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In [1]: # Day 56 - Introduction to Jupyter Notebook & NumPy
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# Step 1: Import NumPy
import numpy as np
```

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In [2]: # Step 2: Create basic arrays
a = np.array([1, 2, 3, 4, 5])
b = np.array([[1, 2, 3], [4, 5, 6]])
```

```
In [3]: # Step 3: Display arrays
print("1D Array:\n", a)
print("\n2D Array:\n", b)
```

```
1D Array:
[1 2 3 4 5]
```

```
2D Array:
[[1 2 3]
 [4 5 6]]
```

```
In [4]: # Step 4: Array Attributes
print("\nArray 'a' Attributes:")
print("Shape:", a.shape)
print("Dimensions:", a.ndim)
print("Data type:", a.dtype)
```

```
Array 'a' Attributes:
Shape: (5,)
Dimensions: 1
Data type: int64
```

```
In [5]: print("\nArray 'b' Attributes:")
print("Shape:", b.shape)
print("Dimensions:", b.ndim)
print("Data type:", b.dtype)
```

```
Array 'b' Attributes:
Shape: (2, 3)
Dimensions: 2
Data type: int64
```

```
In [6]: # Step 5: Create arrays using NumPy functions
zeros_arr = np.zeros((2, 3))
ones_arr = np.ones((3, 2))
range_arr = np.arange(0, 10, 2)
```

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In [7]: print("\nZeros Array:\n", zeros_arr)
print("\nOnes Array:\n", ones_arr)
print("\nRange Array:\n", range_arr)
```

Zeros Array:

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

Ones Array:

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

Range Array:

```
[0 2 4 6 8]
```

```
In [8]: # Step 6: Broadcasting example  
x = np.array([1, 2, 3])  
y = np.array([10])  
result = x + y  
print("\nBroadcasting Example (x + y):", result)
```

Broadcasting Example (x + y): [11 12 13]