

Updated on 05/11/2026

Sign up

Data Analysis with Python - Intermediate

3 days (21 hours)

Overview

Data analysis with Python is a key skill for effectively leveraging data and generating relevant business insights.

Our Data Analysis with Python course will teach you how to master data manipulation with pandas, visualization with matplotlib and seaborn, and the basics of statistical analysis.

You will learn to clean, transform, and explore datasets, build relevant visualizations, and structure your analyses to address real-world problems.

By the end of the course, participants will be able to analyze and visualize data using Python.

Like all our courses, this one will introduce you to **the latest stable version** of the technology and its new features.

Objectives

- Manipulate data with pandas.
- Visualize data with matplotlib and seaborn.
- Clean and prepare datasets.
- Perform basic statistical analyses.

Target Audience

- Analysts

- Data scientists

Prerequisites

- Basic knowledge of Python and Excel

Prerequisites

- A computer with at least 8 GB of RAM; 16 GB recommended
- 10 GB of available disk space
- Windows, Linux, or macOS with stable internet access
- A modern browser; Chrome is recommended for the labs
- Python 3 installed

Data Analysis with Python Training Program - Intermediate

[Day 1 - Morning]

Introduction to Data Analysis with Python

- The Role of Python in Data Analysis
- Introduction to pandas and data structures
- Loading data (CSV, Excel)
- Initial exploration of datasets
- Understanding Data Structure
- Hands-on Workshop: Loading and Exploring a Dataset.

[Day 1 - Afternoon]

Data manipulation and transformation

- Filtering and selecting data
- Manipulating DataFrames
- Handling missing values
- Data transformation and enrichment
- Joins and aggregations
- Hands-on workshop: Cleaning and transforming a dataset.

[Day 2 - Morning]

Data preparation and quality

- Anomaly detection
- Advanced data cleaning
- Normalization and standardization
- Duplicate Management
- Structuring for analysis
- Hands-on workshop: Preparing a real-world dataset.

[Day 2 - Afternoon] Data

visualization

- Introduction to matplotlib
- Using Seaborn
- Choosing the right chart type
- Customizing visualizations
- Storytelling with data
- Hands-on workshop: Creating simple dashboards.

[Day 3 - Morning]

Basic statistical analysis

- Descriptive statistics
- Data distribution
- Correlations and interpretation
- Key indicators
- Interpretation of results
- Hands-on workshop: Statistical analysis of a dataset.

[Day 3 - Afternoon]

Comprehensive practical case study in data analysis

- Defining a business need
- Data cleaning and preparation
- Analysis and visualization
- Interpreting the results
- Presenting insights
- Hands-on workshop: Complete data analysis project.

Target Audience

This training is intended for both individuals and companies, large or small, wishing to train their teams in a new advanced IT technology or to

acquire specific business knowledge or modern methods.

Assessment upon enrollment

The pre-training assessment complies with Qualiopi quality standards. Upon final registration, the learner receives a self-assessment questionnaire that allows us to evaluate their estimated proficiency in various types of technologies, as well as their expectations and personal goals regarding the upcoming training, within the limits imposed by the selected format. This questionnaire also allows us to anticipate certain connection or internal security issues within the company (intra-company or virtual classroom) that could pose challenges for monitoring and ensuring the smooth running of the training session.

Teaching Methods

Practical Training: 60% Practical, 40% Theory. Training materials distributed in digital format to all participants.

Organization

The course alternates between theoretical input from the instructor, supported by examples and reflection sessions, and group work.

Assessment

At the end of the session, a multiple-choice questionnaire is used to verify that the skills have been properly acquired.

Certification

A certificate will be issued to each trainee who has completed the entire training program.