

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