

```
In [1]: import pandas as pd
import numpy as np
a=pd.DataFrame([[2,7,3]]*3,columns=['p','q','r'])
print(a)
```

	p	q	r
0	2	7	3
1	2	7	3
2	2	7	3

```
In [2]: print(a.apply(np.sqrt))
```

	p	q	r
0	1.414214	2.645751	1.732051
1	1.414214	2.645751	1.732051
2	1.414214	2.645751	1.732051

```
In [3]: print(a.apply(np.sum,axis=0))
```

	p
q	21
r	9

dtype: int64

```
In [4]: print(a.apply(np.sum,axis=1))
```

0	12
1	12
2	12

dtype: int64

```
In [8]: print(a.agg(['min','max']))
```

	p	q	r
min	2	7	3
max	2	7	3

```
In [9]: a['s']=[1,2,3]
print(a)
```

	p	q	r	s
0	2	7	3	1
1	2	7	3	2
2	2	7	3	3

```
In [11]: c=a.assign(T=[4,5,6])
print(c)
```

	p	q	r	s	T
0	2	7	3	1	4
1	2	7	3	2	5
2	2	7	3	3	6

In [12]: `print(a.sort_values(by='s'))`

	p	q	r	s
0	2	7	3	1
1	2	7	3	2
2	2	7	3	3

In [13]: `print(a['p'])`

0	2
1	2
2	2

Name: p, dtype: int64

In [14]: `print(a.shape)`

(3, 4)

In [15]: `print(a[:1])`

	p	q	r	s
0	2	7	3	1

In [16]: `print(a.loc[2])`

p	2
q	7
r	3
s	3

Name: 2, dtype: int64

In [17]: `print(a['s']/3)`

0	0.333333
1	0.666667
2	1.000000

Name: s, dtype: float64

In [18]: `import pandas as pd`  
`x=pd.DataFrame([[10,'xx',98],[11,'yy',55],[12,'zz',60]],index=[1,2,3],columns=['Roll no','Name','Marks'])`  
`print(x)`

	Roll no	Name	Marks
1	10	xx	98
2	11	yy	55
3	12	zz	60

In [31]: `x.to_excel('x.xlsx')`  
`print(x)`

	Roll no	Name	Marks
1	10	xx	98
2	11	yy	55
3	12	zz	60

```
In [30]: x.to_csv('x.csv')
print(x)
```

	Roll no	Name	Marks
1	10	xx	98
2	11	yy	55
3	12	zz	60

```
In [36]: import pandas as pd
a=pd.DataFrame([[101,'AA',76,81,80],[102,'BB',52,66,66],[103,'CC',96,91,100])
print(a)
```

	Roll no	Name	M1	M2	M3
1	101	AA	76	81	80
2	102	BB	52	66	66
3	103	CC	96	91	100
4	104	DD	80	82	84
5	105	EE	10	15	21

```
In [37]: b=a.agg(['min','max'])
print(b)
```

	Roll no	Name	M1	M2	M3
min	101	AA	10	15	21
max	105	EE	96	91	100

```
In [39]: a['Result']=['pass','pass','pass','pass','fail']
print(a)
```

	Roll no	Name	M1	M2	M3	Result
1	101	AA	76	81	80	pass
2	102	BB	52	66	66	pass
3	103	CC	96	91	100	pass
4	104	DD	80	82	84	pass
5	105	EE	10	15	21	fail

```
In [ ]:
```