Introduction to Pandas

PIERIAN DATA

Python for Finance

- Get a quick introduction to pandas.
- Learn a bit about pandas' history.
- Dive straight into coding and learning how to use pandas in our jupyter notebooks!
- Afterwards see some example exercises.

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- Now that we understand the basics of Python and NumPy we can learn about Pandas!
- So what is “Pandas”?

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- It’s named after “Panel-Data” and was created by Wes McKinney.
- Pandas was first created to help work with datasets in Python for McKinney’s work in finance at his place of employment.

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- It is now an open source library that is freely available for all to use and contribute to!
- Let’s go through some of its main features (as pointed out by the official website).

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- A fast and efficient DataFrame object for data manipulation with integrated indexing.
- We'll work with DataFrames a lot!

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- Tools for reading and writing data between in-memory data structures and different formats:
  - CSV and text files, Microsoft Excel, SQL databases, and the fast HDF5 format, and much more!

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- Great interaction with Python Data Visualization libraries!
- Highly optimized for performance, with critical code paths written in Cython or C.
- Aggregating or transforming data with a powerful group by engine.

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- Learning pandas is fundamental to being able to easily work with the financial data we'll use in this course!
- We will first focus on "General Pandas" then have another section on working with time series data with pandas.

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- At the end of this section we will have a quick exercise for you to do to test your skills!

Let’s get started!

Series

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- Series are similar to NumPy arrays, except that we can give them a named or datetime index, instead of just a numerical index.
- Let’s see how they work!

DataFrames

DataFrames
Part Two

DataFrames
Part Three

Missing Data

GroupBy

Merging, Joining & Concatenating

Operations

Data Input and Output

Pandas Exercises

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- This exercise will test your new skills!
- We'll work with the failed banks data set (provided as a csv file)
- You can find this in the Pandas Exercises sub-folder.
- Let's quickly go through it!

Pandas Exercises Solutions