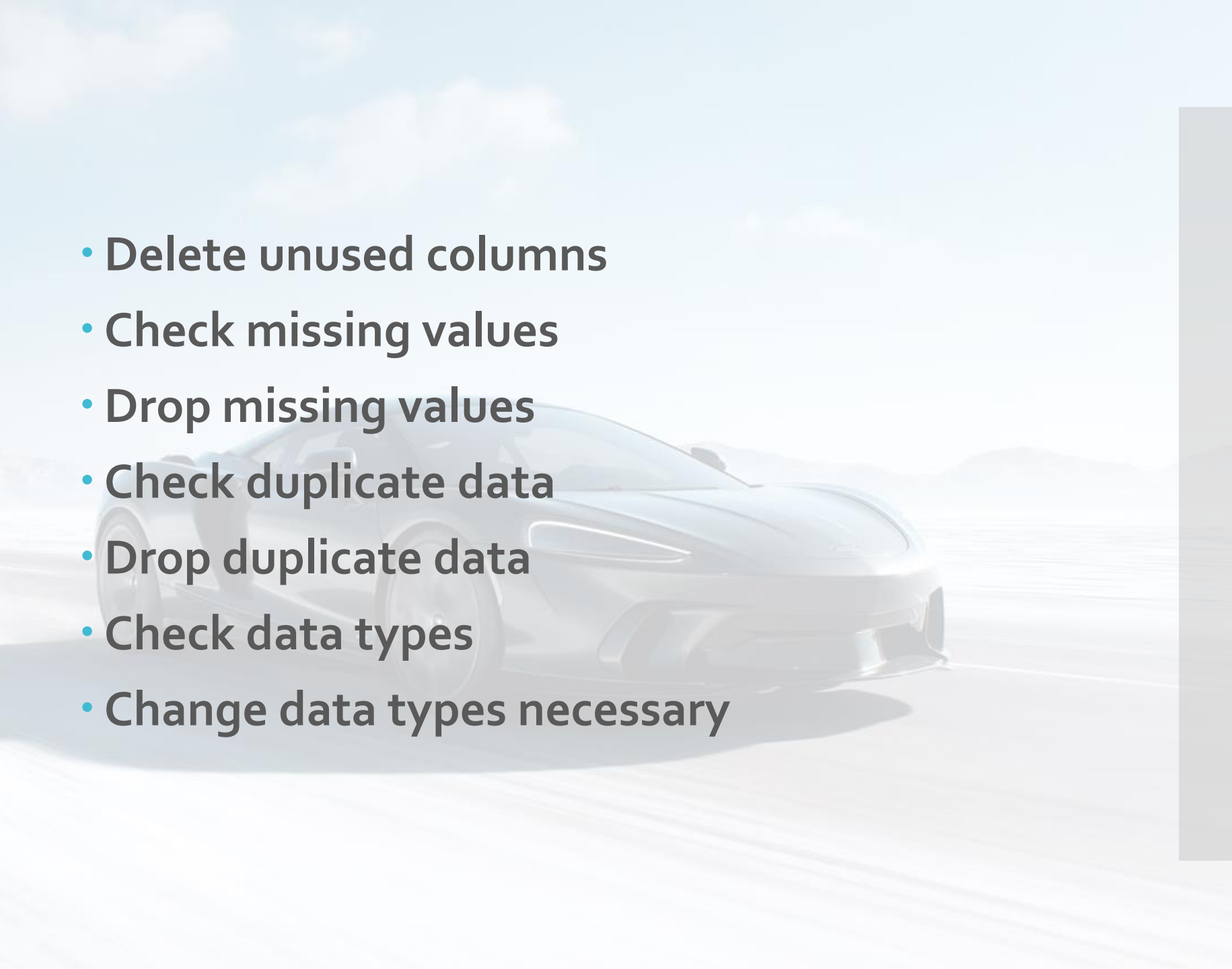
The **car price** dataset contains information about cars, their features, and their prices, for the purpose of building a car price prediction model.

It includes details such as:

1. Car Characteristics: brand, model, year, transmission, mileage, fuel type, engine size
2. Seller/Ownership Information: condition
3. Pricing Information: price



# Data cleaning

- Delete unused columns
  - Check missing values
  - Drop missing values
  - Check duplicate data
  - Drop duplicate data
  - Check data types
  - Change data types necessary
- 

# Descriptive analysis

	car id	year	engine size	mileage	price
count	2500.00000	2500.0000	2500.000000	2500.000000	2500.000000
mean	1250.50000	2011.6268	3.465240	149749.844800	52638.022532
std	721.83216	6.9917	1.432053	87919.952034	27295.833455
min	1.00000	2000.0000	1.000000	15.000000	5011.270000
25%	625.75000	2005.0000	2.200000	71831.500000	28908.485000
50%	1250.50000	2012.0000	3.400000	149085.000000	53485.240000
75%	1875.25000	2018.0000	4.700000	225990.500000	75838.532500
max	2500.00000	2023.0000	6.000000	299967.000000	99982.590000

	brand	fuel type	transmission	condition	model
count	2500	2500	2500	2500	2500
unique	7	4	2	3	28
top	Toyota	Diesel	Manual	Used	Fiesta
freq	374	655	1308	855	103

Q1 .

