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In [1]: import numpy as np

In [3]: #list inside list
gp = np.array([[56,23,56,96], [57,21,59,69], [23,12,33,11]])
gp

Out[3]: array([[56, 23, 56, 96],
               [57, 21, 59, 69],
               [23, 12, 33, 11]])

In [6]: # 'T' it means Transpose which converts row to column
b = gp.T

In [7]: b

Out[7]: array([[56, 57, 23],
               [23, 21, 12],
               [56, 59, 33],
               [96, 69, 11]])

In [10]: for x in np.nditer(b):
          print(x)

56
23
56
96
57
21
59
69
23
12
33
11

In [14]: gp1 = np.array([[79,63,56,12], [96,35,66,77], [57,59,23,69],[99,66,22,11]])
gp2 = np.array([[56,23,11,19], [33,36,69,79], [55,30,57,19], [79,65,21,37]])

In [15]: gp1

Out[15]: array([[79, 63, 56, 12],
               [96, 35, 66, 77],
               [57, 59, 23, 69],
               [99, 66, 22, 11]])

In [16]: gp2

Out[16]: array([[56, 23, 11, 19],
               [33, 36, 69, 79],
               [55, 30, 57, 19],
               [79, 65, 21, 37]])

In [19]: #to make one single matrix
np.concatenate((gp1,gp2), axis=0)

Out[19]: array([[79, 63, 56, 12],
               [96, 35, 66, 77],
               [57, 59, 23, 69],
               [99, 66, 22, 11],
               [56, 23, 11, 19],
               [33, 36, 69, 79],
               [55, 30, 57, 19],
               [79, 65, 21, 37]])

In [20]: np.concatenate((gp1,gp2), axis=1)

Out[20]: array([[79, 63, 56, 12, 56, 23, 11, 19],
               [96, 35, 66, 77, 33, 36, 69, 79],
               [57, 59, 23, 69, 55, 30, 57, 19],
               [99, 66, 22, 11, 79, 65, 21, 37]])

In [24]: #it is doing concatinating matrix of matrix
#it is generating two matrix
np.stack((gp1,gp2), axis=1)

Out[24]: array([[79, 63, 56, 12],
               [56, 23, 11, 19]],

               [[96, 35, 66, 77],
               [33, 36, 69, 79]],

               [[57, 59, 23, 69],
               [55, 30, 57, 19]],

               [[99, 66, 22, 11],
               [79, 65, 21, 37]])

In [25]: np.hstack((gp1,gp2))

Out[25]: array([[79, 63, 56, 12, 56, 23, 11, 19],
               [96, 35, 66, 77, 33, 36, 69, 79],
               [57, 59, 23, 69, 55, 30, 57, 19],
               [99, 66, 22, 11, 79, 65, 21, 37]])

In [26]: np.vstack((gp1,gp2))

Out[26]: array([[79, 63, 56, 12],
               [96, 35, 66, 77],
               [57, 59, 23, 69],
               [99, 66, 22, 11],
               [56, 23, 11, 19],
               [33, 36, 69, 79],
               [55, 30, 57, 19],
               [79, 65, 21, 37]])

In [43]: gp_a = np.array([[79,36,56,96], [52,33,23,69]])
gp_a
np.append(gp_a, [63,99,66,77])

Out[43]: array([79, 36, 56, 96, 52, 33, 23, 69, 63, 99, 66, 77])

In [141]: gp_a = np.array([[79,36,56,96], [52,33,23,69]])
gp_a
np.append(gp_a, [[63,99,66,77]], axis=0) #axis = 1 it shows error because in first line we i

Out[141]: array([[79, 36, 56, 96],
               [52, 33, 23, 69],
               [63, 99, 66, 77]])

In [142]: gp_a = np.array([[79,36,56,96], [52,33,23,69]])
gp_a
gp_a = np.append(gp_a, [[63,99,66,77],[69,23,59,63]], axis=1)

In [143]: gp_a

Out[143]: array([[79, 36, 56, 96, 63, 99, 66, 77],
               [52, 33, 23, 69, 69, 23, 59, 63]])

In [144]: np.insert(gp_a,3,[30,20])

Out[144]: array([79, 36, 56, 30, 20, 96, 63, 99, 66, 77, 52, 33, 23, 69, 69, 23, 59,
               63])

In [163]: np.insert(gp_a, 1, [30,20,55,60,55,66,32,33], axis=0)

Out[163]: array([[79, 36, 56, 96, 63, 99, 66, 77],
               [30, 20, 55, 60, 55, 66, 32, 33],
               [52, 33, 23, 69, 69, 23, 59, 63]])

In [165]: np.insert(gp_a, 1, [30,66], axis=1)

Out[165]: array([[79, 30, 36, 56, 96, 63, 99, 66, 77],
               [52, 66, 33, 23, 69, 69, 23, 59, 63]])

In [136]: np.delete(gp_a, 3)

Out[136]: array([79, 36, 56, 63, 99, 66, 77, 52, 33, 23, 69, 69, 23, 59, 63])

In [118]: gp_a

Out[118]: array([[79, 36, 56, 96],
               [52, 33, 23, 69]])

In [69]: np.delete(gp_a, 1, axis=1)

Out[69]: array([[79, 56, 96],
               [52, 23, 69],
               [63, 66, 77]])

In [70]: np.delete(gp_a, 1, axis=0)

Out[70]: array([[79, 36, 56, 96],
               [63, 99, 66, 77]])

In [73]: gp_a

Out[73]: array([[79, 36, 56, 96],
               [52, 33, 23, 69],
               [63, 99, 66, 77]])

In [74]: np.delete(gp_a, np.s_[:3])

Out[74]: array([36, 56, 52, 33, 69, 63, 66, 77])

In [75]: a = np.array([36,36,99,65,99,63])
np.unique(a)

Out[75]: array([36, 63, 65, 99])

In [79]: np.unique(gp_a)

Out[79]: array([23, 33, 36, 52, 56, 63, 66, 69, 77, 79, 96, 99])

In [80]: np.unique(a,return_index=True)

Out[80]: (array([36, 63, 65, 99]), array([0, 5, 3, 2], dtype=int64))

In [82]: #Arithmetic operations
gp1 = np.array([[23,56,96,55], [56,26,29,32]])
gp2 = np.array([[56,21,97,91], [55,69,36,63]])

In [83]: gp1

Out[83]: array([[23, 56, 96, 55],
               [56, 26, 29, 32]])

In [84]: gp2

Out[84]: array([[56, 21, 97, 91],
               [55, 69, 36, 63]])

In [85]: gp1+gp2

Out[85]: array([[ 79,  77, 193, 146],
               [111,  95,  65,  95]])

In [86]: np.add(gp1,gp2)

Out[86]: array([[ 79,  77, 193, 146],
               [111,  95,  65,  95]])

In [ ]: np.subtract(gp1,gp2)

In [88]: np.multiply(gp1,gp2)

Out[88]: array([[1288, 1176, 9312, 5005],
               [3080, 1794, 1044, 2016]])

In [90]: np.round(np.divide(gp1,gp2))

Out[90]: array([[0.,  3.,  1.,  1.],
               [1.,  0.,  1.,  1.]])

In [91]: np.power(gp1,2)

Out[91]: array([[ 529, 3136, 9216, 3025],
               [3136,  676,  841, 1024]], dtype=int32)

In [ ]:

In [ ]:

In [ ]:
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