In [1]:
```
import pandas as pd
```

In [2]:
```
car = pd.read_csv("F:\example/Data_set.csv")
```

In [3]:
```
car
```

Out[3]:

	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
2	Acura	TSX 4dr	Sedan	Asia	Front	$26,990	$24,647	2.4	4.0	200.0	22.0	29.0	3230.0	105.0	183.0
3	Acura	TL 4dr	Sedan	Asia	Front	$33,195	$30,299	3.2	6.0	270.0	20.0	28.0	3575.0	108.0	186.0
4	Acura	3.5 RL 4dr	Sedan	Asia	Front	$43,755	$39,014	3.5	6.0	225.0	18.0	24.0	3880.0	115.0	197.0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
427	Volvo	C70 LPT convertible 2dr	Sedan	Europe	Front	$40,565	$38,203	2.4	5.0	197.0	21.0	28.0	3450.0	105.0	186.0
428	Volvo	C70 HPT convertible 2dr	Sedan	Europe	Front	$42,565	$40,083	2.3	5.0	242.0	20.0	26.0	3450.0	105.0	186.0
429	Volvo	S80 T6 4dr	Sedan	Europe	Front	$45,210	$42,573	2.9	6.0	268.0	19.0	26.0	3653.0	110.0	190.0
430	Volvo	V40	Wagon	Europe	Front	$26,135	$24,641	1.9	4.0	170.0	22.0	29.0	2822.0	101.0	180.0
431	Volvo	XC70	Wagon	Europe	All	$35,145	$33,112	2.5	5.0	208.0	20.0	27.0	3823.0	109.0	186.0

432 rows × 15 columns

In [4]:
```
car.head()
```

Out[4]:

	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
2	Acura	TSX 4dr	Sedan	Asia	Front	$26,990	$24,647	2.4	4.0	200.0	22.0	29.0	3230.0	105.0	183.0
3	Acura	TL 4dr	Sedan	Asia	Front	$33,195	$30,299	3.2	6.0	270.0	20.0	28.0	3575.0	108.0	186.0
4	Acura	3.5 RL 4dr	Sedan	Asia	Front	$43,755	$39,014	3.5	6.0	225.0	18.0	24.0	3880.0	115.0	197.0

In [5]:
```
# number of rows and columns the data set have
car.shape
```

Out[5]:
```
(432, 15)
```

In [6]:
```
# Finding the null values present in all the columns
car.isnull().sum()
```

Out[6]:
```
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
```

In [12]:
```
#filling null cells with values
car['Make'].fillna('no information available',inplace=True)
car['Model'].fillna('no information available',inplace=True)
car['Type'].fillna('no information available',inplace=True)
car['Origin'].fillna('no information available',inplace=True)
car['DriveTrain'].fillna('no information available',inplace=True)
car['MSRP'].fillna(0,inplace=True)
car['Invoice'].fillna(0,inplace=True)
car['EngineSize'].fillna(0,inplace=True)
car['Cylinders'].fillna(0,inplace=True)
car['Horsepower'].fillna(0,inplace=True)
car['MPG_City'].fillna(0,inplace=True)
car['MPG_Highway'].fillna(0,inplace=True)
car['Weight'].fillna(0,inplace=True)
car['Wheelbase'].fillna(0,inplace=True)
car['Length'].fillna(0,inplace=True)
```

In [13]:
```
car.isnull().sum()
```

Out[13]:
```
Make          0
Model         0
Type          0
Origin        0
DriveTrain    0
MSRP          0
Invoice       0
EngineSize    0
Cylinders     0
Horsepower    0
MPG_City      0
MPG_Highway   0
Weight        0
Wheelbase     0
Length        0
dtype: int64
```

In [14]:
```
# to get the counts of all the manufactures present in first column
car['Make'].value_counts()
```

Out[14]:
```
Toyota                    28
Chevrolet                 27
Mercedes-Benz             26
Ford                      23
BMW                       20
Audi                      19
Nissan                    17
Honda                     17
Chrysler                  15
Volkswagen                15
Mitsubishi                13
Dodge                     13
Hyundai                   12
Jaguar                    12
Volvo                     12
Kia                       11
Mazda                     11
Lexus                     11
Pontiac                   11
Subaru                    11
Lincoln                    9
Mercury                    9
Buick                      9
Saturn                     8
Infiniti                   8
GMC                        8
Cadillac                   8
Suzuki                     8
Porsche                    7
Saab                       7
Acura                      7
no information available   4
Oldsmobile                 3
Jeep                       3
Land Rover                 3
MINI                       2
Scion                      2
Isuzu                      2
Hummer                     1
Name: Make, dtype: int64
```

In [15]:
```
car.head(2)
```

Out[15]:

	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

In [17]:
```
# Show all the records wehre origin is Asia and Europe
car[car['Origin'].isin(['Asia','Europe'])]
```

Out[17]:

