

22-10-2024

Training Day – 24

Topic:- NumPy Manipulation

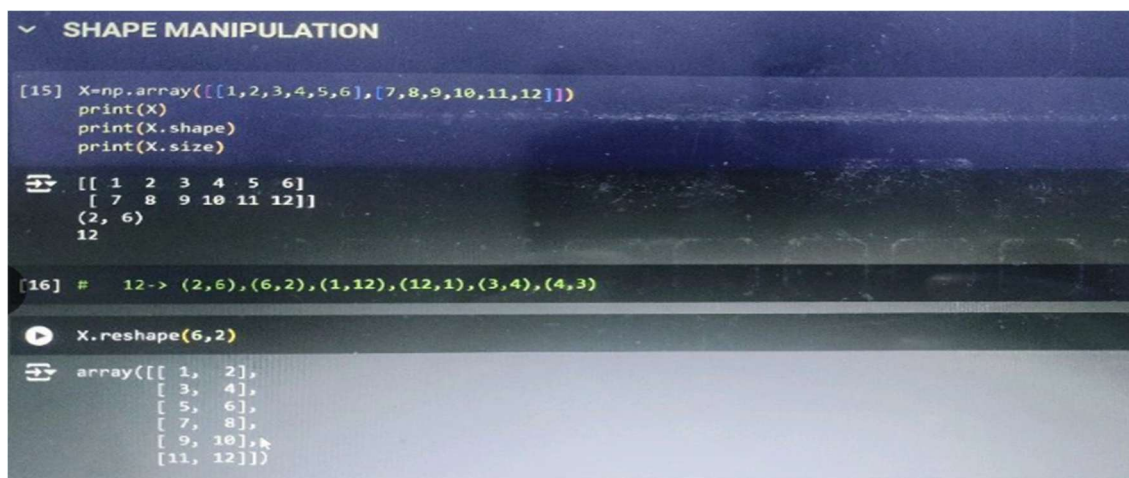
- Performed reshaping, slicing, and broadcasting operations.
- Example: Reshaped a 1D array into a 2D array and performed element-wise multiplication.

Day-2

- Today I practiced some example based on slicing in multi-dimensional array.
- Some new topics also covered in today's session as like -
 - * Shape Manipulation.
 - * Conditions In Array.
- And also getting a short knowledge of "Broadcasting" using numpy's library. NumPy arrays can be reshaped, sliced, and indexed to suit various needs.

EXAMPLE

```
array = np.arange(10)
reshaped = array.reshape(2, 5)
sliced = reshaped[:, 1:4]
broadcasted = reshaped + 10
print("Original Array:\n", array)
print("Reshaped Array:\n", reshaped)
print("Sliced Array:\n", sliced)
print("Broadcasted Array:\n", broadcasted)
```



```
SHAPE MANIPULATION

[15] X=np.array([[1,2,3,4,5,6],[7,8,9,10,11,12]])
      print(X)
      print(X.shape)
      print(X.size)

[[ 1  2  3  4  5  6]
 [ 7  8  9 10 11 12]]
(2, 6)
12

[16] # 12-> (2,6),(6,2),(1,12),(12,1),(3,4),(4,3)

X.reshape(6,2)

array([[ 1,  2],
       [ 3,  4],
       [ 5,  6],
       [ 7,  8],
       [ 9, 10],
       [11, 12]])
```