



Slicing of Numpy arrays

```
In [5]: import numpy as np
a=np.array([0,1,2,3,4,5])
print(a[1:5])
```

[1 2 3 4]

```
In [8]: new=np.array([[1,2,3],
                     [4,5,6]])
print(new[1,1:3])
```

[5 6]

3D slicing

```
In [22]: arr=np.array([[[1,2,3,4],[5,6,7,8]],[[9,10,11,12],[13,14,15,16]]])
print(arr[0,1,0:4])
print(arr.dtype)
```

[5 6 7 8]

int64

data type cheqk

```
In [24]: n=np.array(["animals","cat","bat"])
print(n.dtype)
```

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creating array

```
In [27]: ar=np.array([1,2,3,4], dtype='S')
print(ar.dtype)
```

|S1

4bit int

```
In [40]: import numpy as np
al=np.array([1,2,3,4], dtype = "int64")
print(al)
print(al.dtype)
```

[1 2 3 4]

int64

Numpy array Shape

```
In [42]: m=np.array([[1,2,3,4,5],[6,7,8,9,0]])
print(m.shape)
```

(2, 5)

```
In [45]: mn=np.array([[1,2,3,4],[5,6,7,8],[9,10,11,12]])
print(mn.shape)

(1, 3, 4)
```

```
In [50]: a1=np.array([1,2,3,4,5])
a2=np.array([5,6,7,8,9])
a3=np.concatenate((a1,a2))
print(a3)

[1 2 3 4 5 5 6 7 8 9]

Join 2D array
```

```
In [59]: arr1=np.array([[1,2,3,4,5],[6,7,8,9,0]])
arr2=np.array([[6,7,8,9,1],[1,2,3,4,5]])
arr3=np.concatenate((arr1,arr2), axis=1)
print(arr3)
arr3=np.concatenate((arr1,arr2), axis=0)
print(arr3)

[[1 2 3 4 5 6 7 8 9 1]
 [6 7 8 9 0 1 2 3 4 5]]
[[1 2 3 4 5]
 [6 7 8 9 0]
 [6 7 8 9 1]
 [1 2 3 4 5]]

Splitting th array
```

```
In [62]: arr= np.array([1,2,3,4,5,6])
arr1=np.array_split(arr,2)
print(arr1)

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

Ravel and Flatten Convert mutliple dimesion array into 1D array

```
In [66]: arr=np.array([[1,2,3,4],[5,6,7,8],[6,7,8,9]])
nm=arr.ravel()
print(nm)
nmn=arr.flatten()
print(nmn)

[1 2 3 4 5 6 7 8 6 7 8 9]
[1 2 3 4 5 6 7 8 6 7 8 9]
```

```
In [72]: power=np.array([[[1,2,3],[4,5,6],[7,8,9]]])
print(power.ndim)
power_house=power.flatten()
print(power_house)

4
[1 2 3 4 5 6 7 8 9]
```

Unique Function

```
In [76]: k=np.array([1,3,543,35,34,4,4,5,523,4,3223,56,2,2,5,9,7,0])  
print(k)
```

```
print(np.unique(k, return_counts=True))
```

```
[ 1  3 543 35 34  4  4  5 523  4 3223 56  2  2  
 5  9  7  0]  
(array([ 0,  1,  2,  3,  4,  5,  7,  9, 34, 35, 56,  
        523, 543, 3223]), array([1, 1, 2, 1, 3, 2, 1, 1, 1, 1, 1, 1, 1, 1]))
```

Delete

```
In [77]: new=np.delete(k,[2])  
print(new)
```

```
[ 1  3 35 34  4  4  5 523  4 3223 56  2  2  5  
 9  7  0]
```

```
In [ ]:
```