

Numpy

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In [ ]: import numpy as np

In [2]: a = np.array([10,20,30])
        b = np.array([3,5,7])

        print(np.mod(a,b))
        print(np.remainder(a,b))

[1 0 2]
[1 0 2]

In [3]: a = np.array([2.0, 6.54, 143, 0.767, 65.542, 65.332])
        print(np.round(a))
        print(np.round(a, decimals=1))
        print(np.round(a, decimals=-1))

[ 2.   7. 143.   1.   66.  65.]
[ 2.   6.5 143.   0.8 65.5 65.3]
[ 0.  10. 140.   0.  70.  70.]

In [6]: a = np.array([-2.7, 3.9, -0.4, 0.9, 20])
        print(np.floor(a)) # nearest lower value
        print(np.ceil(a)) #nearest highest value

[-3.   3.  -1.   0. 20.]
[-2.   4.  -0.   1. 20.]

In [7]: a = np.array([[79,65,44,55], [65,66,78,66],[77,66,44,33]])
        print(a)
        print(np.amin(a))
        print(np.amin(a, axis=1)) #axis = 1 is row wise
        print(np.amin(a, axis=0)) #axis = 0 is column wise

[[79 65 44 55]
 [65 66 78 66]
 [77 66 44 33]]
33
[44 65 33]
[65 65 44 33]

In [23]: print(np.amax(a))
         print(np.amax(a, axis=1))
         print(np.amax(a, axis=0))

79
[79 78 77]
[79 66 78 66]

In [26]: a

Out[26]: array([[79, 65, 44, 55],
               [65, 66, 78, 66],
               [77, 66, 44, 33]])

In [29]: print(np.median(a))
         print(np.median(a,axis=1))
         print(np.median(a,axis=0))

65.5
[60. 66. 55.]
[77. 66. 44. 55.]

In [31]: print(np.mean(a))
         print(np.mean(a, axis=1))
         print(np.mean(a, axis=0))

61.5
[60.75 68.75 55.   ]
[73.66666667 65.66666667 55.33333333 51.33333333]

In [2]: a = np.array([1,2,3,4])
        wts = np.array([4,3,2,1])
        print(np.average(a))
        print(np.mean(a))
        print(np.average(a, weights=wts))

2.5
2.5
2.0

In [38]: np.std(a)

Out[38]: 1.118033988749895

In [39]: np.var(a)

Out[39]: 1.25

In [40]: a = np.array([[79,65,44,55], [65,66,78,66],[77,66,44,33]])

In [41]: a

Out[41]: array([[79, 65, 44, 55],
               [65, 66, 78, 66],
               [77, 66, 44, 33]])

In [44]: print(np.sort(a))
         print()
         print(np.sort(a,axis=1))
         print()
         print(np.sort(a, axis=0))

[[44 55 65 79]
 [65 66 66 78]
 [33 44 66 77]]

[[44 55 65 79]
 [65 66 66 78]
 [33 44 66 77]]

[[65 65 44 33]
 [77 66 44 55]
 [79 66 78 66]]

In [47]: x=np.arange(9).reshape(3,3)

In [52]: x

Out[52]: array([[0, 1, 2],
               [3, 4, 5],
               [6, 7, 8]])

In [59]: x[np.where(x<3)]

Out[59]: array([0, 1, 2])

In [54]: x

Out[54]: array([[0, 1, 2],
               [3, 4, 5],
               [6, 7, 8]])

In [55]: condition = np.mod(x,2)==0

In [56]: np.extract(condition, x)

Out[56]: array([0, 2, 4, 6, 8])

In [ ]:

In [ ]:
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