

```
[1]: import numpy
```

```
[3]: import pandas
```

```
[5]: import pandas as pd
```

```
[7]: print("Sarthak")
```

Sarthak

```
[11]: import math
```

```
[13]: print(math.floor(11.5))
```

11

```
[15]: print(math.ceil(2.4))
print(math.ceil(-5.3))
print(math.ceil(10.0))
print(math.ceil(25.6))
```

3
-5
10
26

```
print(math.sqrt(10)) ...
```

3.1622776601683795
10.0
8.246211251235321
16.0

```
[19]: print(math.gcd(25,56))
```

1

```
[21]: print(math.gcd(10,20))
```

10

```
[23]: print(math.factorial(6))
```

720

```
[27]: print(math.isqrt(100))
print(math.sqrt(256))
print(math.sqrt(68))
```

10
16.0
8.246211251235321

```
[2]: import numpy
```

```
[4]: import pandas as pd
```

```
[6]: x=numpy.array([[1,2,3],[4,5,8],[1,7,9]])
```

```
[8]: print(x)
```

```
[[1 2 3]
 [4 5 8]
 [1 7 9]]
```

```
[10]: print(x.ndim)
print(x.shape)
print(x.size)
```

```
2
(3, 3)
9
```

```
[12]: import numpy as np
```

```
[18]: a=[1,2,3,4,5]
```

```
[20]: type(a)
```

```
[20]: list
```

```
[22]: import statistics
b=statistics.mean(a)
print(b)
```

```
3
```

```
[24]: c=statistics.median(a)
print(c)
```

```
3
```

```
[26]: d=[1,2,3,4,2,18]
```

```
[28]: type(d)
```

```
[28]: list
```

```
[30]: e=statistics.mode(d)
print(e)
```

```
2
```

```
[34]: f=np.array([1,2,3,4,5])
```

```
[36]: fn=f.sum()
```

```
[38]: print(fn)
```

```
15
```

```
[40]: cv=np.array(["Guava","Banana","Cherry","Apple"])
print(np.sort(cv))
```

```
['Apple' 'Banana' 'Cherry' 'Guava']
```

```
[1]: import scipy
```

```
[3]: from scipy import linalg
```

```
[5]: import numpy as np
```

```
[7]: x=np.array([[2,2],[4,2]])
```

```
[9]: print(x)
```

```
[[2 2]
 [4 2]]
```

```
[11]: from scipy import linalg
```

```
[13]: c=linalg.det(x)
```

```
[15]: a,b=linalg.eig(x)
```

```
[17]: print(a)
      print(b)
```

```
[ 4.82842712+0.j -0.82842712+0.j]
[[ 0.57735027 -0.57735027]
 [ 0.81649658  0.81649658]]
```

```
[19]: import numpy as np
```

```
[21]: a=np.array([1,2,3,6])
```

```
[23]: print(a)
```

```
[1 2 3 6]
```

```
[25]: import pandas as pd  
      t=pd.Series([1,2,3,4,5,6])
```

```
[27]: print(t)
```

```
0    1  
1    2  
2    3  
3    4  
4    5  
5    6  
dtype: int64
```

```
[29]: print(t.index)  
      print(t.values)
```

```
RangeIndex(start=0, stop=6, step=1)  
[1 2 3 4 5 6]
```

```
[31]: fruits=['Apple','Mango','Kiwi','Oranges']  
      quant=[10,15,12,13]
```

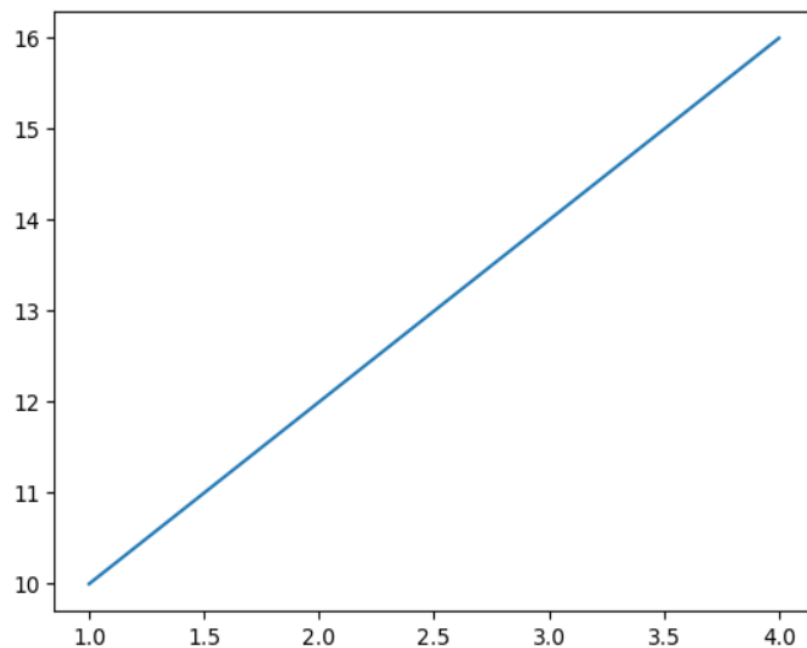
```
[33]: D=pd.Series(quant, index=fruits)
```

```
[35]: D
```

