

Advanced Python Course - 60 Day Plan

Trainer: Shri. N. Vijay Kumar (Senior Python Developer & Trainer)

Duration: 60 Days

Mode: Online / Offline

Week 1: Python Advanced Basics

Day 1: Python 3 Overview, Setup, Best Practices

Day 2: Data Types Deep Dive (int, float, string, list, tuple, dict, set)

Day 3: Advanced Functions (default args, *args, **kwargs)

Day 4: Anonymous Functions (lambda, map, filter, reduce)

Day 5: Comprehensions (List, Dict, Set)

Day 6: Error Handling (try-except, custom exceptions)

Day 7: Project 1 - Mini CLI Application

Week 2: OOP (Object-Oriented Programming)

Day 8: Classes and Objects

Day 9: Constructors, Destructors

Day 10: Inheritance (Single, Multiple, Multilevel)

Day 11: Polymorphism, Encapsulation, Abstraction

Day 12: Dunder (Magic) Methods

Day 13: Abstract Classes and Interfaces

Day 14: Project 2 - Build a Bank Account System

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Week 3: File Handling and Modules

Day 15: File I/O Operations (txt, csv, json)

Day 16: Working with OS and Sys modules

Day 17: Date and Time in Python

Day 18: Python Logging Module

Day 19: Creating and Using Modules

Day 20: Packaging in Python (pip basics)

Day 21: Project 3 - Log Monitoring App

Week 4: Advanced Python Features

Day 22: Iterators and Generators

Day 23: Decorators

Day 24: Context Managers

Day 25: Regular Expressions

Day 26: Multithreading and Multiprocessing

Day 27: Asyncio Basics

Day 28: Project 4 - Multi-threaded Web Scraper

Week 5: Web Development Basics

Day 29: HTTP Basics and API Concepts

Day 30: Introduction to Flask

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Day 31: Flask Routing and Templates

Day 32: REST API Development with Flask

Day 33: CRUD Operations in Flask

Day 34: Django vs Flask - Key Differences

Day 35: Project 5 - Build a Mini API with Flask

Week 6: Database and ORM

Day 36: SQL Basics (SELECT, INSERT, UPDATE, DELETE)

Day 37: Connecting Python to MySQL / PostgreSQL

Day 38: Introduction to ORM (SQLAlchemy basics)

Day 39: Django ORM Overview

Day 40: Migration and Models

Day 41: Advanced Queries with Django ORM

Day 42: Project 6 - Employee Management App

Week 7: Data Handling & APIs

Day 43: Consuming Public APIs (REST APIs)

Day 44: Introduction to Web Scraping (BeautifulSoup, Requests)

Day 45: Selenium Automation Basics

Day 46: Data Analysis Basics with Pandas

Day 47: Data Visualization Basics (Matplotlib)

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Day 48: Project 7 - Web Scraping and Data Visualization

Week 8: Advanced Topics

Day 49: Introduction to Machine Learning (optional overview)

Day 50: Introduction to Django Framework (Full-stack Python)

Day 51: Building a Django Web Application

Day 52: Django Templates, Views, Forms

Day 53: Django Admin and Authentication

Day 54: Deploying Python Applications (Heroku basics, Docker intro)

Day 55: Introduction to Testing in Python (pytest, unittest)

Week 9: Final Projects and Assessment

Day 56: Final Project Discussion

Day 57: Work on Final Project

Day 58: Final Project Development

Day 59: Final Project Deployment

Day 60: Final Assessment and Certification

Final Certification

At the end of the course, students will receive a certificate after successfully completing the project and passing the assessment.