

```
In [1]: import numpy

speed = [99,86,87,88,111,86,103,87,94,78,77,85,86]

x = numpy.mean(speed)

print(x)

89.76923076923077
```

```
In [2]: import numpy

speed = [99,86,87,88,111,86,103,87,94,78,77,85,86]

x = numpy.median(speed)

print(x)

87.0
```

```
In [7]: import numpy

speed = [99,86,87,88,86,103,87,94,78,77,85,86]

x = numpy.median(speed)

print(x)

86.5
```

```
In [8]: from scipy import stats

speed = [99,86,87,88,111,86,103,87,94,78,77,85,86]

x = stats.mode(speed)

print(x)

ModeResult(mode=array([86]), count=array([3]))
```

```
In [9]: n_num = [1, 2, 3, 4, 5]
n = len(n_num)

get_sum = sum(n_num)
mean = get_sum/n

print("Mean / Average is : " + str(mean))

Mean / Average is : 3.0
```

```
In [10]: n_num = [1, 2, 3, 4, 5]
n = len(n_num)
n_num.sort()

if n % 2 == 0:
    median1 = n_num[n//2]
    median2 = n_num[n//2-1]
    median = (median1 + median2)/2
else:
    median = n_num[n//2]
print("Median is : " + str(median))
```

Median is : 3

```
In [16]: from collections import Counter

n_num = [1, 2, 3, 4, 5, 5]
n = len(n_num)

data = Counter(n_num)
get_mode = dict(data)
mode = [k for k, v in get_mode.items() if v == max(list(data.values()))]

if len(mode) == n:
    get_mode = "No mode found"
else:
    get_mode = "Mode is/are : " + ', '.join(map(str, mode))
print(get_mode)
```

Mode is/are : 5

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

df = pd.DataFrame({'A' : ['a', 'b', 'c', 'c', 'a', 'b'],
                   'B' : [0, 1, 1, 0, 1, 0]}, dtype = "category")
df.dtypes
```

```
Out[17]: A    category
B    category
dtype: object
```

```
In [18]: print(df)

print(df.groupby(['A']). count().reset_index())
```

```
  A  B
0  a  0
1  b  1
2  c  1
3  c  0
4  a  1
5  b  0
  A  B
0  a  2
1  b  2
2  c  2
```

```
In [19]: import pandas as pd

df = pd.DataFrame({'A' : ['a', 'b', 'c', 'c', 'a', 'b'],
                  'B' : [0, 1, 1, 0, 1, 0],
                  'C' : [7, 8, 9, 5, 3, 6]})

df['A'] = df['A'].astype('category')

print(df)

print(df.groupby(['A', 'B']).mean().reset_index())
```

	A	B	C
0	a	0	7
1	b	1	8
2	c	1	9
3	c	0	5
4	a	1	3
5	b	0	6

	A	B	C
0	a	0	7
1	a	1	3
2	b	0	6
3	b	1	8
4	c	0	5
5	c	1	9

```
In [22]: import pandas as pd

data = pd.read_csv(r"D:\College\TE\SEM-2\Practical\DSBDA\3\Iris.csv")

print('Iris-setosa')
setosa= data['Species'] == 'Iris-setosa'
print(data[setosa].describe())

print('\nIris-versicolor')
versicolor= data['Species'] == 'Iris-versicolor'
print(data[versicolor].describe())

print('\nIris-virginica')
virginica = data['Species'] == 'Iris-virginica'
print (data[virginica].describe())
```

Iris-setosa

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm
count	50.00000	50.00000	50.00000	50.00000	50.00000
mean	25.50000	5.00600	3.41800	1.46400	0.24400
std	14.57738	0.35249	0.381024	0.173511	0.10721
min	1.00000	4.30000	2.30000	1.00000	0.10000
25%	13.25000	4.80000	3.12500	1.40000	0.20000
50%	25.50000	5.00000	3.40000	1.50000	0.20000
75%	37.75000	5.20000	3.67500	1.57500	0.30000
max	50.00000	5.80000	4.40000	1.90000	0.60000

Iris-versicolor

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm
count	50.00000	50.00000	50.00000	50.00000	50.00000
mean	75.50000	5.93600	2.77000	4.26000	1.32600
std	14.57738	0.516171	0.313798	0.469911	0.197753
min	51.00000	4.90000	2.00000	3.00000	1.00000
25%	63.25000	5.60000	2.52500	4.00000	1.20000
50%	75.50000	5.90000	2.80000	4.35000	1.30000
75%	87.75000	6.30000	3.00000	4.60000	1.50000
max	100.00000	7.00000	3.40000	5.10000	1.80000

Iris-virginica

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm
count	50.00000	50.00000	50.00000	50.00000	50.00000
mean	125.50000	6.58800	2.97400	5.55200	2.02600
std	14.57738	0.63588	0.322497	0.551895	0.27465
min	101.00000	4.90000	2.20000	4.50000	1.40000
25%	113.25000	6.22500	2.80000	5.10000	1.80000
50%	125.50000	6.50000	3.00000	5.55000	2.00000
75%	137.75000	6.90000	3.17500	5.87500	2.30000
max	150.00000	7.90000	3.80000	6.90000	2.50000

```
In [ ]:
```