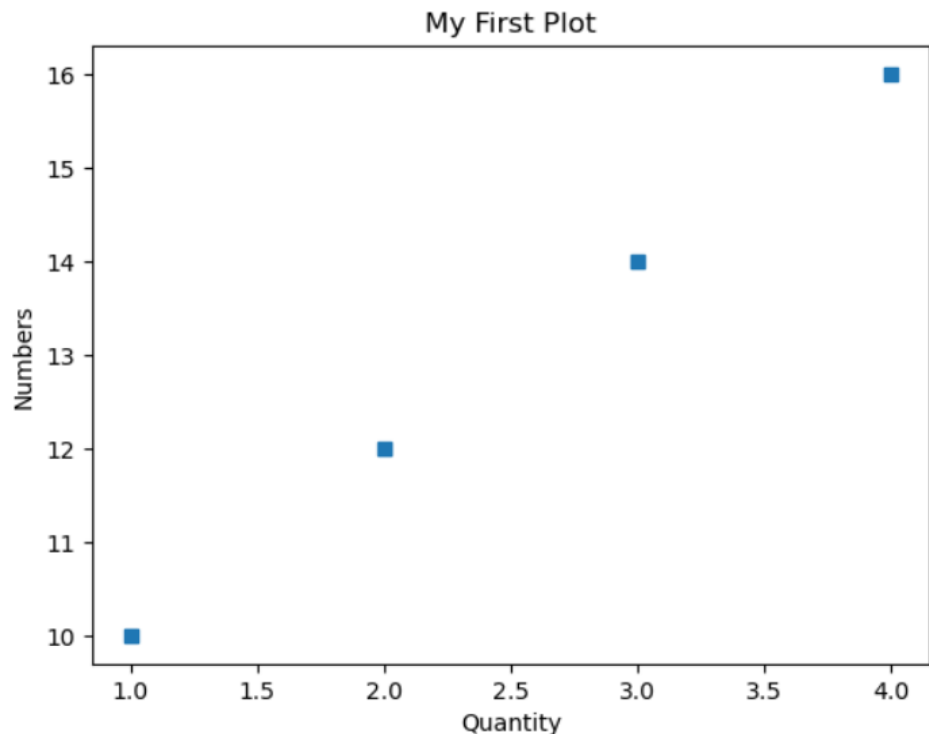
```
[35]: Apple      10  
      Mango      15  
      Kiwi       12  
      Oranges    13  
      dtype: int64
```

```
[37]: import numpy as np  
      l=np.array([1,2,3,4])  
      m=np.array([10,12,14,16])
```

```
[41]: import matplotlib.pyplot as plt  
      F=plt.plot([1,2,3,4],[10,12,14,16])
```



```
[43]: plt.plot(l,m, "s")
plt.title('My First Plot')
plt.xlabel("Quantity")
plt.ylabel("Numbers")
plt.show()
```



```
[45]: a=[1,2,5,7,12,4,5,6,8]
```

```
[47]: import statistics
m=statistics.mean(a)
n=statistics.median(a)
o=statistics.mode(a)
p=statistics.stdev(a)
q=statistics.variance(a)
print("Mean is: ", m)
print("Median is: ", n)
print("Mode is: ", o)
print("Standard Deviation is: ", p)
print("Variance is: ", q)
```

```
Mean is:  5.555555555555555
```

```
Median is:  5
```

```
Mode is:  5
```

```
Standard Deviation is:  3.2829526005987018
```

```
Variance is:  10.777777777777777
```