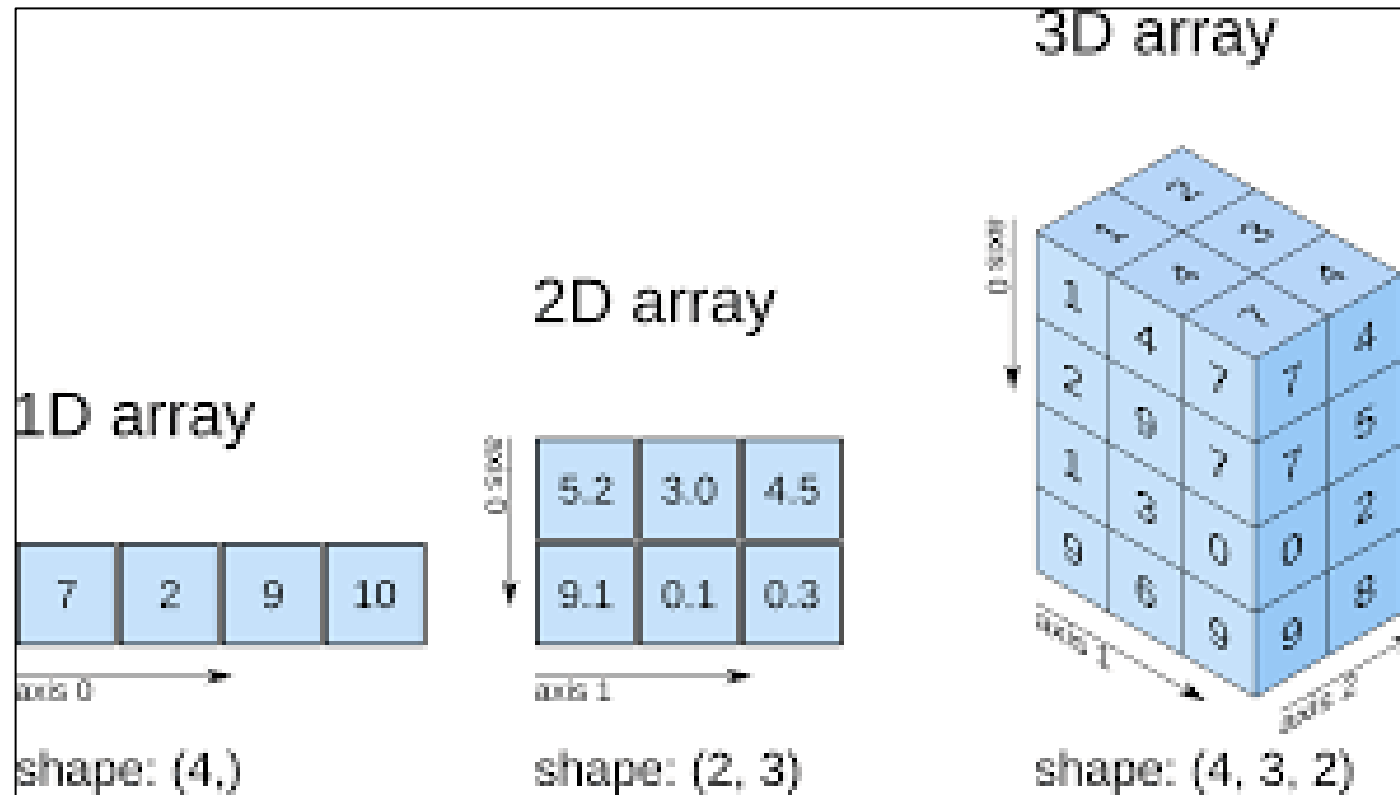


Numpy Arrays

UTKARSH GAIKWAD

What is numpy array?



