1_numpy_ndarray

May 16, 2019

numpy

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

array

```
In [ ]: test_array = np.array(["1", "4", 5, 8], float)
        test_array

In [ ]: type(test_array[3])

In [ ]: test_array = np.array([1, 4, 5, "8"], float) # String Type
        test_array

In [ ]: type(test_array[3])   # Float Type

In [ ]: test_array.dtype   # Array()   Type

In [ ]: test_array

In [ ]: test_array.shape   # Array()  shape
```

arrary shape

```
In [ ]: vector  = [1,2,3,4]
        np.array(vector, int).shape

In [ ]: matrix  = [[1,2,5,8],[1,2,5,8],[1,2,5,8]]
        np.array(matrix, int).shape

In [ ]: tensor  = [[[1,2,5,8],[1,2,5,8],[1,2,5,8]],
                   [[1,2,5,8],[1,2,5,8],[1,2,5,8]],
                   [[1,2,5,8],[1,2,5,8],[1,2,5,8]],
                   [[1,2,5,8],[1,2,5,8],[1,2,5,8]]]
        np.array(tensor, int).shape

In [ ]: np.array(tensor, int).ndim

In [ ]: np.array(tensor, int).size
```

numpy dtype

```
In [ ]: a = np.array([[1, 2, 3], [4.5, 5, 6]], dtype=int)

In [ ]: np.array([[1, 2, 3], [4.5, "5", "6"]], dtype=np.float32)

In [ ]: np.array([[1, 2, 3], [4.5, "5", "6"]],
                 dtype=np.float32).nbytes

In [ ]: np.array([[1, 2, 3], [4.5, "5", "6"]],
                 dtype=np.int8).nbytes

In [ ]: np.array([[1, 2, 3], [4.5, "5", "6"]],
                 dtype=np.float64).nbytes
```