Using NumPy

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Basics of NumPy

NumPy is a powerful library for numerical computing in Python, providing support for arrays, matrices, and mathematical functions.

Computation on NumPy

NumPy offers efficient mathematical operations, such as element-wise addition, multiplication, and broadcasting.

Aggregations

Aggregation functions in NumPy include sum(), mean(), min(), and max() to analyze data across arrays.

Computation on Arrays

Arrays in NumPy support operations like element-wise addition, subtraction, multiplication, and division.

Comparisons

NumPy provides comparison operators like >, <, == for element-wise operations on arrays.

Masks and Boolean Arrays

Boolean masking allows filtering array elements based on conditions, useful in data processing.

Fancy Indexing

Fancy indexing enables selecting multiple elements from an array using integer or boolean arrays.

Sorting Arrays

NumPy includes sorting functions like np.sort() and np.argsort() for arranging elements in ascending or descending order.

Structured Data: NumPy’s Structured Array

Structured arrays allow handling heterogeneous data types, useful for handling tabular datasets efficiently.