Question-1¶

Create a numpy array starting from 2 till 50 with a stepsize of 3.

Import numpy as np

Arr1 = np.arange(2, 51, 3)

Print(arr1)

[ 2 5 8 11 14 17 20 23 26 29 32 35 38 41 44 47 50]

Question-2

Accept two lists of 5 elements each from the user. Convert them to numpy arrays. Concatenate these arrays and print it. Also sort these arrays and print it.

Lst1, lst2 = [], []

N = 1

While n<=2:

For I in range(5):

Lst\_input = int(input())

If n == 1:

Lst1.append(lst\_input)

Else:

Lst2.append(lst\_input)

N+=1

Arr1 = np.array(lst1)

Arr2 = np.array(lst2)

Array\_concat = np.concatenate((arr1, arr2))

Print(‘Concatinated Array:’,array\_concat)

Print(‘Sorted Array:’, np.sort(array\_concat))

43

12

54

87

23

98

23

48

92

45

Concatinated Array: [43 12 54 87 23 98 23 48 92 45]

Sorted Array: [12 23 23 43 45 48 54 87 92 98]

Question-3

Write a code snippet to find the dimensions of a ndarray and its size.

Sample\_array = np.array([

[1,2,3],

[4,5,6],

[7,8,9]

])

Print(‘Dimensions:’,Sample\_array.ndim)

Print(‘Size:’, Sample\_array.size)

Dimensions: 2

Size: 9

Question-4

How to convert a 1D array into a 2D array? Demonstrate with the help of a code snippet

In [55]:

Arr = np.array([1,2,3,4,5,6,7,8,9])

Arr = np.reshape(arr, (3,3))

Print(arr)

[[1 2 3]

[4 5 6]

[7 8 9]]

In [53]:

Arr = np.array([1,2,3,4,5,6,7,8,9])

Arr = np.expand\_dims(arr, axis = 1)

Print(arr)

[[1]

[2]

[3]

[4]

[5]

[6]

[7]

[8]

[9]]

Question-5

Consider two square numpy arrays. Stack them vertically and horizontally.

Sq\_arr1 = np.square([2,3,4])

Sq\_arr2 = np.square([5,6,7])

Print(‘Vertical Stack:’)

Print(np.vstack((sq\_arr1,sq\_arr2)))

Print(‘Horizontal stack:’)

Print(np.hstack((sq\_arr1,sq\_arr2)))

Vertical Stack:

[[ 4 9 16]

[25 36 49]]

Horizontal stack:

[ 4 9 16 25 36 49]

Question-6

How to get unique items and counts of unique items?

Arr = np.array([4, 7, 8, 9, 5, 6, 5, 4, 4])

Arr1, arr2 = np.unique(arr, return\_counts=True)

D ={}

For I in range(len(arr1)):

D[arr1[i]]=arr2[i]

Count = 0

Print(‘Unique Values are: ‘)

For I in d:

If d[i]==1:

Print(i)

Count += 1

Print(‘Count of unique values:’, count)

Unique Values are:

6

7

8

9

Count of unique values: 4