Unit-4

Example of One-Dimensional (1D) Array

```python
import numpy as np
# Creating a 1D NumPy array
arr_1d = np.array([10, 20, 30, 40, 50])
print("1D Array:\n", arr_1d)
```

Example of Two-Dimensional (2D) Array (Matrix)

```python
import numpy as np
# Creating a 2D NumPy array
arr_2d = np.array([[1, 2, 3], [4, 5, 6], [7, 8, 9]])
print("2D Array:\n", arr_2d)
```

Example of Three-Dimensional (3D) Array

```python
import numpy as np
arr_3d = np.array([[[1, 2], [3, 4]], [[5, 6], [7, 8]]])
print(arr_3d)
```

Example of reverse array :

```python
import numpy as np
n= np.array([1, 2, 3, 4, 5])
reversed_arr = n[::-1]
print(reversed_arr)
```

Example of to find shortest and tallest person

```python
import numpy as np
heights = np.array([170, 165, 180, 175, 160])
```

```python
tallest = np.max(heights)
shortest = np.min(heights)


print("Tallest person:", tallest, "cm")
print("Shortest person:", shortest, "cm")
```


Example of to find average Temperature Calculation Using NumPy

```python
import numpy as np
# Temperatures recorded daily
temperatures = np.array([30, 32, 31, 29, 28, 27, 33])
# Calculate average temperature
average_temp = np.mean(temperatures)
print("Average temperature of the week:", average_temp)
```


Example: Finding the Fastest and Slowest Runner using NumPy

```python
import numpy as np


# Race completion times (in seconds) for 5 runners
race_times = np.array([12.5, 11.8, 13.2, 10.9, 12.0])


# Finding the fastest and slowest runner
fastest_time = np.min(race_times)  # Minimum time = fastest runner
slowest_time = np.max(race_times)  # Maximum time = slowest runner


print("Fastest runner completed in:", fastest_time, "seconds")
print("Slowest runner completed in:", slowest_time, "seconds")
```