

1. **What is vectorization in NumPy?**

Vectorization is performing operations on entire arrays at once instead of using loops, making computations faster.

2. **What is the difference between reshape() and resize()?**

reshape() returns a new view with a changed shape without modifying data, while resize() changes the shape of the original array.

3. **What are NumPy dimensions and axes?**

Dimensions indicate the number of array levels (1D, 2D, etc.), and axes represent directions along which operations are performed.

4. **What is slicing in NumPy arrays?**

Slicing is extracting a portion of an array using index ranges.

5. **How does NumPy help in mathematical computations for AI?**

NumPy provides fast array operations, linear algebra functions, and vectorized computations essential for AI algorithms.