Faysal Aziz

Advanced Python for Finance

Elevate your financial analytics & web capabilities with advanced Python techniques

FA-0035 · 3 days

Software Development · Data & Analytics

Introduction

- 3 days

As finance continues to evolve under the influence of technology, proficiency in advanced Python techniques stands out as a key asset for any financial professional. This three-day intensive course is tailored to equip Python programmers with specialized skills in data transformation, web development, and natural language processing.

By integrating tools like Django, Flask, and spaCy, participants will learn to streamline financial operations, develop robust web applications, and extract actionable insights from textual data. Through a blend of theoretical concepts and practical applications, this course aims to advance your Python skills to effectively address complex financial challenges.

Learning outcomes

By the end of this course, participants will be able to:

- Implement advanced data transformation and extraction techniques using Python.
- Develop and deploy secure financial web applications using Django and Flask.
- Utilize spaCy for natural language processing to analyze financial documents.
- Create pipelines for automating data processing tasks in finance.
- Enhance their existing financial models and analyses with advanced Python code.

Prerequisites

- Strong foundation in Python programming and familiarity with the pandas library.
- Basic understanding of web technologies (HTML, CSS, JavaScript).
- Interest in applying Python skills to solve complex financial problems.

Targeted Audience

This course is designed for:

- **Financial Analysts and Data Scientists:** Who wish to deepen their Python skills in areas of data transformation, web development, and NLP.
- **IT Professionals in Finance:** Looking to build and maintain financial web applications.
- **Python Developers in Finance Departments:** Interested in specializing in financial data analysis and application development.

Training outline

1. Mastering Data Transformation and Extraction

Advanced Data Manipulation with Pandas

- Review of pandas basics: Quick refresher and introduction to advanced functionalities.
- Complex data transformations: Techniques for nested, grouped, and time-series data.
- Data extraction methods: Pulling data from various sources including APIs and databases.

Introduction to Data Pipelines

- Conceptualizing and building data pipelines: From extraction to transformation.
- Automating data workflows: Using Python scripts to streamline operations.

Practical Session: Building a Data Transformation Pipeline

- Hands-on coding exercise to develop a pipeline for real financial data.

2. Python for the Web – Django and Flask

Developing with Django

- Introduction to Django: Architecture, setup, and core concepts.
- Building a financial web application: Models, views, templates, and admin customization.
- Security features: Ensuring the integrity and security of financial data.

Exploring Flask

- Getting started with Flask: Simple setup for smaller projects.

Practical Session: Creating a Financial Web Dashboard

- Use Django to build a secure web reporting.
- Integrate Flask APIs to feed data.

3. Natural Language Processing with spaCy

Introduction to NLP in Finance

- Overview of NLP and its applications in finance: Sentiment analysis, document classification.
- Introduction to spaCy: Setup, features, and comparison with other NLP libraries.

Using spaCy for Financial Text Analysis

- Building NLP models to extract information from financial reports and news articles.
- Customizing spaCy pipelines for specific financial applications.

This comprehensive course outline ensures that participants not only revisit the fundamentals but also dive deep into more specialized fields of Python programming relevant to their roles in finance.

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