

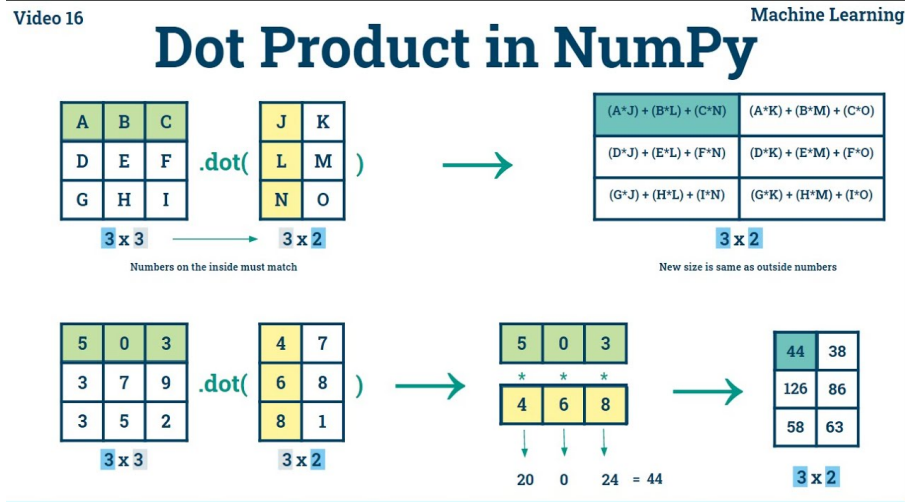
1) For a given numpy array, how will you change the dimensions to 5 using the existing parameters in the numpy array. `my_array = numpy.array([[[[1,3,4]]]])`

`numpy.array(my_array, ndim=5)`

`numpy.array(my_array, ndmin=5)`

`numpy.array(my_array, ndim= my_array.ndim + 1)`

`numpy.array(my_array, ndim=5)`



2) For the given numpy arrays, Array1 and Array2, what will be the dot product for the same.

`Array1 = array([[1, 2, 3], [4, 5, 6]])` `Array2 = array([[2, 3],[3, 2]])`

`array([[-9, 6, -1],[-12, 18, -7]])`

Valueerror

None of the Above

Keyerror

3) In a given numpy array, using the slicing operations print the reverse of the array. `array =`

`np.array([10,3,1,203,404,204,20,302,30,402,192])`

`array1[len(array1):0]`

`array[-1:0]`

`array1[-1:-len(array1)]`

`array[::-1]`

4) What is the output of the below code: `a = [[1, 0], [0, 1]]` `b = [[4, 1], [2, 2]]` `np.dot(a, b)`

`array([[4, 4],[2, 4]])`

None of the above

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

`array([[4, 1],[2, 2]])`

5) What is the output of the following code: `a = np.arange(3*4*5*6).reshape((3,4,5,6))` `b =`

`np.arange(3*4*5*6)[::-1].reshape((5,4,6,3))` `np.dot(a, b)[2,3,2,1,2,2]`

399118

499128

Value Error
909128

6) What will be output for the following code? `import numpy as np a = np.array([3, 7, 32], dtype = complex) print(a)`

[3.+0.j 7.+0.j 32.+0.j]

Error

[3.0+0.j 7.0+0.j 32.0+0.j]

[3.+0.k 7.+0.j 32.+0.l]

7) How to replace all values greater than a given value with a given cutoff? For example: In array 'ar1', replace all values greater than 30 to 30 and less than 10 to 10. Input:

`np.random.seed(100) ar1 = np.random.uniform(1,50, 20)`

`np.where(a < 10, 10, np.where(a > 30, 30, a))`

Both of the above

`np.clip(a, a_min=10, a_max=30)`

None of the above

8) For the given arrays, array1 and array2, if we stack the two arrays row wise, what will be the output? `array1 = np.array([[1,2],[3,4]]) array2 = np.array([[1,2],[3,4],[5,6],[7,8],[9,10]])`

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

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

None of the above

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

9) For a given numpy array, how are you going to insert a new value at the specified position?

`array = np.array([10,3,1,203,404,204,20,302,30,402,192]) Elem_to_be_inserted = [1,2,3,4]`

The position to be inserted at = before 404

`numpy.insert(array1, 4, array2)`

`numpy.insert(array2, np.index(404), array2)`

`numpy.insert(array1, np.where(404), array2)`

`numpy.insert(array2, 404, array2)`

10) Create a 3x3 matrix using numpy, and all the values of the matrix must be a constant k.

`numpy.random.random((3,3), 'k')`

`numpy.ones(3,3)`

`numpy.eye('k')`

`numpy.full((3,3), 'k')`

11) For the given python code that implements bubble sort, what will be the output for the given numpy array. `def bub_sort(array): for i in range(0, len(array)): for j in range(0, len(array) - i - 1): if`

```

array[j] < array[j + 1]: temp = array[j] array[j] = array[j + 1] array[j+1] = temp return array
my_array = numpy.array([20,14,25,16,45,60,12,9])
array([60, 45, 25, 20, 16, 14, 12, 9])
array([60, 45, 20, 25, 16, 14, 12, 9])
array([ 9, 12, 14, 16, 20, 25, 45, 60])
array([ 9, 12, 16, 14, 20, 25, 45, 60])

```

12) For a given numpy array of the shape (2,5) ,How will you reshape the array in the shape (5,2).

```

numpy.reshape((2,5) == (5,2))
numpy.arange(5,2)
numpy.shape(5,2)
numpy.reshape(5,2)

