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Python for Everyone

Level Up with Python from Part 1 in half a day

FA-0384

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

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Introduction

After getting a taste of Python's simplicity and power, it's time to build on that foundation. This half-day course is designed as a seamless continuation of your Python journey, introducing slightly more advanced techniques and tools for working with data.

From cleaning messy datasets to creating compelling visualizations and automating repetitive tasks, this workshop equips you with practical skills that have real-world applications.

With an emphasis on hands-on activities and relatable examples, you'll leave with a deeper understanding of how Python can supercharge your productivity and decision-making.

Learning outcomes

By the end of this course, participants will:

- Understand how to clean and prepare messy datasets.
- Write Python scripts to automate repetitive tasks.
- Use advanced visualization techniques to uncover deeper insights.
- Perform simple calculations and summaries on data.
- Build confidence to tackle independent projects.

Prerequisites

- Completion of the "Python for Everyone" introductory workshop or equivalent basic Python knowledge.
- A laptop with Python (and Jupyter Notebook) installed.
- Familiarity with basic Python syntax, variables, and working with simple datasets.

Training outline

1. 1. Welcome Back: Refresher and Recap

- Quick review of key concepts from the introductory course.
- Group activity: Revisit and modify your mini-project from the last session.
- Introduction to what we'll achieve in this course.

2. 2. Dealing with Messy Data: Cleaning and Preparation

- Understanding messy datasets: Missing values, duplicates, and inconsistencies.

  Advanced Pandas techniques:

  - Filling missing values.
  - Dropping unnecessary rows or columns.
  - Formatting data for consistency (e.g., dates, text cases).
- Hands-on: Clean a real-world dataset (e.g., a customer feedback file).

3. 3. Summarizing and Analyzing Data

  Grouping and aggregating data for insights.

  - Hands-on: Use Pandas to calculate metrics like averages, totals, and percentages.
- Simple statistical functions in Python: mean, median, and mode.
- Hands-on: Analyze trends and patterns in a provided dataset (e.g., sales or employee performance).

4. 4. Advanced Data Visualization

- Enhancing your charts with Matplotlib: Adding labels, titles, and legends.

  Introduction to Seaborn: A powerful library for beautiful, detailed plots.

  - Hands-on: Create heatmaps, pair plots, and advanced bar charts.
- Customizing visualizations to tell a compelling story.

5. 5. Automation with Python

- What is automation, and how can it help in everyday tasks?

  Writing scripts to:

  - Automatically clean and process datasets.
  - Save and export results as CSV or Excel files.

- Hands-on: Build a Python script to automate data cleaning and visualization for weekly reports.

6. 6. Mini-Project: From Raw Data to Insights

- Participants will work with a messy dataset, clean it, summarize it, and create a visual report.
- Showcase of individual/group results: Share findings and approaches.

7. 7. Wrap-Up and Next Steps

- Review of skills covered.
- Discussion: Where to go from here (advanced Python, machine learning, etc.).
- Free resources for continued learning.
- Q&A and feedback session.

This session builds on your knowledge with real-world examples and challenges, led by an instructor with over 30 years of industry expertise. Get ready to dive deeper and unlock Python’s true potential for data mastery!

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