```python
import pandas as pd
car = pd.read_csv('Car dataset.csv')
```

```python
car.head(2)
```

	Make	Model	Type	Origin	DriveTrain	MSRP	Invoice	EngineSize	Cylinders	Horsepower	MPG_City	MPG_Highway	Weight	Wheelbase	Length
0	Acura	MDX	SUV	Asia	All	$36,945	$33,337	3.5	6.0	265.0	17.0	23.0	4451.0	106.0	189.0
1	Acura	RSX Type S 2dr	Sedan	Asia	Front	$23,820	$21,761	2.0	4.0	200.0	24.0	31.0	2778.0	101.0	172.0

SHAPE

```python
car.shape
```

```
(432, 15)
```

INFO

```python
car.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 432 entries, 0 to 431
Data columns (total 15 columns):
 #   Column       Non-Null Count  Dtype
---  ------       --------------  -----
 0   Make         428 non-null    object
 1   Model        428 non-null    object
 2   Type         428 non-null    object
 3   Origin       428 non-null    object
 4   DriveTrain   428 non-null    object
 5   MSRP         428 non-null    object
 6   Invoice      428 non-null    object
 7   EngineSize   428 non-null    float64
 8   Cylinders    426 non-null    float64
 9   Horsepower   428 non-null    float64
 10  MPG_City     428 non-null    float64
 11  MPG_Highway  428 non-null    float64
 12  Weight       428 non-null    float64
 13  Wheelbase    428 non-null    float64
 14  Length       428 non-null    float64
dtypes: float64(8), object(7)
memory usage: 50.8+ KB
```

DESCRIBE

```python
car.describe()
```

	EngineSize	Cylinders	Horsepower	MPG_City	MPG_Highway	Weight	Wheelbase	Length
count	428.000000	426.000000	428.000000	428.000000	428.000000	428.000000	428.000000	428.000000
mean	3.196729	5.807512	215.885514	20.060748	26.843458	3577.953271	108.154206	186.362150
std	1.108595	1.558443	71.836032	5.238218	5.741201	758.983215	8.311813	14.357991
min	1.300000	3.000000	73.000000	10.000000	12.000000	1850.000000	89.000000	143.000000
25%	2.375000	4.000000	165.000000	17.000000	24.000000	3104.000000	103.000000	178.000000
50%	3.000000	6.000000	210.000000	19.000000	26.000000	3474.500000	107.000000	187.000000
75%	3.900000	6.000000	255.000000	21.250000	29.000000	3977.750000	112.000000	194.000000
max	8.300000	12.000000	500.000000	60.000000	66.000000	7190.000000	144.000000	238.000000

DTYPE

```
car.dtypes
```

```
Make          object
Model         object
Type          object
Origin        object
DriveTrain    object
MSRP          object
Invoice       object
EngineSize    float64
Cylinders     float64
Horsepower    float64
MPG_City      float64
MPG_Highway   float64
Weight        float64
Wheelbase     float64
Length        float64
dtype: object
```

COLUMNS

```
car.columns
```

```
Index(['Make', 'Model', 'Type', 'Origin', 'DriveTrain', 'MSRP', 'Invoice',
       'EngineSize', 'Cylinders', 'Horsepower', 'MPG_City', 'MPG_Highway',
       'Weight', 'Wheelbase', 'Length'],
      dtype='object')
```

##FIND ALL THE NULL VALUE IN THE DATASET. IF THERE IS ANY NULL VALUES IN ANY COLUMN, THEN FILL IT WILL THE MEAN OF THE COLUMNS##

```
car.head(2)
```

	Make	Model	Type	Origin	DriveTrain	MSRP	Invoice	EngineSize	Cylinders	Horsepower	MPG_City	MPG_Highway	Weight	Wh
0	Acura	MDX	SUV	Asia	All	$36,945	$33,337	3.5	6.0	265.0	17.0	23.0	4451.0	
		RSX												

```
car.isnull().sum()
```

```
Make            4
Model           4
Type            4
Origin          4
DriveTrain      4
MSRP            4
Invoice         4
EngineSize      4
Cylinders       6
Horsepower      4
MPG_City        4
MPG_Highway     4
Weight          4
Wheelbase       4
Length          4
dtype: int64
```

```
car['Cylinders'].fillna(car['Cylinders'].mean(), inplace = True)
car['Horsepower'].fillna(car['Horsepower'].mean(), inplace = True)
```

```
car.isnull().sum()
```

```
Make            4
Model           4
Type            4
Origin          4
DriveTrain      4
MSRP            4
Invoice         4
EngineSize      4
Cylinders       0
Horsepower      0
MPG_City        4
MPG_Highway     4
Weight          4
Wheelbase       4
Length          4
dtype: int64
```

CHECK WHAT ARE THE DIFFERENT TYPE OF MAKE ARE THERE IS OUR DATASET. AND, WHAT IS THE COURT(OCCURANCE) OF EACH MAKE IN THE DATA?

```
car.head(2)
```

	Make	Model	Type	Origin	DriveTrain	MSRP	Invoice	EngineSize	Cylinders	Horsepower	MPG_City	MPG_Highway	Weight	Wh
0	Acura	MDX	SUV	Asia	All	$36,945	$33,337	3.5	6.0	265.0	17.0	23.0	4451.0	
		RSX												

```
car['Make'].value_counts()
```

```
Toyota           28
Chevrolet        27
Mercedes-Benz    26
Ford             23
BMW              20
Audi             19
Honda            17
Nissan           17
Volkswagen       15
Chrysler         15
Dodge            13
Mitsubishi       13
Volvo            12
Jaguar           12
Hyundai          12
Subaru           11
Pontiac          11
Mazda            11
Lexus            11
Kia              11
Buick             9
Mercury           9
Lincoln           9
Saturn            8
Cadillac          8
Suzuki            8
Infiniti          8
GMC               8
Acura             7
Porsche           7
Saab              7
Land Rover        3
Oldsmobile        3
Jeep              3
Scion             2
Isuzu             2
MINI              2
Hummer            1
Name: Make, dtype: int64
```