```

13) What will be the shape of the sample numpy array after flattening it? Sample =

```

numpy.array([[1,2],[3,4],[5,6],[7,8]])
array([1], [2], [3], [4], [5], [6], [7], [8])
array([1, 2, 3, 4, 5, 6, 7, 8])
None of the above
array([1, 2], [3, 4], [5, 6], [7, 8])

```

14) In the given array, how can we get the following output - array([2, 5, 8]). Sample =

```

numpy.array([[1,2,3],[4,5,6],[7,8,9],[10,11,12],[13,14,15]])
array[0:3, 1]
None of the above
array[0:3][1]
array[[0:3], [1]]

```

15) Given two numpy arrays, we will perform Horizontally stack the given arrays array1 and array2. What will be the output of the above operation? The sample arrays are as follows.

```

Array1 = numpy.arange(20,2) Array2 = numpy.array([1,2,3,4,5,6,7,8,9,10])

```

```

None of the above
array([[ 1, 3, 5, 7, 9, 11, 13, 15, 17, 19], [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]])
array([ 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10])
array([[ 1, 3, 5, 7, 9, 11, 13, 15, 17, 19], [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]])

```

16) For the given arrays, array1 and array2, if we stack the two arrays column wise, what will be the output? array1 = np.array([[1,2],[3,4]]) array2 = np.array([[5,6],[7,8]])

```

array([[1, 2, 5, 6], [3, 4, 7, 8]])
array([[1, 2, 5, 6],[3, 4, 7, 8]])

```

array([[1, 2], [5, 6],[3, 4], [7, 8]])
 None of the above

$A = [a_1, a_2, a_3]$

$B = [b_1, b_2, b_3]$

- . Calculate the individual components of the cross product vector:
 - i. x-component: $(a_2 * b_3) - (a_3 * b_2)$
 - ii. y-component: $(a_3 * b_1) - (a_1 * b_3)$
 - iii. z-component: $(a_1 * b_2) - (a_2 * b_1)$
- . Combine the calculated components to form the cross product vector: [x-component, y-component, z-component]

17) Given two vectors A and B, find the cross product between the two vectors. A = numpy.array([[4],[12],[29]]) B = numpy.array([[13],[21],[4]])

array([[-561 360 -72]])

array([[-555 361 -72]])

array([[-560 360 -71]])

array([[-561 361 -72]])

18) Given two vectors A and B, find the correlation coefficient of the following vectors. A = numpy.array([1,3,5,7,9,11,13,15,17,19,21,23,25]) B = numpy.array([0,2,4,6,8,10,12,14,16,18,20,22, 24])

array([[1., 1.],[1., 1.]])

array([[1., 0.],[1., 1.]])

array([[1., 1.],[0., 1.]])

array([[0., 1.],[1., 1.]])

$$r = \frac{\sum_{i=1}^n ((x_i - \bar{x})(y_i - \bar{y}))}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2 \sum_{i=1}^n (y_i - \bar{y})^2}}$$

19) Create a nested numpy array from a given dictionary data. sample = {1: [1,2], 2: [[1],[2]], 3: [[1,2], [3,4], [4,5]], 4: [1], 5: [1,2,3,4,5]}

```
array([[1, list([1, 1]), [2, list([[1], [2]])], [3, list([[1, 2], [3, 4], [4, 5]])], [4, list([1])], [5, list([1, 2, 3, 4, 5])]], dtype=object)
array([[1, list([1, 2]), [2, list([[1], [2]])], [3, list([[1, 2], [1, 4], [4, 5]])], [4, list([1])], [5, list([1, 2, 3, 4, 5])]], dtype=object)
array([[1, list([1, 2]), [2, list([[1], [2]])], [3, list([[1, 2], [3, 4], [4, 5]])], [4, list([1])], [5, list([1, 2, 3, 4, 5])]], dtype=object)
array([[1, list([1, 2]), [2, list([[1], [2]])], [3, list([[1, 2], [3, 4], [4, 5]])], [4, list([1])], [5, list([1, 2, 3, 10, 5])]], dtype=object)
```

20) A 2-dimensional array with 3 rows and 3 columns containing random numbers from 1 to 9 is given as - arr1= np.array([[3,2,1],[6,4,5],[8,7,9]]) Find the difference between the maximum element across the columns and the minimum element across the rows.

```
[7 3 1]
[8 3 2]
[7 3 2]
[7 1 2]
```

21) The command to find the number of elements in the following array "N" is N=np.array([99 , None , 49 , Nan, str , np.nan ,63 , 50 ,() ,[] ,{ } ,]).

```
N.size()
np.size(N)
LEN(N)
N.count()
```

22) The output of the code given below is: List =[3,9,12,15] a=(x**3 for x in list) print(next(a))

```
12
9
27
81
```

A)The next(a) function call retrieves the first value from the generator expression, which is 3**3 (27). So, the output of print(next(a)) is indeed 27

23) Create a sequence number from 13 to 22 and increment by 4 .What is the index element 17?

```
1
0
2
3
```

24) Consider a variable job="analyst".Which of the following expression(s) will retrieve the last from the string?

JOB[LEN(JOB)-1]

job[7]

JOB[-1]

job[5:6]

25) Given a NumPy array , arr=np.array([[6,9,12] , [8,3,7] , [9,8,0]]) Find the correct command from the following options to get an output array as [27 18 17]?

np.sum(arr,axis=0)

None of the options are correct

np.sum(arr,axis=1)

np.sum(arr)