numpy-learn

May 26, 2025

[1]:
```
import numpy as np
np.array([1,2,3],dtype=float)
```

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

[2]:
```
np.array(['sifat','faruk','joly'])
```

[2]:
```
array(['sifat', 'faruk', 'joly'], dtype='<U5')
```

[3]:
```
d3=np.array([[[1,2,3],[1,5,3]],[[1,2,3],[1,2,3]]])
```

[4]:
```
d3.reshape(2,6)
```

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

[5]:
```
np.ones((2,3,5),dtype=int)
```

[5]:
```
array([[[1, 1, 1, 1, 1],
        [1, 1, 1, 1, 1],
        [1, 1, 1, 1, 1]],

       [[1, 1, 1, 1, 1],
        [1, 1, 1, 1, 1],
        [1, 1, 1, 1, 1]]])
```

[6]:
```
np.round(np.random.random(4)*10)
```

[6]:
```
array([ 7.,  2.,  1., 10.])
```

[7]:
```
np.linspace(-10,10,10)
```

[7]:
```
array([-10.        ,  -7.77777778,  -5.55555556,  -3.33333333,
       -1.11111111,   1.11111111,   3.33333333,   5.55555556,
        7.77777778,  10.        ])
```

[8]:
```
np.identity(5).max(axis=0)
```

[8]:
```
array([1., 1., 1., 1., 1.])
```

[9]:
```
a1=np.arange(1,11)
a1
```

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

[10]:
```
a2=np.arange(1,41,2).reshape(4,5)
a2
```

[10]:
```
array([[ 1,  3,  5,  7,  9],
       [11, 13, 15, 17, 19],
       [21, 23, 25, 27, 29],
       [31, 33, 35, 37, 39]])
```

[11]:
```
a2[1][3]
```

[11]:
```
np.int64(17)
```

[12]:
```
a2[1,3]
```

[12]:
```
np.int64(17)
```

[13]:
```
a2[1:3,1:3]
```

[13]:
```
array([[13, 15],
       [23, 25]])
```

[14]:
```
a2[1::2,2::2]
```

[14]:
```
array([[15, 19],
       [35, 39]])
```

[31]:
```
nul=np.array([1,2,3,np.nan,4,])
nul
```

[31]:
```
array([ 1.,  2.,  3., nan,  4.])
```

[20]:
```
np.isnan(nul)
```

[20]:
```
array([False, False, False,  True, False])
```

[25]:
```
nul[~np.isnan(nul)]
```

[25]:
```
array([1., 2., 3., 4.])
```

[48]:
```
a1=np.random.randint(10,40,5)
a1
```

[48]:
```
array([19, 25, 19, 31, 27])
```

[49]:
```
np.sort(a1,kind='quicksort')
```

[49]:
```
array([19, 19, 25, 27, 31])
```

[50]:
```
np.where(a1>=22)
```

[50]:
```
(array([1, 3, 4]),)
```

[55]:
```
np.where(a1>19,0,a1)
```

[55]:
```
array([19,  0, 19,  0,  0])
```

[56]:
```
np.where(a1>=22,0,a1)
```

[56]:
```
array([19,  0, 19,  0,  0])
```

[57]:
```
np.argmax(a1)
```

[57]:
```
np.int64(3)
```

[58]:
```
a=np.random.randint(1,100,100)
a
```

[58]:
```
array([64, 93, 30, 27, 35, 57, 49, 56,  6, 85, 99, 87, 12,  1, 62, 34, 74,
       99, 43, 53, 43,  5, 94, 13, 96, 94, 26, 50, 50, 71, 37, 98, 99, 66,
        2, 85, 47, 52, 17, 58, 86, 64, 91, 42,  5, 25, 43, 64, 82, 13, 47,
       37, 37, 67, 73, 22, 38, 35, 42, 65,  7, 43, 52, 11, 82, 75, 73, 31,
       32, 90, 71, 13,  9, 73,  6, 88, 39, 44, 92, 77, 20, 24, 24, 16, 13,
       54, 29, 28,  3, 62, 59, 97, 16, 65, 67, 94, 62, 15, 97, 18])
```

[62]:
```
b=np.random.randint(0,100,100).reshape(10,10)
b
```

[62]:
```
array([[85, 82, 64, 52, 87, 90, 44, 72, 53, 44],
       [35, 18, 34, 47, 64, 62, 62, 85, 48, 55],
       [32, 34, 80,  3, 92, 16,  5, 42, 84, 65],
       [65, 46, 63,  5, 21, 45, 67, 41, 32, 20],
       [68, 96, 46, 95, 59, 78, 88, 25, 29, 56],
       [39, 87, 74, 16, 48, 67, 29, 17, 57, 35],
       [65, 46, 94, 20, 93, 41,  6, 79, 21, 91],
       [67, 78, 92, 82, 98,  8, 49, 57, 71, 36],
       [47, 54, 36, 27, 77, 86, 90, 89, 31, 87],
```

```
       [41, 91,  9, 86, 26, 49, 88, 98, 51, 80]])
```