SHOW ALL THE RECORD WHERE ORIGIN IS ASIA OR EUROPE

```
car[(car['Origin'] == 'Asia') | (car['Origin'] == 'Europe')]
```

	Make	Model	Type	Origin	DriveTrain	MSRP	Invoice	EngineSize	Cylinders	Horsepower	MPG_City	MPG_Highway	Wei
0	Acura	MDX	SUV	Asia	All	$36,945	$33,337	3.5	6.0	265.0	17.0	23.0	445
1	Acura	RSX Type S 2dr	Sedan	Asia	Front	$23,820	$21,761	2.0	4.0	200.0	24.0	31.0	277
2	Acura	TSX 4dr	Sedan	Asia	Front	$26,990	$24,647	2.4	4.0	200.0	22.0	29.0	323
3	Acura	TL 4dr	Sedan	Asia	Front	$33,195	$30,299	3.2	6.0	270.0	20.0	28.0	357
4	Acura	3.5 RL 4dr	Sedan	Asia	Front	$43,755	$39,014	3.5	6.0	225.0	18.0	24.0	388
...	...	...	...	...	...	...	...	...	...	...	...	...	
427	Volvo	C70 LPT convertible 2dr	Sedan	Europe	Front	$40,565	$38,203	2.4	5.0	197.0	21.0	28.0	345
428	Volvo	C70 HPT convertible 2dr	Sedan	Europe	Front	$42,565	$40,083	2.3	5.0	242.0	20.0	26.0	345
429	Volvo	S80 T6 4dr	Sedan	Europe	Front	$45,210	$42,573	2.9	6.0	268.0	19.0	26.0	365

REMOVE ALL THE RECORDS(ROWS) WHERE WEIGHT IS ABOVE 4000

```
car.head(2)
```

	Make	Model	Type	Origin	DriveTrain	MSRP	Invoice	EngineSize	Cylinders	Horsepower	MPG_City	MPG_Highway	Weight	Wh
0	Acura	MDX	SUV	Asia	All	$36,945	$33,337	3.5	6.0	265.0	17.0	23.0	4451.0	
		RSX												

```
car[car['Weight'] > 4000]
```

	Make	Model	Type	Origin	DriveTrain	MSRP	Invoice	EngineSize	Cylinders	Horsepower	MPG_City	MPG_Highway
0	Acura	MDX	SUV	Asia	All	$36,945	$33,337	3.5	6.0	265.0	17.0	23.0
15	Audi	A4 3.0 Quattro convertible 2dr	Sedan	Europe	All	$44,240	$40,075	3.0	6.0	220.0	18.0	25.0
17	Audi	A6 4.2 Quattro 4dr	Sedan	Europe	All	$49,690	$44,936	4.2	8.0	300.0	17.0	24.0
18	Audi	A8 L Quattro 4dr	Sedan	Europe	All	$69,190	$64,740	4.2	8.0	330.0	17.0	24.0
20	Audi	RS 6 4dr	Sports	Europe	Front	$84,600	$76,417	4.2	8.0	450.0	15.0	22.0
...	...	...	...	...	...	...	...	...	...	...	...	...
405	Volkswagen	Touareg V6	SUV	Europe	All	$35,515	$32,243	3.2	6.0	220.0	15.0	20.0

```
car[~(car['Weight'] > 4000)]
```

	Make	Model	Type	Origin	DriveTrain	MSRP	Invoice	EngineSize	Cylinders	Horsepower	MPG_City	MPG_Highway	We
1	Acura	RSX Type S 2dr	Sedan	Asia	Front	$23,820	$21,761	2.0	4.0	200.0	24.0	31.0	2
2	Acura	TSX 4dr	Sedan	Asia	Front	$26,990	$24,647	2.4	4.0	200.0	22.0	29.0	3
3	Acura	TL 4dr	Sedan	Asia	Front	$33,195	$30,299	3.2	6.0	270.0	20.0	28.0	3
4	Acura	3.5 RL 4dr	Sedan	Asia	Front	$43,755	$39,014	3.5	6.0	225.0	18.0	24.0	3
5	Acura	3.5 RL w/Navigation 4dr	Sedan	Asia	Front	$46,100	$41,100	3.5	6.0	225.0	18.0	24.0	3
...	...	...	...	...	...	...	...	...	...	...	...	...	
427	Volvo	C70 LPT convertible 2dr	Sedan	Europe	Front	$40,565	$38,203	2.4	5.0	197.0	21.0	28.0	3
428	Volvo	C70 HPT convertible 2dr	Sedan	Europe	Front	$42,565	$40,083	2.3	5.0	242.0	20.0	26.0	3

```
## INCREASE ALL THE VALUES OF 'MPG_CITY' COLUMN BY 3 ##
```

```
car.head(2)
```

	Make	Model	Type	Origin	DriveTrain	MSRP	Invoice	EngineSize	Cylinders	Horsepower	MPG_City	MPG_Highway	Weight	WI

```
car['MPG_City'] = car['MPG_City'].apply(lambda x:x+3)
```

```
car.head(2)
```

	Make	Model	Type	Origin	DriveTrain	MSRP	Invoice	EngineSize	Cylinders	Horsepower	MPG_City	MPG_Highway	Weight	WI
0	Acura	MDX	SUV	Asia	All	$36,945	$33,337	3.5	6.0	265.0	20.0	23.0	4451.0	