

Numpy(part-1)

```
>>
import numpy as np #imports the numpy library and set its name as np
x=[1,2,3,4,5.6] # converting list to numpy array
a=np.array(x)
print(a)
```

```
[1.  2.  3.  4.  5.6]
```

```
>>
m=[1,2,3,4,5,7]
print(m)
```

```
[1, 2, 3, 4, 5, 7]
```

```
>>
b=np.array(m)
print(b)
```

```
[1 2 3 4 5 7]
```

```
>>
print(b**2) #b square
```

```
[ 1  4  9 16 25 49]
```

```
>>
# arange(start,end,step)
x=np.arange(10) # 10 is excluded
print(x)
```

```
[0 1 2 3 4 5 6 7 8 9]
```

```
>>
x=np.arange(2,12,3)
print(x)
```

```
[ 2  5  8 11]
```

```
>>
x=np.arange(20)
a=slice(2,15,2) # slice(start,end,step)
print(x[a])
```

```
[ 2  4  6  8 10 12 14]
```

```
>>
x=np.arange(10)
print(x[5]) # prints the fifth element
```

```
5
```

```
>>
x=np.arange(1,2,0.1)
print(x)
```

```
[1.  1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9]
```

```
>>
x=np.arange(10)
a=slice(2,4,0.2) # slice index must be integers not float
print(x[a])
```

```
-----
TypeError                                Traceback (most recent call last)
Input In [13], in <cell line: 3>()
      1 x=np.arange(10)
      2 a=slice(2,4,0.2)
----> 3 print(x[a])
```

TypeError: slice indices must be integers or None or have an `__index__` method

```
>>
# numpy array
a=np.array([1,2,3,4,5])
b=np.array([[1,2,3],[4,5,6],[7,8,9]])
print(a)
print(a.ndim) # ndim shows the dimentions of the array
print(b)
print(b.ndim)
```

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

```
1
```

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

```
2
```

```
>>
np.shape(a) # shows that it's a 5x1 matrix
```

```
(5,)
```

```
>>
np.shape(b) # shows that it's a 3x3 matrix
```

```
(3, 3)
```

```
>>
print(b[0])
print(b[0][1])
print(a[:3]) # starting to 2(excluding 3)
```

```
[1 2 3]
```

```
2
```

```
[1 2 3]
```