

# Python - data analysis (Pandas)

Course code: PYTHON\_DATAN

The course is designed for all those who are looking for a flexible data analysis tool, those interested in data processing in the Python programming language, who plan to use it for data manipulation, analysis and visualization, respectively.

## What we teach you:

- Course participants will learn to use the Pandas library and other supporting libraries that are needed to work with data, analyze and visualize it.

## Who the course is for:

- Data Scientist, data analysts, especially in the Big Data environment, is the primary auditor for this intensive course.
- Software developers who are familiar with Python at least at intermediate and advanced levels and aim to create data-intensive applications using the SPARK Big Data (Cloud) engine.
- Data architects

## Required skills:

- Basic knowledge of Python at the PYTHON\_INTRO level

## Teaching methods:

- Professional explanation with practical samples and examples.

## Teaching materials:

- Powerpoint handouts and module printouts.

## Course syllabus:

Introduction to IPython

- Tools for online work with data (Jupyter Notebook and Jupyter Lab)
- Export output to PDF and other formats

Overview of data structures in Python

- Sheet, tuple, etc.

Pandas module

- Objects for working with data (Series, DataFrame)

NumPy module

- Work with multidimensional data structures

Import data from different sources

- CSV
- HTML
- JSON
- SQL

Work with data

- Transformation
- Filling in missing values
- Mapping
- Replacement

Advanced work with data

- Concat merge join
- Pivoting, stacking, unstacking
- Melting

Aggregation and grouping of data

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# Python - data analysis (Pandas)

- Split apply combine
- Transformation
- Filtering

## Time lines

- Representation of date, time, and time intervals
- Timestamp, Timedelta, DateTimeIndex, and more

## Visualization

- IPython graphing
- Loading data into charts from Pandas objects
- Work with charts of different types
- Data aggregation into graphs

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