

# numpy

October 29, 2025

```
[2]: import numpy as np
      n1=np.array([10,20,30,40])
      n1
```

```
[2]: array([10, 20, 30, 40])
```

```
[3]: import numpy as mnp
      n2=np.array([[10,20,30],[50,60,70]])
      n2
```

```
[3]: array([[10, 20, 30],
           [50, 60, 70]])
```

```
[4]: #initialising numpy array with zeroes
      n3=np.zeros((1,2))
      n3
```

```
[4]: array([[0., 0.]])
```

```
[5]: n4=np.zeros((4,4))
      n4
```

```
[5]: array([[0., 0., 0., 0.],
           [0., 0., 0., 0.],
           [0., 0., 0., 0.],
           [0., 0., 0., 0.]])
```

```
[6]: #inialising numpy array with same number
      n5=np.full((3,3),11)
      n5
```

```
[6]: array([[11, 11, 11],
           [11, 11, 11],
           [11, 11, 11]])
```

```
[10]: n6=np.arange(1,10)
      n6
```

```
[10]: array([1, 2, 3, 4, 5, 6, 7, 8, 9])
```

```
[ ]: n7=np.arange(1,50,10) #Increments by 10  
n7
```

```
[ ]: array([ 1, 11, 21, 31, 41])
```

```
[15]: #Initialising numpy array with random numbers  
n8=np.random.randint(1,100,10)  
n8
```

```
[15]: array([77, 74, 21,  4, 52, 28, 58, 64, 17, 53])
```

```
[17]: #Checking the shape of Numpy arrays  
n9=np.array([[1,2,3],[4,5,6],[7,8,9],[10,1,19]])  
n9.shape
```

```
[17]: (4, 3)
```

```
[ ]: #Joining Numpy array using Vertical stack(Both arrays will be placed one after  
      ↳the other)  
n10=np.array([1,2,3])  
n11=np.array([4,5,6])  
np.vstack((n10,n11))
```

```
[ ]: array([[1, 2, 3],  
           [4, 5, 6]])
```

```
[ ]: #Joining Numpy array using Horizontal stack(Both arrays will be placed side by  
      ↳side)  
n12=np.array([1,2,3])  
n13=np.array([4,5,6])  
np.hstack((n12,n13))
```

```
[ ]: array([1, 2, 3, 4, 5, 6])
```

```
[ ]: #Joining Numpy array using Column stack(Here each row will be converted into a  
      ↳column)  
n14=np.array([1,2,3])  
n15=np.array([4,5,6])  
np.column_stack((n14,n15))
```

```
[ ]: array([[1, 4],  
           [2, 5],  
           [3, 6]])
```

```
[ ]: #Intersection and Differences of Numpy arrays  
n16=np.array([1,2,3,4,5])  
n17=np.array([4,5,6,7])  
np.intersect1d(n16,n17)
```

```
[ ]: array([4, 5])
```

```
[6]: np.setdiff1d(n16,n17)
```

```
[6]: array([1, 2, 3])
```

```
[7]: np.setdiff1d(n17,n16)
```

```
[7]: array([6, 7])
```

```
[ ]: #Addition of Numpy arrays  
n18=np.array([2,3])  
n19=np.array([4,5])  
np.sum([n18,n19])
```

```
[ ]: 14
```

```
[10]: np.sum([n18,n19],axis=0)
```

```
[10]: array([6, 8])
```

```
[11]: np.sum([n18,n19],axis=1)
```

```
[11]: array([5, 9])
```

```
[ ]: n20=np.array([10,20,20])  
#Basic Addition  
n1=n1+1  
n1
```

```
[ ]: array([11, 21, 31, 41])
```

```
[ ]: #Basic Subtraction  
n1=n1-1  
n1
```

```
[ ]: array([10, 20, 30, 40])
```

```
[ ]: #Multiplication  
n1=n1*10  
n1
```

```
[ ]: array([100, 200, 300, 400])
```

```
[ ]: #Division  
n1=n1/2  
n1
```

```
[ ]: array([ 50., 100., 150., 200.])
```

```
[16]: #Finding Mean  
np.mean(n1)
```

```
[16]: 125.0
```

```
[17]: #Finding Standard Deviation  
np.std(n1)
```

```
[17]: 55.90169943749474
```

```
[18]: #Finding Median  
np.median(n1)
```

```
[18]: 125.0
```

```
[20]: n21=np.array([[1,2,3],[4,5,6],[7,8,9]])  
n21
```

```
[20]: array([[1, 2, 3],  
          [4, 5, 6],  
          [7, 8, 9]])
```

```
[ ]: #For printing Rows  
n21[0]
```

```
[ ]: array([1, 2, 3])
```

```
[22]: #For printing Columns  
n21[:,1]
```

```
[22]: array([2, 5, 8])
```

```
[23]: n21[:,2]
```

```
[23]: array([3, 6, 9])
```