

Python Office Automation and Practical Web Applications

FA-0804 · 5 days

Software Development · Data & Analytics · Automation, RPA & Power Platform

Introduction

Build practical Python foundations for workplace tasks, then explore web applications and data processing. The five-day sequence moves from syntax and functions to OOP, APIs, Django and a guided deployment/data-handling exercise.

Selected examples introduce automation, extraction, conversion, presentation and external libraries. Use mutually compatible supported Python and Django releases; the course is a foundation for further study, not comprehensive server administration or production application certification.

Learning outcomes

- Write Python scripts using core data types, collections, loops and functions.
- Explain objects, classes, methods, scope and basic resource handling.
- Use external packages and file/data operations for selected workplace examples.
- Describe web servers and APIs and create an introductory Django application with models, users and administration.
- Review security/role and deployment considerations and apply pandas to a small data-processing task.

Prerequisites

For learners new to Python or adding it to existing programming experience. Basic computer and file-handling skills are useful. A prepared compatible Python/Django environment and selected datasets are required for the exercises.

Training outline

1. Day 1 — Logic, data types and collections

- Logic
- Algorithms
- Pseudo-coding
- Variables
- Objects
- Numbers
- Arithmetic Operations
- Strings Manipulation
- Data Structures
- Lists
- Tuples
- Dictionaries

Variables refer to objects; compare basic data structures, memory and resource-handling concepts.

2. Day 2 — Loops and functions

- Loops
- String operations with loops
- List operations with loops
- Dictionary operations with loops
- List comprehension
- Functions
- Recursions
- Scopes
- Arguments and Parameters
- Packing and Unpacking

3. Day 3 — OOP, web servers and APIs

- OOP
- Classes vs. Objects
- Functions vs. Methods

- Putting it all together
- Web Servers
- APIs
- Assessment

Introduce selected internet/data acquisition examples and explain the difference between a script, API and web application.

4. Day 4 — Environments and Django

- Environments
- Preparing the environment and dependencies for the Django exercises
- Django Basics
- Models and database
- User system
- Admin system
- Integration

Use compatible versions and selected dependencies. Review authentication, roles and basic security considerations alongside the user/admin examples.

5. Day 5 — Deployment and practical data processing

- Guided deployment workflow and production-setting considerations
- Operating-system and server-management essentials for the selected deployment
- Pandas
- Advanced file manipulation
- Data extraction
- Data manipulation
- Final Assessment

Selected extraction, conversion, scraping and graphical presentation examples use prepared or permitted data. Deployment is a guided introduction with environment-specific checks; Django runserver is not a production server.