Import necessary modules

In [17]:
```
import pandas as pd
import numpy as np
```

Task1: To generate muscle car data of 20 cars and corresponding id

In [18]:
```
muscle_car=pd.Series(np.random.randint(30000,50000,20),index=np.arange(101,121))
muscle_car
```

Out[18]:
```
101    47489
102    35255
103    32873
104    42942
105    46902
106    49840
107    32249
108    35625
109    31513
110    41712
111    30284
112    44291
113    49092
114    41163
115    36261
116    48446
117    39502
118    38093
119    49395
120    40971
dtype: int32
```

Task2: To find the cars which cost more than 40000

In [19]:
```
print("Total cars greater thab 40k are->",muscle_car[muscle_car>40000].size)
muscle_car[muscle_car>40000]
```

```
Total cars greater thab 40k are-> 11
```

Out[19]:
```
101    47489
104    42942
105    46902
106    49840
110    41712
112    44291
113    49092
114    41163
116    48446
119    49395
120    40971
dtype: int32
```

Task3: To find all the cars who are between index 111 and 116

In [20]:
```
muscle_car[10:16]
```

Out[20]:
```
111    30284
112    44291
113    49092
114    41163
115    36261
116    48446
dtype: int32
```

Task4: To find all the cars priced between 30000 to 40000

In [21]:
```
print("The total number of cars in range 30K to 40K is ->",muscle_car[(muscle_car>30000) & (muscle_car<40000)].size)
```

```
The total number of cars in range 30K to 40K is -> 9
```

Task5: To find the total number of cars greater than average price

In [22]:
```
muscle_car[muscle_car>muscle_car.mean()].size
```

Out[22]:
```
11
```

Task6: To add three new cars to the muscle car data

In [23]:
```
new=pd.Series([34000,45000,54000],index=[201,202,203])
muscle_car.append(new)
muscle_car
```

Out[23]:
```
101    47489
102    35255
103    32873
104    42942
105    46902
106    49840
107    32249
108    35625
109    31513
110    41712
111    30284
112    44291
113    49092
114    41163
115    36261
116    48446
117    39502
118    38093
119    49395
120    40971
dtype: int32
```

Task7: To provide 10% discount for all the values greater than 40000 and show them side by side with previous prices

In [24]:
```
discounted=muscle_car.copy(deep=True)
```

In [25]:
```
discounted[discounted>40000]=discounted*0.9
```

In [27]:
```
prices=pd.DataFrame(muscle_car,columns=["Prices"])
prices["discounted"]=discounted
prices
```

Out[27]:

	Prices	discounted
101	47489	42740.1
102	35255	35255.0
103	32873	32873.0
104	42942	38647.8
105	46902	42211.8
106	49840	44856.0
107	32249	32249.0
108	35625	35625.0
109	31513	31513.0
110	41712	37540.8
111	30284	30284.0
112	44291	39861.9
113	49092	44182.8
114	41163	37046.7
115	36261	36261.0
116	48446	43601.4
117	39502	39502.0
118	38093	38093.0
119	49395	44455.5
120	40971	36873.9

Task8: To find total cars in range 30k to 40k before and after discount

In [33]:
```
print("The total no of cars in range before discount-> ",prices.Prices[(prices["Prices"]>30000) & (prices["Prices"]<40000)].size)
print("The total no of cars in range after discount->",prices.discounted[(prices["discounted"]>30000) & (prices["discounted"]<40000)].size)
```

```
The total no of cars in range before discount->  9
The total no of cars in range after discount-> 14
```

Task 9 : To find the top 5 least expensive cars

In [34]:
```
print("The top five least expensive cars",sorted(prices.discounted)[0:5])
```

```
The top five least expensive cars [30284.0, 31513.0, 32249.0, 32873.0, 35255.0]
```