python numpy part 2

February 1, 2024

[16]:
```
import numpy as np
```

[22]:
```
#creating 5 rows and 5 columns with 5 elements
a = np.array([[1,11,12,13,2],
              [2,3,56,11,4],
              [1,2,6,4,5],
              [1,21,31,10,2],
              [20,21,15,61,10]])
```

[24]:
```
# accessing using index

# accessing first index and 3rd element

print(a[0,2])

#accessing fourth index and 2 nd element

print(a[3,1])
```

```
12
21
```

[28]:
```
# size of elements

print(a.size)
```

```
25
```

[32]:
```
# length of array

print(len(a))
```

```
5
```

[56]:
```
# creating 3d array and accesssing 2d array and elements

b = np.array([[[3,2,1],[5,6,7]],
      [[65,54,46],[1,3,5]],
```

```
      [[5,9,4],[64,51,15]],
      [[31,12,13],[20,10,11]]])
```

[48]:
```
#example 1

#1st row

print(b[0,0,2])
```

```
1
```

[50]:
```
# example 2

#2nd row

print(b[1,1,0])
```

```
1
```

[54]:
```
# example 3

#3rd row

print(b[2,0,1])
```

```
9
```

[58]:
```
# example 4

# 4th row

print(b[3,1,2])
```

```
11
```

[78]:
```
#creatind 1d array with 60 numbers

c = np.
 ↪array([1,2,5,6,4,3,2,1,1,6,5,4,9,4,6,4,1,2,3,6,9,4,6,5,7,4,8,9,1,2,3,6,54,4,98,7,5,6,9,48,9
```

[86]:
```
# no.of elements present in array

print(c.size)
```

```
60
```

[88]:
```
# reshaping in to 2d array

```

```
print(c.reshape(10,6))
```

```
[[  1   2   5   6   4   3]
 [  2   1   1   6   5   4]
 [  9   4   6   4   1   2]
 [  3   6   9   4   6   5]
 [  7   4   8   9   1   2]
 [  3   6  54   4  98   7]
 [  5   6   9  48   9   7]
 [  1   2   3   5  77   6]
 [612   3   5   4   7   6]
 [ 12   4   9  34  33  20]]
```

[114]:
```
# reshaping into 3d array

print(c.reshape(2,5,6))
```

```
[[[  1   2   5   6   4   3]
  [  2   1   1   6   5   4]
  [  9   4   6   4   1   2]
  [  3   6   9   4   6   5]
  [  7   4   8   9   1   2]]

 [[  3   6  54   4  98   7]
  [  5   6   9  48   9   7]
  [  1   2   3   5  77   6]
  [612   3   5   4   7   6]
  [ 12   4   9  34  33  20]]]
```

[ ]:
```

```