PYTHON IN 10 VIDEOS

Assignment - 6

1. Guess the output ?

```
import numpy as np

a = np.array([1, 2, 3, 4, 5])
b = np.array([[1, 2], [3, 4]])
c = np.array([[[1, 2], [3, 4]], [[5, 6], [7, 8]]])

print(a.ndim, b.ndim, c.ndim)
```

a. 1 2 3
b. 2 3 4
c. 1 3 2
d. 3 2 1

2. How do u create a 0-D array with value 5?

a. np.array(5)
b. np.array([5])
c. np.array([[5]])
d. np.array([[[5]]])

3. Benefits of Arrays over lists?

a. Arrays take less memory
b. Arrays can be resized after creation
c. Arrays can have elements of diff data types
d. Arrays are slower for performing mathematical operations

4. Purpose of numpy.append()?

a. Remove elements from numpy array
b. Replace elements in an numpy array
c. Add elements at the end of the array
d. Sort elements in an existing array

5. Guess the output?

```
import numpy as np
arr = np.array([[1, 2, 3], [4, 5, 6], [7, 8, 9]])
print(arr[::2, ::-1])
```

a. [[7 8 9], [1 2 3]]
b. [[3 2 1], [9 8 7]]
c. [[3 2], [9 8]]
d. [[147],[3 6 9]]

6. Slice 2d array to get first 2 rows and 3 columns:

a. Arr[0:2, 0:3]
b. Arr[0:3, 0:2]
c. Arr[:2, :3]
d. Both A and C

7. Guess output:

```
import numpy as np
arr = np.array([[1, 2, 3], [4, 5, 6], [7, 8, 9]])
x = arr[-2, -1]
```

a. 1
b. 6
c. 2
d. 5

8. How to access 2nd element in 1st row of an 2D array?

a. Arr[1,0]
b. Arr[0,1]
c. Arr[0][1]
d. arr[1][0]

9. What does array.reshape() do?

a. Changes size of an array
b. Changes shape of array without changing data
c. Changes both size and shape of the array along with data
d. Results in a new array with same data but different shaoe

10. What happens when u reshape an array to a shape that does not have same elements as original array?

a. Error occurs
b. Reshape successful but some elements are lost or duplicated
c. Reshape successful array is padded with zeros to match new shape
d. Reshape successful but shape gets adjusted to nearest possible value

11. Which is true?

a. Hstack can stack arrays of different shape
b. Vstack can stack arrays of different size
c. Hstack stacks vertically while vstack stacks horizontally
d. Neither hstack nor vstack can be used to stack arrays of different shape

12. What does Numpy.concatenate() do?

a. Can join arrays along any axis
b. Returns new numpy array
c. Can only concatenate along the first axis
d. Create new array with specified dimensions

13. Create a NumPy array of shape (5, 5) filled with random integers between 1 and 20. Replace all the elements in the third column with 1.

14. Create a structured array with fields 'name' (string), 'age' (integer), and 'weight' (float). Add some data and sort the array by age.

15. Create a NumPy array of shape (4, 4) with values from 1 to 16. Compute the row-wise and column-wise sum.