6th Feb Assignment

February 7, 2025

[26]:
```
"""1. Write a 3D array and do the slicing"""
import numpy as np
#creating a 3D array
arr1 = np.array([1,2,3,9,66,88,23,20,33,6,100,75,56,20,36,15,0,1]).
 ↪reshape(3,3,2)
print(arr1)
print(f'The dimension of this array is: {arr1.ndim}')
#ndim prints the dimension
#lets slice the last block and the 1st row all columns.
print(arr1[2,0,])
#another example
print(arr1[1,2,])
```

```
[[[  1   2]
  [  3   9]
  [ 66  88]]

 [[ 23  20]
  [ 33   6]
  [100  75]]

 [[ 56  20]
  [ 36  15]
  [  0   1]]]
The dimension of this array is: 3
[56 20]
[100  75]
```

[35]:
```
"""2. Create 2D array and do the slicing from the end(use negative indexing)"""
arr2 = np.array([1,2,3,9,66,88,23,20,33,6,100,75,56,20,36,15,0,1]).reshape(3,6)
print(arr2)
print(f'The Dimension is array is: {arr2.ndim}')
#slicing ex1 to print [0,1]
print(arr2[-1,-2:])
#ex2 : print [(2 3 9),(20 33 6), (20 36 15)]
print(arr2[:,-5:-2])
```

```
[[  1   2   3   9  66  88]
 [ 23  20  33   6 100  75]]
```

```
 [ 56  20  36  15   0   1]]
The Dimension is array is: 2
[0 1]
[[ 2  3  9]
 [20 33  6]
 [20 36 15]]
```

[ ]:
```python
"""3. Create 2D array and make a copy"""
arr3 = np.array([1,2,3,9,66,88,23,20,33,6,100,75,56,20,36,15,0,1]).reshape(2,9)
#print(f'The Dimension is array is: {arr3.ndim}')
#creating copy of array 3
copy_arr3 = arr3.copy()
#replacing few of its values like multiplying the last sliced by last 4
print(copy_arr3[:,-4:])
#multiplying by 2 the sliced section and replacing the copied array.
copy_arr3[:,-4:] = copy_arr3[:,-4:] * 2
print(f'The main array is: \n {arr3}')
print()
print(f'The Modified copy of main array is: \n {copy_arr3}')
```

```
[[88 23 20 33]
 [36 15  0  1]]
The main array is:
 [[  1   2   3   9  66  88  23  20  33]
 [  6 100  75  56  20  36  15   0   1]]

The Modified copy of main array is:
 [[  1   2   3   9  66 176  46  40  66]
 [  6 100  75  56  20  72  30   0   2]]
```