ESERCIZI 3 (NumPy)

More **EXERCISES ON NumPy objects:**
https://www.w3resource.com/python-exercises/numpy/index.php

1. Write a NumPy program to create a 3x3 matrix with values ranging from 2 to 10. Go to the editor
   Expected Output:
   [[2 3 4]
   [5 6 7]
   [8 9 10]]
2. Write a NumPy program to create a 2d array with 1 on the border and 0 inside.
3. Write a NumPy program to find common values between two arrays.
4. Write a NumPy program to get the values and indices of the elements that are bigger than 10 in a given array. Go to the editor
   Original array:
   [[0 10 20]
   [20 30 40]]
5. Write a NumPy program to create a new shape to an array without changing its data. Go to the editor
   Reshape 3x2:
   [[1 2]
   [3 4]
   [5 6]]
   Reshape 2x3:
   [[1 2 3]
   [4 5 6]]
6. Write a NumPy program to create a 2-D array whose diagonal equals [4, 5, 6, 8] and 0's elsewhere
7. Write a NumPy program to convert (in sequence depth wise (along third axis)) two 1-D arrays into a 2-D array. Go to the editor
   Sample array: (10,20,30), (40,50,60)
   Expected Output:
   [[[10 40]]
   [[20 50]]
   [[30 60]]]
8. Write a NumPy program to create a 5x5x5 cube of 1's.
9. Write a NumPy program to extract all the elements of the second and third columns from a given (4x4) array
10. Write a NumPy program to add, subtract, multiply, divide arguments element-wise
11. Write a NumPy program to multiply a 5x3 matrix by a 3x2 matrix and create a real matrix product.
12. Write a NumPy program to compute the trigonometric sine, cosine and tangent array of angles given in degrees

13. Write a Numpy program to create a random matrix A of size m*n assigned in input:
    - extract the first colum and the first row of A
    - extract the last column and the last row of A
    - extract a submatrix constiuted by the column of even index from A
    - extract a submatrix 2*2 containing the elements of the first and second raws and columns.

14. Write a NumPy program to get the values and indices of the elements that are bigger than 10 in a given array. Go to the editor
15. Write a NumPy program to convert (in sequence depth wise (along third axis)) two 1-D arrays into a 2-D array. Go to the editor
    Sample array: (10,20,30), (40,50,60)
    Expected Output:
    [[[10 40]]
    [[20 50]]
    [[30 60]]]
16. Write a NumPy program to remove specific elements in a NumPy array. Go to the editor

    Expected Output:
    Original array:
    [10 20 30 40 50 60 70 80 90 100]
    Delete first, fourth and fifth elements:
    [20 30 60 70 80 90 100]
17. Write a NumPy program to replace the negative values in a NumPy array with 0. Go to the editor

    Expected Output:
    Original array:
    [-1 -4 0 2 3 4 5 -6]
    Replace the negative values of the said array with 0:
    [0 0 0 2 3 4 5 0]
    Click me to see the sample solution
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