20/07/23

DAY 2 PRACTICE QUESTIONS

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

1. Create an array with zeros and ones and print the output

In [5]:
```
a=np.zeros(3,dtype=np.int8)
b=np.ones(3,dtype=np.int8)
print(a)
print(b)
```

```
[0 0 0]
[1 1 1]
```

2. Create an array and print the output

In [26]:
```
c=np.array([[1,2,3],[4,5,6]])
print(c)
```

```
[[1 2 3]
 [4 5 6]]
```

3. Create an array whose initial content is random and print the output

In [18]:
```
a=np.random.rand(2,5)
print(a)
```

```
[[0.34553251 0.51643412 0.44997274 0.35783907 0.22374055]
 [0.0158592  0.83455286 0.81083578 0.52621322 0.06983516]]
```

4. Create an array with the range of values with even intervals

In [19]:
```
a=np.arange(1,10,2)
print(a)
```

```
[1 3 5 7 9]
```

5. create an array with values that are spaced linearly in a specified interval

In [20]:
```
a=np.arange(12,100,8)
print(a)
```

```
[12 20 28 36 44 52 60 68 76 84 92]
```

6. Access and manipulate elements in the array

In [21]:
```
a[2]
```

Out[21]:
```
28
```

In [22]:
```
a[2]=21
a[2]
```

Out[22]:
```
21
```

7. Create a 2-dimensional array and check the shape of the array

In [27]:
```
print(c)
print(np.shape(c))
```

```
[[1 2 3]
 [4 5 6]]
(2, 3)
```

8. Using the arange() and linspace() function to evenly space values in a specified interval

In [28]:
```
print(np.arange(2,40,3))
print(np.linspace(1,100,num=17,dtype=np.int32))
```

```
[ 2  5  8 11 14 17 20 23 26 29 32 35 38]
[  1   7  13  19  25  31  38  44  50  56  62  69  75  81  87  93 100]
```

9. Create an array of random values between 0 and 1 in a given shape

In [30]:
```
print(np.random.rand(2,5))
```

```
[[0.51825558 0.78753785 0.01972309 0.32274393 0.84111092]
 [0.5811165  0.89122807 0.93429229 0.61636901 0.16423669]]
```

10. Repeat each element of an array by a specified number of times using repeat() and tile() functions

In [33]:
```
print(np.repeat(c,3))
print(np.tile(c,3))
```

```
[1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6]
[[1 2 3 1 2 3 1 2 3]
 [4 5 6 4 5 6 4 5 6]]
```

11. How do you know the shape and size of an array?

Using np.shape() and np.size() functions

In [34]:
```
print(np.shape(c))
print(np.size(c))
```

```
(2, 3)
6
```

12. Create an array that indicates the total number of elements in an array

In [35]:
```
a=np.array([9,8,7,6,5,4,3,2])
print(np.size(a))
```

```
8
```

13. To find the number of dimensions of the array

Using np.ndim() function

In [38]:
```
print(np.ndim(c))
```

```
2
```

14. Create an array and reshape into a new array

In [48]:
```
b=np.array([[10,20,30],[40,50,60],[70,80,90]])
print(b.reshape(9,1))
```

```
[[10]
 [20]
 [30]
 [40]
 [50]
 [60]
 [70]
 [80]
 [90]]
```

15. Create a null array of size 10

In [49]:
```
z=np.array(np.zeros(8,dtype=np.int32))
print(z)
```

```
[0 0 0 0 0 0 0 0]
```

16. Create any array with values ranging from 10 to 49 and print the numbers whose remainders are zero when divided by 7

In [52]:
```
z=np.arange(10,50)
x=z[(z%7==0)]
print(x)
```

```
[14 21 28 35 42 49]
```

17. Create an array and check any two conditions and print the output

In [53]:
```
z=np.array([1,2,3,4,5,6])
x=z[(z>3)&(z<5)]
print(x)
```

```
[4]
```

18. Use Arithmetic operator and print the output

In [54]:
```
a=np.array([1,2,3])
b=np.array([9,6,3])
d=a+b
print(d)
```

```
[10  8  6]
```

19. Use Relational operators and print the results using array

In [58]:
```
a=np.array([13,24,45,28,5,64])
b=a[(a>25)]
print(b)
```

```
[45 28 64]
```

20. Difference between python and ipython

Python: It is a programming language. Python is easy to read, understand and learn. Ipython: IPython is an interactive shell that is built with python. It contains REPL (Read Eval Print Loop).

In [ ]:
```

```