lab8\_Numpy Slicing\_ANP-C7281 and ANP-C7374

**1. Write a NumPy program to create an array of 10 zeros, 10 ones, and 10 fives.**

**Sample Output:**

**an array of 10 zeros:**

**[0. 0. 0. 0. 0. 0. 0. 0. 0. 0. ]**

**an array of 10 ones:**

**[1. 1. 1. 1. 1. 1. 1. 1. 1. 1. ]**

**an arrys of 10 fives:**

**[5. 5. 5. 5. 5. 5. 5. 5. 5. 5. ]**

**PROGRAM :**

import numpy as np

zeros\_array = np.zeros(10)

ones\_array = np.ones(10)

fives\_array = np.ones(10) \* 5

print("an array of 10 zeros:")

print(zeros\_array)

print("an array of 10 ones:")

print(ones\_array)

print("an array of 10 fives:")

print(fives\_array)

**OUTPUT :**

an array of 10 zeros:

[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]

an array of 10 ones:

[1. 1. 1. 1. 1. 1. 1. 1. 1. 1.]

an array of 10 fives:

[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]

**2. Write a NumPy program to create a 3x3 matrix with values ranging from 2 to 10.**

**Sample Output:**

**[[2 3 4]**

**[5 6 7]**

**[8 9 10]]**

**PROGRAM :**

import numpy as np

matrix = np.arange(2, 11).reshape(3, 3)

print("Matrix:")

print(matrix)

**OUTPUT :**

Matrix:

[[ 2 3 4]

[ 5 6 7]

[ 8 9 10]]

3. Write a NumPy program to create an array with values ranging from 12 to 38.

Sample Output:

[12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38]

**PROGRAM :**

import numpy as np

array\_range = np.arange(12, 39)

print("Array with values ranging from 12 to 38:")

print(array\_range)

**OUTPUT :**

Array with values ranging from 12 to 38:

[12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

36 37 38]

4. Write a NumPy program to convert a list and tuple into arrays.

 Input: my\_list = [1, 2, 3, 4, 5, 6, 7, 8]

Input: my\_tuple = ([8, 4, 6], [1, 2, 3])

Sample Output:

List to array:

[1 2 3 4 5 6 7 8]

Tuple to array:

[[8 4 6]

[1 2 3]]

**PROGRAM :**

import numpy as np

my\_list = [1, 2, 3, 4, 5, 6, 7, 8]

my\_tuple = ([8, 4, 6], [1, 2, 3])

list\_array = np.array(my\_list)

tuple\_array = np.array(my\_tuple)

print("List to array:")

print(list\_array)

print("Tuple to array:")

print(tuple\_array)

**OUTPUT :**

List to array:

[1 2 3 4 5 6 7 8]

Tuple to array:

[[8 4 6]

[1 2 3]]