In [26]:
```
import numpy as np
np.__version__
```

Out[26]:
```
'2.3.0'
```

In [27]:
```
ml=[0,1,2,3,4,5]
ml
```

Out[27]:
```
[0, 1, 2, 3, 4, 5]
```

In [28]:
```
type(ml)
```

Out[28]:
```
list
```

In [29]:
```
arr=np.array(ml)
arr
```

Out[29]:
```
array([0, 1, 2, 3, 4, 5])
```

In [30]:
```
type(arr)
```

Out[30]:
```
numpy.ndarray
```

In [31]:
```
print(type(arr))
print(type(ml))
```

```
<class 'numpy.ndarray'>
<class 'list'>
```

In [32]:
```
np.arange(10)
```

Out[32]:
```
array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9])
```

In [33]:
```
np.arange(10,20)
```

Out[33]:
```
array([10, 11, 12, 13, 14, 15, 16, 17, 18, 19])
```

In [34]:
```
np.arange(10, 20, 2)
```

Out[34]:
```
array([10, 12, 14, 16, 18])
```

In [35]:
```
np.arange(10,20,3,4)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[35], line 1
----> 1 np.arange(10,20,3,4)

TypeError: Cannot interpret '4' as a data type
```

In [ ]:
```
np.arange(10,5)
```

Out[ ]:
```
array([], dtype=int64)
```

In [ ]:
```
np.arange(-20,8)
```

Out[ ]:
```
array([-20, -19, -18, -17, -16, -15, -14, -13, -12, -11, -10,  -9,  -8,
        -7,  -6,  -5,  -4,  -3,  -2,  -1,   0,   1,   2,   3,   4,   5,
         6,   7])
```

In [ ]:
```
np.zeros(5)
```

Out[ ]:
```
array([0., 0., 0., 0., 0.])
```

In [ ]:
```
np.zeros(5,dtype=int)
```

Out[ ]:
```
array([0, 0, 0, 0, 0])
```

In [ ]:
```
np.zeros((2,2))
```

Out[ ]:
```
array([[0., 0.],
       [0., 0.]])
```

In [ ]:
```
np.zeros((4,4),dtype=int)
```

Out[ ]:
```
array([[0, 0, 0, 0],
       [0, 0, 0, 0],
       [0, 0, 0, 0],
       [0, 0, 0, 0]])
```

In [ ]:
```
print(np.ones(5))
print(np.ones(5, dtype=int))
```

```
[1. 1. 1. 1. 1.]
[1 1 1 1 1]
```

In [ ]:
```
np.ones((3,3), dtype=int)
```

Out[ ]:
```
array([[1, 1, 1],
       [1, 1, 1],
       [1, 1, 1]])
```

In [ ]:
```
np.ones((10,10), dtype=int)
```

Out[ ]:
```
array([[1, 1, 1, 1, 1, 1, 1, 1, 1, 1],
       [1, 1, 1, 1, 1, 1, 1, 1, 1, 1],
       [1, 1, 1, 1, 1, 1, 1, 1, 1, 1],
       [1, 1, 1, 1, 1, 1, 1, 1, 1, 1],
       [1, 1, 1, 1, 1, 1, 1, 1, 1, 1],
       [1, 1, 1, 1, 1, 1, 1, 1, 1, 1],
       [1, 1, 1, 1, 1, 1, 1, 1, 1, 1],
       [1, 1, 1, 1, 1, 1, 1, 1, 1, 1],
       [1, 1, 1, 1, 1, 1, 1, 1, 1, 1],
       [1, 1, 1, 1, 1, 1, 1, 1, 1, 1]])
```