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TEACHER



UrbanPro  
Recommended

# 10-Week Live 1-1 Python Training Program (15k Budget Course)

Unlock the Power of Python: From Basics to Big Data

## Module 1: Python Fundamentals (Weeks 1-2)

Get Started with a Solid Foundation

- **Environment Setup & Introduction**
  - Install Python, set up your favorite IDE (VS Code, PyCharm, or Jupyter Notebook)
  - Learn Git basics for version control
- **Basic Syntax and Data Types**
  - Understand numbers, strings, booleans, and data structures (lists, tuples, sets, dictionaries)
  - Perform basic arithmetic and data manipulations
- **Control Structures & Iteration**
  - Master conditionals (if, elif, else) and loops (for, while)
  - Use list comprehensions for efficient coding
- **Functions, Modules & Scope**
  - Define functions, handle parameters, and create reusable modules
  - Explore local vs. global variables and best coding practices
- **Error Handling & Debugging**
  - Implement try/except blocks and debugging techniques
  - Introduction to unit testing for robust code

*Hands-On Projects:* Build a calculator and write scripts to manipulate lists and strings.

## Module 2: Data Handling & Analysis (Weeks 3-4)

Transform Data into Actionable Insights

- **File I/O and Data Formats**

- Read/write text, CSV, and JSON files using Python
- Convert between JSON strings and Python objects
- **Mastering NumPy**
  - Create and manipulate arrays; perform vectorized operations
  - Use mathematical functions to calculate statistics
- **Data Analysis with Pandas**
  - Work with Series and DataFrames; filter and transform data
  - Clean, merge, and pivot data for deeper insights
- **Data Visualization**
  - Create line plots, bar charts, and histograms with Matplotlib
  - Enhance visualizations using Seaborn

*Hands-On Projects:* Clean and analyze a sample dataset, then build visualizations to highlight key trends.

## Module 3: Web & API Interaction (Weeks 5-6)

### Harness the Internet's Data Potential

- **Understanding HTTP & RESTful APIs**
  - Learn the fundamentals of HTTP methods and RESTful design
  - Decode API structures and status codes
- **Using the requests Library**
  - Send GET/POST requests and parse JSON responses
  - Manage request parameters and headers
- **Web Scraping with BeautifulSoup**
  - Learn HTML/CSS basics and extract targeted data from web pages
  - Follow best practices for ethical web scraping
- **Browser Automation with Selenium**
  - Automate browser tasks like login and navigation with Selenium
  - Write scripts to streamline repetitive online activities

*Hands-On Projects:* Create a script to fetch live weather or news data and build a simple web scraper.

## Module 4: Database & Big Data Integration (Week 7)

### Bridge Traditional Databases with Big Data Tools

- **SQL Fundamentals & Python Integration**

- Learn relational database concepts and execute SQL queries using SQLite
- Practice CRUD operations through Python
- **Introduction to Big Data Concepts**
  - Explore the Hadoop ecosystem: HDFS, MapReduce, and big data challenges
  - Understand how distributed processing works
- **Hadoop & Python Integration**
  - Use Python scripts in Hadoop Streaming for simple MapReduce tasks
  - Dive into PySpark: learn RDD transformations and DataFrame operations

*Hands-On Projects:* Create an application that reads data into SQLite, simulates a MapReduce job, and processes larger datasets with PySpark.

## Module 5: Building & Deploying Web Applications (Week 8)

### Turn Your Code into a Live Application

- **Introduction to Flask**
  - Set up a Flask project and understand routing and templating
  - Create RESTful endpoints to serve JSON data
- **Building a Dynamic Web Interface**
  - Design a dashboard to display processed data using HTML/CSS integrated with Flask
  - Learn to work with Flask templates for dynamic content
- **Deployment Essentials & Version Control**
  - Prepare your app for deployment (Heroku, local servers, etc.)
  - Master Git for efficient version control and collaboration

*Hands-On Projects:* Develop a dashboard or API service with Flask and deploy it live!

## Module 6: Capstone Project & Integration (Weeks 9-10)

### Showcase Your Mastery with a Real-World Project

- **Project Planning & Ideation**
  - Define a real-world problem that combines data collection, processing, and web presentation
  - Outline your project's scope, milestones, and goals
- **Development & Integration**

- Combine elements from all modules: data ingestion (files, APIs, web scraping), processing (Pandas, PySpark), and web deployment (Flask)
- Test, debug, and refine your application
- **Final Presentation & Documentation**
  - Prepare a detailed project report covering design decisions, challenges, and solutions
  - Demonstrate your working application in a live or recorded presentation

*Hands-On Deliverable:* Develop a comprehensive, portfolio-ready application that integrates everything you've learned.

## Why Choose my Live 1-1 Classes?

- **Personalized Learning:** Get direct, one-on-one guidance tailored to your pace and goals.
- **Real-Time Feedback:** Immediate support to overcome challenges and boost your coding confidence.
- **Hands-On Approach:** Practical projects and live coding sessions to ensure you master each concept.
- **Career-Ready Skills:** Build a portfolio that showcases your expertise in Python and big data.

Embark on your Python journey with our live 1-1 classes and transform your potential into practical, market-ready skills.

Let's build your future in technology—one line of code at a time! For more details, please contact me on Urban Pro.