Numpy exercise with solutions

1) Stack 2 numpy arrays horizontally i.e., 2 arrays having the same 1st dimension (number of rows in 2D arrays)

Sample Solution

a1 = np.array([[**1**,**2**,**3**],

[**4**,**5**,**6**]])

a2 = np.array([[**7**,**8**,**9**],

[**10**,**11**,**12**]])

o = np.hstack((a1, a2))

**print**(o)

2) arr = np.array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9])

Desired output: #> array([1, 3, 5, 7, 9])

arr[arr % 2 == 1]

## 3) 7. How to reshape an array?

#> array([ 0, 1, 2, 3, 4, 5, 6, 7, 8, 9])

Desired Output:

array([[0, 1, 2, 3, 4],

#> [5, 6, 7, 8, 9]])

## 4) 11. How to get the common items between two python numpy arrays?

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

b = np.array([7,2,10,2,7,4,9,4,9,8])

Desired Output:

array([2, 4])

solution = np.intersect1d(a,b)

5) Convert array\_of\_arrays into a flat linear 1d array.

# Input:

arr1 = np.arange(3)

arr2 = np.arange(3,7)

arr3 = np.arange(7,10)

array\_of\_arrays = np.array([arr1, arr2, arr3])

array\_of\_arrays

#> array([array([0, 1, 2]), array([3, 4, 5, 6]), array([7, 8, 9])], dtype=object)

Desired Output:

#> array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9])

arr\_2d = np.concatenate(array\_of\_arrays)

print(arr\_2d)

6) Compute the maximum for each row in the given array.

a = np.random.randint(1,10, [5,3])

array([[2, 2, 7],

[2, 8, 5],

[4, 7, 2],

[3, 5, 7],

[9, 4, 9]])

Desired output = array([7, 8, 7, 7, 9])

Solution = np.amax(a, axis=1)

7) 14. Create a random vector of size 30 and find the mean value.

Z = np.random.random(30)

m = Z.mean()

print(m)

8) Create a random vector of size 10 and sort it.

Z = np.random.random(10)

Z.sort()

print(Z)

9)  Write a NumPy program to print the NumPy version in your system

10) Write a NumPy program to append values to the end of an array. [Go to the editor](https://www.w3resource.com/python-exercises/numpy/index-array.php#EDITOR)  
Expected Output:  
Original array:  
[10, 20, 30]  
After append values to the end of the array:  
[10 20 30 40 50 60 70 80 90]