

In [1]:

```
import pandas as pd
import numpy as np
```

In [22]:

```
pd.Series()
```

Out[22]:

```
Series([], dtype: float64)
```

In [21]:

```
import warnings
warnings.filterwarnings('ignore')
```

Task 1 :-

In [4]:

```
name = np.arange(101,121)
name
```

Out[4]:

```
array([101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113,
       114, 115, 116, 117, 118, 119, 120])
```

In [5]:

```
pd.Series(name)
price = np.random.randint(30000,50000,20)
price
```

Out[5]:

```
array([36958, 34631, 48192, 36361, 30341, 39997, 36927, 34265, 49695,
       49703, 34110, 35563, 44091, 44025, 38392, 48059, 46614, 30093,
       33671, 39681])
```

In [6]:

```
cars = pd.Series(price,index=name)
cars
```

Out[6]:

```
101    36958
102    34631
103    48192
104    36361
105    30341
106    39997
107    36927
108    34265
109    49695
110    49703
111    34110
112    35563
113    44091
114    44025
115    38392
116    48059
117    46614
118    30093
119    33671
120    39681
dtype: int32
```

Task 2 :-

In [7]:

```
cars[(cars>40000)]
```

Out[7]:

```
103    48192
109    49695
110    49703
113    44091
114    44025
116    48059
117    46614
dtype: int32
```

Task 3 :-

In [8]:

```
print(cars[10:16])
```

```
111    34110
112    35563
113    44091
114    44025
115    38392
116    48059
dtype: int32
```

In [9]:

```
print(max(cars[10:16]))
```

48059

Task 4 :-

In [10]:

```
new_cars = cars[(cars>=30000) & (cars<=40000)]
new_cars
```

Out[10]:

```
101    36958
102    34631
104    36361
105    30341
106    39997
107    36927
108    34265
111    34110
112    35563
115    38392
118    30093
119    33671
120    39681
dtype: int32
```

Task 5:-

In [11]:

```
avg = cars.mean()
avg
```

Out[11]:

39568.45

In [12]:

```
cars[(cars > 40392)]
```

Out[12]:

```
103    48192
109    49695
110    49703
113    44091
114    44025
116    48059
117    46614
dtype: int32
```

Task 6:-

In [13]:

```
new_name = [201,202,203]
new_price = [34000,45000,54000]
new_car = pd.Series(new_price, index=new_name)
new_car
```

Out[13]:

```
201    34000
202    45000
203    54000
dtype: int64
```

In [14]:

```
All_cars = pd.concat([cars,new_car])
All_cars
```

Out[14]:

```
101    36958
102    34631
103    48192
104    36361
105    30341
106    39997
107    36927
108    34265
109    49695
110    49703
111    34110
112    35563
113    44091
114    44025
115    38392
116    48059
117    46614
118    30093
119    33671
120    39681
201    34000
202    45000
203    54000
dtype: int64
```

Task 7 :-

In [15]:

```
discount = cars[(cars > 40000)]
discount = cars[(cars > 40000)]*0.9
discount
```

Out[15]:

```
103    43372.8
109    44725.5
110    44732.7
113    39681.9
114    39622.5
116    43253.1
117    41952.6
dtype: float64
```

In [16]:

```
old_car = cars[(cars > 40000)]  
old_car
```

Out[16]:

```
103    48192  
109    49695  
110    49703  
113    44091  
114    44025  
116    48059  
117    46614  
dtype: int32
```

In [17]:

```
df = pd.DataFrame(old_car, columns=['Prices'])  
df  
df['Discount'] = discount  
df
```

Out[17]:

	Prices	Discount
103	48192	43372.8
109	49695	44725.5
110	49703	44732.7
113	44091	39681.9
114	44025	39622.5
116	48059	43253.1
117	46614	41952.6

Task 8 :-

In [18]:

```
print("Total no of cars in rage Before discount : ", df.size)  
print("Total no of cars in rage After discount : ",  
      All_cars[(All_cars>30000) & (All_cars<40000)].size)
```

```
Total no of cars in rage Before discount :  14  
Total no of cars in rage After discount :  14
```

Task 9 :-

In [19]:

```
All_cars
```

Out[19]:

```
101    36958  
102    34631  
103    48192  
104    36361  
105    30341  
106    39997  
107    36927  
108    34265  
109    49695  
110    49703  
111    34110  
112    35563  
113    44091  
114    44025  
115    38392  
116    48059  
117    46614  
118    30093  
119    33671  
120    39681  
201    34000  
202    45000  
203    54000  
dtype: int64
```

In [20]:

```
filter_data = All_cars.sort_values(ascending = True)
filter_data
filter_data.iloc[:5]
```

Out[20]:

```
118    30093
105    30341
119    33671
201    34000
111    34110
dtype: int64
```

In []: