

◆ SPECIAL ARRAYS IN NUMPY

(Explain + Code + Output)

WE USE SPECIAL ARRAY WHEN WE HAVE TO CREATE DEFAULT VALUES ,RANDOM DATA , AND MATHEMETICAL MATRIX

Special arrays ka use tab hota hai jab hume **default values**, **random data**, ya **mathematical matrices** banana ho — especially **AI / ML** me.

CODE:-

```
import numpy as np

arr = np.zeros((3, 3))

print(arr)
```

OUTPUT :-

```
[[0. 0. 0.]
 [0. 0. 0.]
 [0. 0. 0.]]
```

2 `ones()` Array

☞ **Isme** saare elements 1 **hote hain**

Jab har jagah default value 1 chahiye ho.

CODE :-

```
arr = np.ones((2, 4))

print(arr)
```

OUTPUT:-

RIGHT YOUR OWN

full() Array

☞ **Pura array** ek hi value se **bharti** hai

Explain

Jab hume custom value se array fill karna ho.

CODE:-

```
arr = np.full((3, 3), 7)
print(arr)
```

random.rand()

☞ 0 se 1 ke beech **random float values**

Explain

Random data generate karne ke liye.

Code: -

```
arr = np.random.rand(3, 3)
print(arr)
```

OUTPUT :

WRITE YOUR OWN

arange()

☞ Range ke numbers generate karta hai

Explain

range() jaisa hai but NumPy ke liye.

CODE :-

```
arr = np.arange(1, 11, 2)
print(arr)
```

empty()

☞ Garbage/random values hoti hain (initial)

Explain

Fast hai but values reliable nahi hoti.

CODE:-

```
arr = np.empty((2, 2))
print(arr)
```

OUTPUT:-

```
[[2.3e-308 4.6e-310]
 [6.9e-310 1.2e-312]]
```

QUICK REVISION TABLE

Function	USE
<code>zeros()</code>	0 se bhara
<code>ones()</code>	1 se bhara
<code>full()</code>	Same value
<code>eye()</code>	Identity matrix
<code>rand()</code>	Random float
<code>randint()</code>	Random int
<code>arange()</code>	Range
<code>linspace()</code>	Equal gap
<code>empty()</code>	Garbage values