[64]:
```
np.percentile(b,75,axis=0)
```

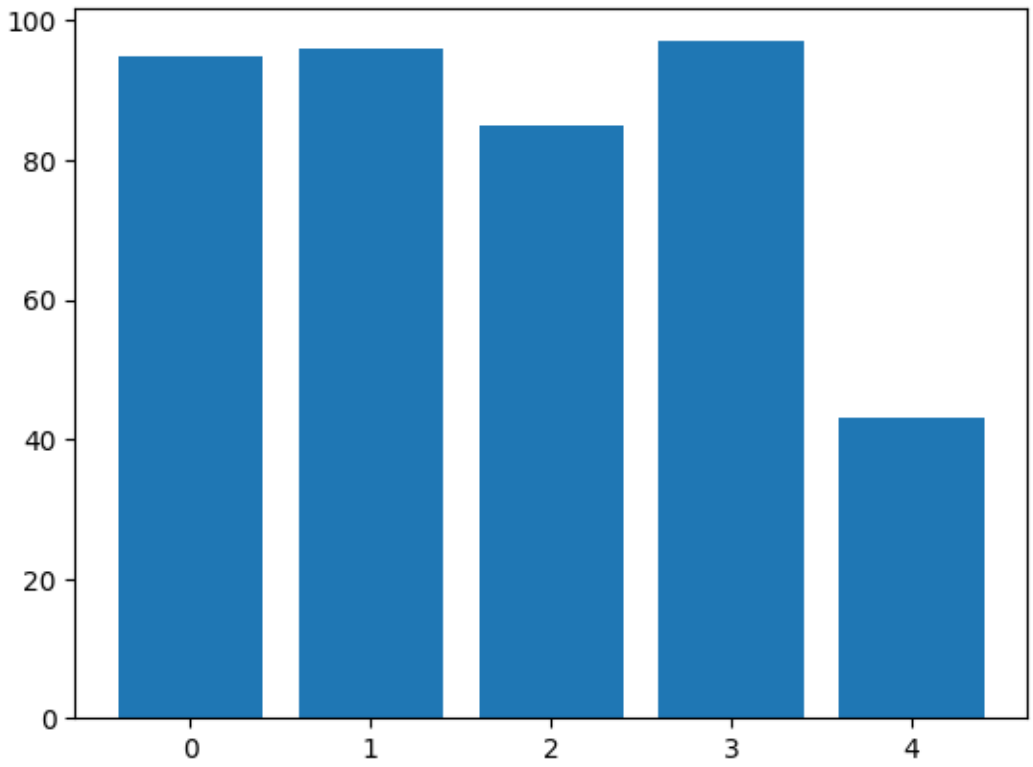
[64]:
```
array([66.5 , 85.75, 78.5 , 74.5 , 90.75, 75.25, 82.75, 83.5 , 56.  ,
       76.25])
```

[76]:
```
hist=np.histogram(a,bins=np.arange(99))
hist
```

[76]:
```
(array([0, 1, 1, 1, 0, 2, 2, 1, 0, 1, 0, 1, 1, 4, 0, 1, 2, 1, 1, 0, 1, 0,
        1, 0, 2, 1, 1, 1, 1, 1, 1, 1, 1, 0, 1, 2, 0, 3, 1, 1, 0, 0, 2, 4,
        1, 0, 0, 2, 0, 1, 2, 0, 2, 1, 1, 0, 1, 1, 1, 1, 0, 0, 3, 0, 3, 2,
        1, 2, 0, 0, 0, 2, 0, 3, 1, 1, 0, 1, 0, 0, 0, 0, 2, 0, 0, 2, 1, 1,
        1, 0, 1, 1, 1, 1, 3, 0, 1, 3]),
 array([ 0,  1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16,
        17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33,
        34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50,
        51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67,
        68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84,
        85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98]))
```

[79]:
```
import matplotlib.pyplot as plt
plt.bar(hist[0],hist[1][:-1])
```

[79]:
```
<BarContainer object of 98 artists>
```



[81]:
```
np.append(a1,[30,40])
```

[81]:
```
array([19, 25, 19, 31, 27, 30, 40])
```

[83]:
```
np.clip(a1,18,27)
```

[83]:
```
array([19, 25, 19, 27, 27])
```

[ ]:
```

```