

numpy part 3

February 1, 2024

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

```
[101]: #CREATING TWO ARRAYS
```

```
[10]: b = np.array([3,1,6,7,10,21,34,55,61,1])  
      c = np.array([5,4,7,6,1,6,7,9,15,12])
```

```
[12]: print(len(b))  
      print(len(c))
```

```
10
```

```
10
```

```
[15]: #math operators
```

```
[17]: #adding
```

```
[20]: print(b+c)  
      print(np.add(b,c))
```

```
[ 8  5 13 13 11 27 41 64 76 13]
```

```
[ 8  5 13 13 11 27 41 64 76 13]
```

```
[24]: #subtraction
```

```
[22]: print(b-c)  
      print(np.subtract(b,c))
```

```
[-2 -3 -1  1  9 15 27 46 46 -11]
```

```
[-2 -3 -1  1  9 15 27 46 46 -11]
```

```
[26]: #multiplication
```

```
[32]: print(b*c)  
      print(np.multiply(b,c))
```

```
[ 15   4  42  42  10 126 238 495 915  12]
```

```
[ 15   4  42  42  10 126 238 495 915  12]
```

```
[34]: #division
```

```
[36]: print(b/c)
      print(np.divide(b,c))
```

```
[ 0.6          0.25          0.85714286  1.16666667 10.          3.5
 4.85714286  6.11111111  4.06666667  0.08333333]
[ 0.6          0.25          0.85714286  1.16666667 10.          3.5
 4.85714286  6.11111111  4.06666667  0.08333333]
```

```
[46]: #creating a array and using positive and negative (slicing & index)
```

```
[42]: a = np.array([1,2,3,4,9,10,11,46,15,6,89,84,48,47,17,15,5,4])
```

```
[53]: #positive index

      print(a[1])
```

```
2
```

```
[55]: #negative index

      print(a[-1])
```

```
4
```

```
[57]: #positive slicing

      print(a[1:4])
```

```
[2 3 4]
```

```
[59]: #negative slicing

      print(a[-4:-1])
```

```
[17 15 5]
```

```
[62]: # step

      print(a[1:-1:2])
```

```
[ 2  4 10 46  6 84 47 15]
```

```
[66]: # slicing without giving values

      print(a[:])
```

```
[ 1  2  3  4  9 10 11 46 15  6 89 84 48 47 17 15  5  4]
```

```
[ ]: #creating 2d array with 6 elements
```

```
[71]: x = np.array([[1,2,3,45,65,12],  
                  [4,2,3,5,62,15],  
                  [45,9,8,7,6,21],  
                  [12,13,15,16,61,41]])
```

```
[77]: print(x[2,1:3])
```

```
[9 8]
```

```
[83]: print(x[0:2,3])
```

```
[45 5]
```

```
[85]: #creating a array & finding sqrt using for loop
```

```
[89]: a = np.array([11,12,31,14,51])
```

```
[91]: import math  
      sqrt = math.sqrt  
      a = np.array([11])  
  
      for g in a:  
          print(sqrt(a))
```

```
3.3166247903554
```

```
[93]: import math  
      sqrt = math.sqrt  
      a = np.array([12])  
  
      for g in a:  
          print(sqrt(a))
```

```
3.4641016151377544
```

```
[95]: import math  
      sqrt = math.sqrt  
      a = np.array([31])  
  
      for g in a:  
          print(sqrt(a))
```

```
5.5677643628300215
```

```
[97]: import math
      sqrt = math.sqrt
      a = np.array([14])

      for g in a:
          print(sqrt(a))
```

3.7416573867739413

```
[99]: import math
      sqrt = math.sqrt
      a = np.array([51])

      for g in a:
          print(sqrt(a))
```

7.14142842854285

```
[ ]:
```