How many cars  
are there for each  
brand?

brand	Num of cars
Toyota	374
Audi	368
BMW	358
Mercedes	353
Honda	352
Tesla	348
Ford	347
total	2500

The brand that have the  
biggest number of cars is :  
**Toyota**

The brand that have the  
smallest number of cars is :  
**Ford**

Q2.

How many cars  
have a Automatic  
transmission for  
each brand?

brand	Num of cars
Toyota	187
BMW	177
Mercedes	176
Audi	170
Honda	162
Tesla	161
Ford	159

The brand that have the  
biggest Num of cars with  
Automatic transmission is :  
**Toyota**

The fuel type that have the  
smallest Num of cars with  
Automatic transmission is :  
**Ford**

Q3 .

How many cars  
have a manual  
transmission for  
each brand?

brand	Num of cars
Audi	198
Honda	190
Ford	188
Tesla	187
Toyota	187
BMW	181
Mercedes	177

The brand that have the  
biggest Num of cars with  
manual transmission is :  
**Audi**

The fuel type that have the  
smallest Num of cars with  
manual transmission is :  
**Mercedes**

Q4 .

What is the average price of cars for each brand?

brand	average price
BMW	54157.114385
Tesla	53475.547471
Mercedes	53191.090085
Toyota	52078.728235
Honda	52050.283949
Audi	51953.424810
Ford	51593.254813

The brand that have the biggest average price is :  
**BMW**

The brand that have the smallest average price is :  
**Ford**



Q5 .

What is the total mileage of cars for each brand?

brand	mileage
Toyota	55325030
Audi	55193141
BMW	54046231
Ford	53467040
Honda	52968531
Tesla	52529205
Mercedes	50845434

The brand that have the biggest total mileage is :  
**Toyota**

The brand that have the smallest total mileage is :  
**Mercedes**

Q6 .

How many cars  
are there in each  
fuel type?

fuel type	Num of cars
Diesel	655
Electric	614
Hybrid	601
Petrol	630
total	2500

The fuel type that have the  
biggest number of cars is :  
**Diesel**

The fuel type that have the  
smallest number of cars is :  
**Petrol**

Q7 .

What is the total price of all cars for each fuel type?

fuel type	total price
Diesel	36023033.42
Petrol	32613788.35
Hybrid	31580984.25
Electric	31377250.31

The fuel type that have the biggest total price is :

**Diesel**

The fuel type that have the smallest total price is :

**Electric**

Q8 .

**What is the total number of cars with an automatic transmission for each fuel type?**

<b>fuel type</b>	<b>Num of cars</b>
<b>Petrol</b>	316
<b>Diesel</b>	309
<b>Electric</b>	291
<b>Hybrid</b>	276

The fuel type that have the biggest Num of cars with automatic transmission is :  
**Petrol**

The fuel type that have the smallest Num of cars with automatic transmission is :  
**Hybrid**

Q9.

What is the average mileage of cars for each fuel type?

fuel type	average mileage
Diesel	150379.16
Electric	143897.39
Hybrid	153476.47
Petrol	151244.29

The fuel type that have the biggest average mileage is :  
**Diesel**

The fuel type that have the smallest average mileage is :  
**Petrol**

Q10 .

What is the minimum mileage of cars for each fuel type?

fuel type	mileage
Electric	15
Diesel	36
Petrol	56
Hybrid	1379

The fuel type that have the minimum mileage is :

**Electric**

The fuel type that have the biggest minimum mileage is :

**Hybrid**

Q11 .

How many cars are there for each year of registration?

year	Num of cars
2020	122
2003	118
2016	118
2022	112
2021	112

The top 5 year that have the biggest Num of cars

The year that have the biggest Num of cars is :  
**2020**

Q12 .

What is the maximum price of cars for each registration year?

year	maximum price
2022	99982.59
2010	99968.62
2015	99905.90
2009	99794.46
2016	99754.42

The top 5 year that have the maximum price of cars

The registration year that have the biggest maximum price is :

**2022**



Q13 .

What is the minimum price of cars for each registration year?

year	minimum price
2012	7563.58
2021	6846.34
2018	6728.96
2010	6690.81
2014	6645.97

The top 5 year that have the minimum price of cars

The year that have the minimum price is :

**2012**

Q14 .

What is the  
Number of cars  
for each condition  
type?

condition	Num of cars
Used	855
Like New	836
New	809

The condition that have the  
biggest Num of cars is :  
**Used**

The condition that have the  
smallest Num of cars is :  
**New**

Q15.

What is the average mileage of cars for each condition?

condition	average mileage
Like New	151986.43
New	148667.97
Used	148586.63

The condition that have the biggest average mileage is :  
**Like New**

The condition that have the smallest average mileage is :  
**Used**

Q16.

What is the total number of cars are there for each transmission type and condition?

transmission	condition	Num of cars
Manual	Like New	442
	New	423
	Used	443
Automatic	Like New	394
	New	386
	Used	421

The condition in manual transmission that have the biggest Num of cars is :  
**Used**

The condition in automatic transmission that have the smallest Num of cars is :  
**Used**

Q17.

What is the average price of cars for each transmission type?

transmission	average price
Automatic	52691.68
Manual	52589.12

The transmission that have the biggest average price is :  
**Automatic**