NUMPY ARRAY MANIPULATION

EXPERIMENT NO : 3 A

DATE: 10/2/24

AIM: Python program to demonstrate reshaping of the array .

SOFTWARE REQUIRED: Google colab.

DESCRIPTION : Data manipulation in Python is nearly synonymous with NumPy array manipulation: even newer tools like Pandas (Chapter 3) are built around the NumPy array. This section will present several examples of using NumPy array manipulation to access data and subarrays, and to split, reshape, and join the arrays.

PROGRAM:

```
import numpy as np
a=np.array([1,2,3,4,5,6])
print("reshaping the array into an array of size (3,2)\n",a.reshape(3,2))
print("reshaping the array into an array of size (2,3)\n",a.reshape(2,3))
print("reshaping the array into an array of size (6,1)\n",a.reshape(6,1))
a1=np.arange(0,9)
print("reshaping the array into an array of size (3,2)", a1.reshape(3, 1, 3))
a2=np.array([[0,1], [2,3]])
print(np.resize(a2,(2,3)))
print(np.resize(a2,(1,4)))
print(np.resize(a2,(2,4)))
```

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OUTPUT:

```
reshaping the array into an array of size(3,2)
 [[1 2]
 [3 4]
 [5 6]]
reshaping the array into an array of size(2,3)
 [[1 2 3]
 [4 5 6]]
reshaping the array into an array of size(6,1)
 [[1]
 [2]
 [3]
 [4]
 [5]
 [6]]
reshaping the array into an array of size(3,2) [[[0 1 2]]

 [[3 4 5]]

 [[6 7 8]]]
[[0 1 2]
 [3 0 1]]
[[0 1 2 3]]
[[0 1 2 3]
 [0 1 2 3]]
```

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RESULT : Demonstrated reshaping of the arrays in numpy

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