	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
2	Acura	TSX 4dr	Sedan	Asia	Front	$26,990	$24,647	2.4	4.0	200.0	22.0	29.0	3230.0	105.0	183.0
3	Acura	TL 4dr	Sedan	Asia	Front	$33,195	$30,299	3.2	6.0	270.0	20.0	28.0	3575.0	108.0	186.0
4	Acura	3.5 RL 4dr	Sedan	Asia	Front	$43,755	$39,014	3.5	6.0	225.0	18.0	24.0	3880.0	115.0	197.0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
427	Volvo	C70 LPT convertible 2dr	Sedan	Europe	Front	$40,565	$38,203	2.4	5.0	197.0	21.0	28.0	3450.0	105.0	186.0
428	Volvo	C70 HPT convertible 2dr	Sedan	Europe	Front	$42,565	$40,083	2.3	5.0	242.0	20.0	26.0	3450.0	105.0	186.0
429	Volvo	S80 T6 4dr	Sedan	Europe	Front	$45,210	$42,573	2.9	6.0	268.0	19.0	26.0	3653.0	110.0	190.0
430	Volvo	V40	Wagon	Europe	Front	$26,135	$24,641	1.9	4.0	170.0	22.0	29.0	2822.0	101.0	180.0
431	Volvo	XC70	Wagon	Europe	All	$35,145	$33,112	2.5	5.0	208.0	20.0	27.0	3823.0	109.0	186.0

281 rows × 15 columns

In [18]:
```
# Remove all the records(rows) where Weight is above 4000
car[~(car['Weight']>4000)]
```

Out[18]:

	Make	Model	Type	Origin	DriveTrain	MSRP	Invoice	EngineSize	Cylinders	Horsepower	MPG_City	MPG_Highway	Weight	Wheelbase	Length
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
2	Acura	TSX 4dr	Sedan	Asia	Front	$26,990	$24,647	2.4	4.0	200.0	22.0	29.0	3230.0	105.0	183.0
3	Acura	TL 4dr	Sedan	Asia	Front	$33,195	$30,299	3.2	6.0	270.0	20.0	28.0	3575.0	108.0	186.0
4	Acura	3.5 RL 4dr	Sedan	Asia	Front	$43,755	$39,014	3.5	6.0	225.0	18.0	24.0	3880.0	115.0	197.0
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	3893.0	115.0	197.0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
427	Volvo	C70 LPT convertible 2dr	Sedan	Europe	Front	$40,565	$38,203	2.4	5.0	197.0	21.0	28.0	3450.0	105.0	186.0
428	Volvo	C70 HPT convertible 2dr	Sedan	Europe	Front	$42,565	$40,083	2.3	5.0	242.0	20.0	26.0	3450.0	105.0	186.0
429	Volvo	S80 T6 4dr	Sedan	Europe	Front	$45,210	$42,573	2.9	6.0	268.0	19.0	26.0	3653.0	110.0	190.0
430	Volvo	V40	Wagon	Europe	Front	$26,135	$24,641	1.9	4.0	170.0	22.0	29.0	2822.0	101.0	180.0
431	Volvo	XC70	Wagon	Europe	All	$35,145	$33,112	2.5	5.0	208.0	20.0	27.0	3823.0	109.0	186.0

329 rows × 15 columns

In [19]:
```
car.shape
```

Out[19]:
```
(432, 15)
```

In [21]:
```
car
```

Out[21]:

	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
2	Acura	TSX 4dr	Sedan	Asia	Front	$26,990	$24,647	2.4	4.0	200.0	22.0	29.0	3230.0	105.0	183.0
3	Acura	TL 4dr	Sedan	Asia	Front	$33,195	$30,299	3.2	6.0	270.0	20.0	28.0	3575.0	108.0	186.0
4	Acura	3.5 RL 4dr	Sedan	Asia	Front	$43,755	$39,014	3.5	6.0	225.0	18.0	24.0	3880.0	115.0	197.0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
427	Volvo	C70 LPT convertible 2dr	Sedan	Europe	Front	$40,565	$38,203	2.4	5.0	197.0	21.0	28.0	3450.0	105.0	186.0
428	Volvo	C70 HPT convertible 2dr	Sedan	Europe	Front	$42,565	$40,083	2.3	5.0	242.0	20.0	26.0	3450.0	105.0	186.0
429	Volvo	S80 T6 4dr	Sedan	Europe	Front	$45,210	$42,573	2.9	6.0	268.0	19.0	26.0	3653.0	110.0	190.0
430	Volvo	V40	Wagon	Europe	Front	$26,135	$24,641	1.9	4.0	170.0	22.0	29.0	2822.0	101.0	180.0
431	Volvo	XC70	Wagon	Europe	All	$35,145	$33,112	2.5	5.0	208.0	20.0	27.0	3823.0	109.0	186.0

432 rows × 15 columns

In [ ]: