

CLASS 1

PART 2: NumPy Basics

1. What is NumPy?

NumPy (Numerical Python) is a Python library used for numerical and scientific computing.

2. Why is NumPy Faster than Python Lists?

- Uses optimized C code internally
- Supports vectorized operations
- Less memory usage

3. What is an ndarray?

An **ndarray** (N-dimensional array) is the core data structure of NumPy used to store homogeneous data efficiently.

4. Difference between Array and List

NumPy Array	Python List
Homogeneous elements	Can store different data types
Faster computation	Slower
Supports vector operations	Does not

5. What is Broadcasting?

Broadcasting allows NumPy to perform operations on arrays of different shapes by automatically expanding smaller arrays.