In [1]:
```
!pip install numpy
import numpy as np
print(np.__version__)
```

```
Requirement already satisfied: numpy in c:\users\janam\anaconda3\lib\site-packages
(1.24.3)
1.24.3
```

In [2]:
```
import numpy as np
array = np.array([1, 2, 3, 4])
print(type(array))
```

```
<class 'numpy.ndarray'>
```

In [3]:
```
import numpy as np
array = np.array([10, 20, 30, 40])
print(array)
```

```
[10 20 30 40]
```

In [4]:
```
import numpy as np
array = np.array([[1, 2], [3, 4]])
print(array)
```

```
[[1 2]
 [3 4]]
```

In [5]:
```
import numpy as np
array = np.zeros((3, 3))
print(array)
```

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

In [6]:
```
import numpy as np
array = np.ones((2, 4))
print(array)
```

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

In [7]:
```
import numpy as np
array = np.array([5, 10, 15, 20])
print(array)
```

```
[ 5 10 15 20]
```

In [8]:
```
import numpy as np
array = np.arange(10)
print(array)
```

```
[0 1 2 3 4 5 6 7 8 9]
```

In [9]:
```
import numpy as np
array = np.array([[1, 2], [3, 4]])
print(array[1, 0])
```

```
3
```

In [10]:
```
import numpy as np
array = np.array([10, 20, 30, 40, 50])
print(array[:3])
```

```
[10 20 30]
```

In [11]:
```
import numpy as np
array = np.array([[1, 2, 3], [4, 5, 6], [7, 8, 9]])
print(array[1:, :2])
```

```
[[4 5]
 [7 8]]
```

In [12]:
```
import numpy as np
array = np.array([1, 2, 3], dtype=np.float64)
print(array.dtype)
```

```
float64
```

In [13]:
```
import numpy as np
array = np.array([1, 2, 3], dtype=np.int32)
print(array.dtype)
```

```
int32
```

In [14]:
```
import numpy as np
array = np.array([1, 2, 3])
copy = array.copy()
copy[0] = 99
print(array)
```

```
[1 2 3]
```

In [15]:
```
import numpy as np
array = np.array([[1, 2], [3, 4]])
print(array.shape)
```

```
(2, 2)
```

In [16]:
```
import numpy as np
array = np.array([[[1], [2]], [[3], [4]]])
print(array.shape)
```

```
(2, 2, 1)
```

In [17]:
```
import numpy as np
array = np.arange(6)
reshaped = array.reshape((2, 3))
print(reshaped)
```

```
[[0 1 2]
 [3 4 5]]
```

In [18]:
```
import numpy as np
array = np.array([[1, 2], [3, 4]])
reshaped = array.reshape(-1)
print(reshaped)
```

```
[1 2 3 4]
```

In [19]:
```
import numpy as np
array = np.array([1, 2, 3, 4])
```

```
for element in array:
    print(element)
```

```
1
2
3
4
```

In [20]:
```
import numpy as np
array = np.array([[1, 2], [3, 4]])
for row in array:
    print(row)
```

```
[1 2]
[3 4]
```

In [21]:
```
import numpy as np
array1 = np.array([1, 2, 3])
array2 = np.array([4, 5, 6])
joined = np.concatenate((array1, array2))
print(joined)
```

```
[1 2 3 4 5 6]
```

In [22]:
```
import numpy as np
array1 = np.array([[1, 2], [3, 4]])
array2 = np.array([[5, 6], [7, 8]])
joined = np.vstack((array1, array2))
print(joined)
```

```
[[1 2]
 [3 4]
 [5 6]
 [7 8]]
```

In [23]:
```
import numpy as np
array = np.array([1, 2, 3, 4, 5, 6])
split = np.array_split(array, 2)
print(split)
```

```
[array([1, 2, 3]), array([4, 5, 6])]
```

In [27]:
```
import numpy as np
array = np.array([1, 2, 3, 4, 5])
search = array[array > 3]
print(search)
```

```
[4 5]
```

In [28]:
```
import numpy as np
array = np.array([1, 3, 5, 2, 4])
index = np.argmax(array)
print(index)
```

```
2
```

In [29]:
```
import numpy as np
array = np.array([[3, 1, 2], [6, 4, 5]])
sorted_array = np.sort(array, axis=1)
print(sorted_array)
```

```
[[1 2 3]
 [4 5 6]]
```

In [30]:
```python
import numpy as np
array = np.array([1, 2, 3, 4, 5])
filtered = array[array % 2 == 0]
print(filtered)
```

```
[2 4]
```

In [31]:
```python
import numpy as np
array = np.array([[1, 2, 3], [4, 5, 6]])
filtered = array[array > 4]
print(filtered)
```

```
[5 6]
```

In [ ]:
```python

```