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

In [16]:
```
from sklearn.preprocessing import LabelEncoder
```

In [6]:
```
df=pd.read_csv("C:\\Users\\acer\\Downloads\\CarPrice_Assignment.csv")
df
```

Out[6]:

	car_ID	symboling	CarName	fueltype	aspiration	doornumber	carbody	drivewheel	enginelocation	wheelbase	...	enginesize	fuelsystem	boreratio	stroke	compressionratio	horsepower
0	1	3	alfa-romero giulia	gas	std	two	convertible	rwd	front	88.6	...	130	mpfi	3.47	2.68	9.0	111
1	2	3	alfa-romero stelvio	gas	std	two	convertible	rwd	front	88.6	...	130	mpfi	3.47	2.68	9.0	111
2	3	1	alfa-romero Quadrifoglio	gas	std	two	hatchback	rwd	front	94.5	...	152	mpfi	2.68	3.47	9.0	154
3	4	2	audi 100 ls	gas	std	four	sedan	fwd	front	99.8	...	109	mpfi	3.19	3.40	10.0	102
4	5	2	audi 100ls	gas	std	four	sedan	4wd	front	99.4	...	136	mpfi	3.19	3.40	8.0	115
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
200	201	-1	volvo 145e (sw)	gas	std	four	sedan	rwd	front	109.1	...	141	mpfi	3.78	3.15	9.5	114
201	202	-1	volvo 144ea	gas	turbo	four	sedan	rwd	front	109.1	...	141	mpfi	3.78	3.15	8.7	160
202	203	-1	volvo 244dl	gas	std	four	sedan	rwd	front	109.1	...	173	mpfi	3.58	2.87	8.8	134
203	204	-1	volvo 246	diesel	turbo	four	sedan	rwd	front	109.1	...	145	idi	3.01	3.40	23.0	106
204	205	-1	volvo 264gl	gas	turbo	four	sedan	rwd	front	109.1	...	141	mpfi	3.78	3.15	9.5	114

205 rows × 26 columns

In [9]:
```
df.shape
```

Out[9]:
```
(205, 26)
```

In [14]:
```
df2=df[["fueltype","carbody","fuelsystem"]]
df2
```

Out[14]:

	fueltype	carbody	fuelsystem
0	gas	convertible	mpfi
1	gas	convertible	mpfi
2	gas	hatchback	mpfi
3	gas	sedan	mpfi
4	gas	sedan	mpfi
...	...	...	...
200	gas	sedan	mpfi
201	gas	sedan	mpfi
202	gas	sedan	mpfi
203	diesel	sedan	idi
204	gas	sedan	mpfi

205 rows × 3 columns

In [17]:
```
le=LabelEncoder()
```

In [18]:
```
le.fit_transform(df2["fueltype"])
```

Out[18]:
```
array([1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
       1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
       1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 0, 1, 1,
       0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
       1, 1, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 0,
       0, 1, 0, 1, 0, 1, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
       1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
       1, 1, 1, 1, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 0, 1,
       1, 1, 1, 1, 1, 1, 0, 1, 0, 1, 1, 0, 1, 1, 1, 1, 0, 1, 1, 1, 1,
       1, 1, 1, 1, 1, 0, 1])
```

In [20]:
```
df2["fueltype_le_eco"]=le.fit_transform(df2["fueltype"])
```

```
<ipython-input-20-3706e61ba088>:1: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  df2["fueltype_le_eco"]=le.fit_transform(df2["fueltype"])
```

In [22]:
```
df2
```

Out[22]:

	fueltype	carbody	fuelsystem	fueltype_le_eco
0	gas	convertible	mpfi	1
1	gas	convertible	mpfi	1
2	gas	hatchback	mpfi	1
3	gas	sedan	mpfi	1
4	gas	sedan	mpfi	1
...	...	...	...	...
200	gas	sedan	mpfi	1
201	gas	sedan	mpfi	1
202	gas	sedan	mpfi	1
203	diesel	sedan	idi	0
204	gas	sedan	mpfi	1

205 rows × 4 columns

In [23]:
```
df2["fueltype"].value_counts()
```

Out[23]:
```
gas       185
diesel     20
Name: fueltype, dtype: int64
```

In [29]:
```
df["carbody"].value_counts()
```

Out[29]:
```
sedan          96
hatchback      70
wagon          25
hardtop         8
convertible     6
Name: carbody, dtype: int64
```

we converted carbody category in ordinal data for understanding point of view sedan very good=1 hatchback good=2 wagon avarage=3 hardtop bad=4 convertible very bad=5

In [34]:
```
order_label1={"sedan":1,"hatchback":2,"wagon":3,"hardtop":4,"convertible":5}
```

In [35]:
```
df2["carbody"].map(order_label1)
```

Out[35]:
```
0      5
1      5
2      2
3      1
4      1
      ..
200    1
201    1
202    1
203    1
204    1
Name: carbody, Length: 205, dtype: int64
```

In [36]:
```
df2["carbody_ol_enc"]=df2["carbody"].map(order_label1)
```

```
<ipython-input-36-8a64676403ba>:1: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy
  df2["carbody_ol_enc"]=df2["carbody"].map(order_label1)
```

In [37]:
```
df2
```

Out[37]:

	fueltype	carbody	fuelsystem	fueltype_le_eco	carbody_ol_enc
0	gas	convertible	mpfi	1	5
1	gas	convertible	mpfi	1	5
2	gas	hatchback	mpfi	1	2
3	gas	sedan	mpfi	1	1
4	gas	sedan	mpfi	1	1
...	...	...	...	...	...
200	gas	sedan	mpfi	1	1
201	gas	sedan	mpfi	1	1
202	gas	sedan	mpfi	1	1
203	diesel	sedan	idi	0	1
204	gas	sedan	mpfi	1	1

205 rows × 5 columns

In [ ]:
```

```