

Data Manipulation with Pandas

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Introduction to Pandas Objects

Pandas provides Series and DataFrame objects for handling structured data efficiently.

Data Indexing and Selection

Pandas supports indexing using labels, boolean conditions, and integer location-based methods.

Operating on Data in Pandas

Pandas enables operations such as aggregation, filtering, and transformations on structured data.

Handling Missing Data

Missing values in Pandas can be handled using methods like `fillna()`, `dropna()`, and interpolation.

Hierarchical Indexing

Hierarchical indexing allows multi-level indexing in Pandas, enabling complex data manipulation.

Combining Data Sets

Pandas provides functions like `merge()`, `join()`, and `concat()` for integrating multiple datasets.

Aggregation and Grouping

Data aggregation is performed using `groupby()`, enabling statistical computations across grouped data.

Pivot Tables

Pivot tables help summarize data in a structured tabular format, useful for data analysis.

Vectorized String Operations

Pandas allows efficient string operations using `str` methods for text-based data manipulation.

Working with Time Series

Pandas supports time series data manipulation with functions for date parsing, resampling, and rolling computations.

High Performance Pandas - `eval()` and `query()`

The `eval()` and `query()` methods provide optimized operations for large datasets, improving performance.

