

```
In [23]: ▶ import pandas as pd
import numpy as np
```

```
In [2]: ▶ data={'name':['anu','neenu','vinu','sanu'],
               'age':[20,21,14,13]}
df=pd.DataFrame(data)

df['voting eligibility'] = ['eligible' if age > 18 else 'not eligible' for
df
```

Out[2]:

	name	age	voting eligibility
0	anu	20	eligible
1	neenu	21	eligible
2	vinu	14	not eligible
3	sanu	13	not eligible

```
In [14]: ▶ original_data=pd.Series([100,200,'python',300.12,400])
print(original_data)
data=pd.Series(['hello'])
new_data=original_data.append(data)
print(new_data)
```

```
0      100
1      200
2    python
3    300.12
4      400
dtype: object
0      100
1      200
2    python
3    300.12
4      400
0    hello
dtype: object
```

C:\Users\Dell\AppData\Local\Temp\ipykernel_7496\2701252432.py:4: FutureWarning: The series.append method is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.
new_data=original_data.append(data)

```
In [11]: data={'Name':['Sivani','Fahma','Shahana','Hadhiya'],
              'Age':[12,13,14,15],
              'Class':[7,6,8,9]}
df=pd.DataFrame(data)
order=['Class','Age','Name']
df=df[order]
df
```

Out[11]:

	Class	Age	Name
0	7	12	Sivani
1	6	13	Fahma
2	8	14	Shahana
3	9	15	Hadhiya

```
In [15]: d={"city":["California","Georgia","Los Angeles","California","Georgia","Los Angeles"],
            "people": [8,4,8,8,4,8]}
df=pd.DataFrame(d)
city_people=df.groupby('city')['people'].sum()
print(city_people)
```

```
city
California    8
Georgia       4
Los Angeles   8
Name: people, dtype: int64
```

```
In [19]: a=pd.Series([1,2,3,4])
b=pd.Series([5,6,7,8])
add=a+b
sub=a-b
mul=a*b
div=a/b
df=pd.DataFrame({
    'First':a,
    'Second':b,
    'Add':add,
    'Sub':sub,
    'Mul':mul,
    'Div':div
})
df
```

Out[19]:

	First	Second	Add	Sub	Mul	Div
0	1	5	6	-4	5	0.200000
1	2	6	8	-4	12	0.333333
2	3	7	10	-4	21	0.428571
3	4	8	12	-4	32	0.500000

```
In [22]: ▶ s1=pd.Series([5,7,3,9,1])
s2=pd.Series(sorted(s1.values))
print(s2)
```

```
0    1
1    3
2    5
3    7
4    9
dtype: int64
```

```
In [29]: ▶ data={'name': ['Asha', 'Radha', 'Kamal', 'Divy', 'Anjali'],
                'height': [ 5.5, 5, np.nan, 5.9, np.nan],
                'age': [11, 23, 22, 33, 22]}
df=pd.DataFrame(data)
row=df[df['height'].isna()]
row
```

Out[29]:

	name	height	age
2	Kamal	NaN	22
4	Anjali	NaN	22

```
In [31]: ▶ data = {'Manasvi': ['Physics', 'Chemistry', 'English', 'Maths', 'Computer S
                'marks': [ 89,99,97,99,98],}
df=pd.DataFrame(data)
sum_=df['marks'].sum()
print(sum_)
```

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```
In [36]: ▶ data={'Name':['Sivani','Fahma','Shahana'],
                'Roll num':[33,34,35],
                'English':np.random.randint(50,100,size=3),
                'Malayalam':np.random.randint(50,100,size=3),
                'Hindi':np.random.randint(50,100,size=3),
                'Maths':np.random.randint(50,100,size=3),
                'Science':np.random.randint(50,100,size=3)}
df=pd.DataFrame(data)
df['Percentage'] = df[['English','Malayalam','Hindi','Maths','Science']].me
df
```

Out[36]:

	Name	Roll num	English	Malayalam	Hindi	Maths	Science	Percentage
0	Sivani	33	97	68	54	74	69	72.4
1	Fahma	34	63	92	51	57	80	68.6
2	Shahana	35	81	55	58	51	52	59.4

In []: ▶