Creating array in numpy

```
import numpy as np
```



```
np.array([1,2,3,4,5])
```

Advantages of numpy compared to a list

Lists

```
L = [1,2,3,4,5]
```

Multiply by 3 to a number inside a list

```
L2 = []  
for i in L:  
    L2.append(3*i)
```

Array

```
A = np.array([1,2,3,4,5])
```

Multiply by 3 inside a array

```
A2 = 3*A
```

Advantage of numpy compared to a list

Lists

```
L = [1,2,3,4,5]
```

Sum all the elements in the list

```
S = 0  
for i in L:  
    S = S+i
```

Array

```
A = np.array([1,2,3,4,5])
```

Sum of all elements in array

```
S = np.sum(A)
```

Numpy aggregation

`np.sum(A)`

`np.mean(A)`

`np.std(A)`

`np.max(A)`

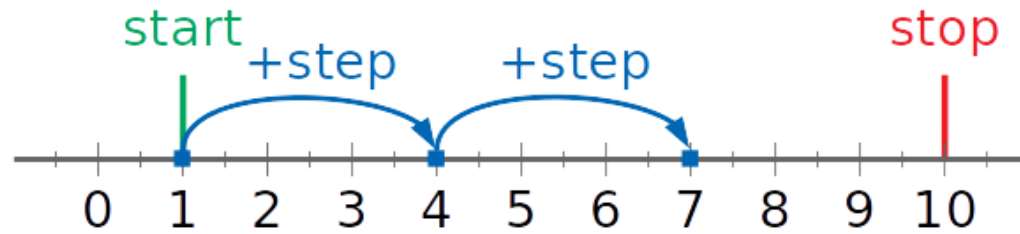
`np.min(A)`

`np.prod(A)`

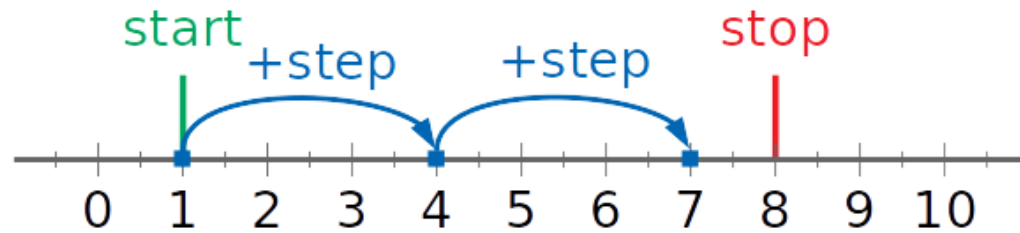
Generating Data Through Numpy

`np.arange(start, stop, step)`

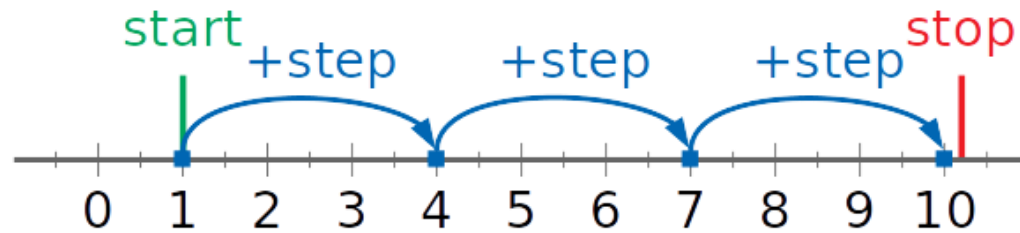
```
>>> np.arange(1, 10, 3)  
array([1, 4, 7])
```



```
>>> np.arange(1, 8, 3)  
array([1, 4, 7])
```



```
>>> np.arange(1, 10.1, 3)  
array([1., 4., 7., 10.])
```

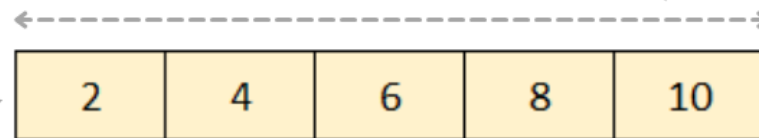


Generating Data Through numpy

```
np.linspace(start,stop,num)
```



```
np.linspace(2,10,5)
```



Equally spaced values

Generating random numbers in numpy

`np.random.random(size=n)`



Generates random
Numbers between 0 and 1
Of size n

`np.random.randint(low,high,size)`



Generates random numbers
Between low and high

`np.random.normal`



Generates Normal
Distribution

Common functions in numpy

`np.sqrt(A)`

`np.sin(A)`

`np.cos(A)`

`np.tan(A)`

`np.log(A)`

`np.exp(A)`

Thank you

PING ME ON SKYPE FOR ANY QUERIES

ONCE PRACTICAL COMPLETED YOU CAN LEAVE FOR THE DAY