NumPy Assignment

November 20, 2023

1 Assignment 4 - 20 11 23 (NumPy)

[1]:
```
import numpy as np
```

1. Which of the following option(s) can add 1 to each element of array A?

A = np.array([2, 0, 1, 9, 1, 1, 1, 0, 3, 5])

a) A+1

b) list(map(lambda x:x+1, A))

c) [x+1 for x in A]

d) A+"1"

- Options a,b,c are correct but option d will throw an error

2. Given an array, return the shape and dimension of the array.

[2]:
```
A = np.array([2, 0, 1, 9, 1, 1, 1, 0, 3, 5])
print(A.ndim)
print(A.shape)
```

```
1
(10,)
```

3 a)Write the code using np.arange() to get all even numbers between 21 and 70, (70 inclusive)

[3]:
```
np.arange(22,71,2)
```

[3]:
```
array([22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54,
       56, 58, 60, 62, 64, 66, 68, 70])
```

3 b) Write the code using np.arange() to get all odd numbers between 20 and 71. (71 inclusive)

[4]:
```
np.arange(21,72,2)
```

[4]:
```
array([21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53,
       55, 57, 59, 61, 63, 65, 67, 69, 71])
```

The correct option for 3 question is a,d

4. Given the start, end, and the stepsize return a numpy array sequence in given range with the specified stepsize.

[5]:
```
start = int(input("Enter number to start from:"))
end = int(input("Enter number to end:"))
step = int(input("Enter step size:"))
np.array(range(start,end,step))
```

```
Enter number to start from: 4
Enter number to end: 50
Enter step size: 4
```

[5]:
```
array([ 4,  8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48])
```

5. Which option is correct about the output of the following code snippet?

[6]:
```
x = np.array([-5, 9 , 20 , 25, -3, 5, 16, 10,-8])
x[(x >= -5) & (x <= 15)] *= -1
print(x)
```

```
[  5  -9  20  25   3  -5  16 -10  -8]
```

Correct option is b) Given code will change the sign of all the numbers in range [-5, 15] in x.