

test_Numpy

September 17, 2025

1 This is my numpy test

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

2 Creating arrays

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

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

```
[6]: np.ones(10)
```

```
[6]: array([1., 1., 1., 1., 1., 1., 1., 1., 1., 1.])
```

```
[7]: np.full(10, 3.5)
```

```
[7]: array([3.5, 3.5, 3.5, 3.5, 3.5, 3.5, 3.5, 3.5, 3.5, 3.5])
```

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

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

```
[13]: np.linspace(0,10,11) # raneStart,rangeEnd,steps
```

```
[13]: array([ 0.,  1.,  2.,  3.,  4.,  5.,  6.,  7.,  8.,  9., 10.])
```

3 Multi-dimentional arrays

```
[14]: np.zeros((5,2))
```

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

```
[15]: n= np.array([
        [1,2,3],
        [4,5,6],
        [7,8,9]
    ])
```

```
[16]: n
```

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

```
[18]: n[0,2]
```

```
[18]: np.int64(3)
```

```
[19]: n[0,2] = 10
```

```
[20]: n[0,2]
```

```
[20]: np.int64(10)
```

```
[26]: n[2] = np.ones(3)
```

```
[27]: n[2]
```

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

```
[23]: n
```

```
[23]: array([[ 1,  2, 10],
          [ 4,  5,  6],
          [ 1,  1,  1]])
```

```
[28]: n[:,2] = [0,1,2]
```

```
[29]: n
```

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

4 Radnomly generated arrays

```
[33]: np.random.rand(5,2)
```

```
[33]: array([[0.03476087, 0.0205929 ],
           [0.78767104, 0.80215171],
           [0.42183007, 0.97834826],
           [0.05521676, 0.57701164],
           [0.05026987, 0.17870066]])
```

```
[34]: np.random.seed(2) # we fix the seed such that the "random" numbers are always
      ↪ same
      np.random.rand(5,2)
```

```
[34]: array([[0.4359949 , 0.02592623],
           [0.54966248, 0.43532239],
           [0.4203678 , 0.33033482],
           [0.20464863, 0.61927097],
           [0.29965467, 0.26682728]])
```

```
[35]: np.random.seed(2) # we fix the seed such that the "random" numbers are always
      ↪ same
      np.random.rand(5,2)
```

```
[35]: array([[0.4359949 , 0.02592623],
           [0.54966248, 0.43532239],
           [0.4203678 , 0.33033482],
           [0.20464863, 0.61927097],
           [0.29965467, 0.26682728]])
```

```
[36]: np.random.randn(5,2)
```

```
[36]: array([[ 0.55145404,  2.29220801],
           [ 0.04153939, -1.11792545],
           [ 0.53905832, -0.5961597 ],
           [-0.0191305 ,  1.17500122],
           [-0.74787095,  0.00902525]])
```

5 Element-wise-operations

```
[ ]:
```