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Python in a Day

Quick, Practical, and Powerful Programming for Beginners

FA-0391 · one day

Software Development · Data & Analytics

Introduction

Learn Python essentials in just one day with hands-on coding using Google Colab!

Python is a versatile programming language that powers everything from web development to artificial intelligence. Its simplicity, readability, and extensive library support make it the go-to choice for developers and data enthusiasts. This one-day crash course is designed to introduce you to Python's core concepts and practical applications. Using Google Colab, you'll dive directly into coding without worrying about installation hassles, making the most of your learning time.

With real-world examples and exercises, this course is tailored for beginners and professionals looking to get a quick start. The instructor brings over 30 years of industry experience and will ensure you're equipped with skills that are in demand today.

Learning outcomes

By the end of this crash course, you will:

- Understand the fundamentals of Python syntax and structure.
- Write and execute Python code directly in Google Colab.
- Use variables, data types, and control structures effectively.
- Work with functions and understand their importance in programming.
- Explore Python libraries to perform basic data analysis and visualization.
- Gain confidence to further explore Python for your specific needs.

Prerequisites

- A laptop with an internet connection.
- Basic familiarity with computers and programming concepts (mandatory).
- A Google account to access Google Colab.

Training outline

1. 1. Introduction to Python

- Overview of Python and its applications.

  Setting up and using Google Colab for coding.
  - Logging into Google Colab.
  - Understanding the Colab interface and notebook structure.

2. 2. Python Basics

- Writing your first Python program: Hello, World!
- Understanding Python syntax and indentation.

  Variables and data types:
  - Strings, integers, floats, and booleans.
  - Dynamic typing in Python.
- Printing and user input.

3. 3. Control Structures

  Conditional statements:
  - if, elif, and else.

  Loops in Python:
  - for and while loops.
  - Using break and continue.
- Practical exercises with decision-making and iterations.

4. 4. Functions and Code Organization

- Defining and calling functions.
- Function parameters and return values.

- The importance of modularity in coding.

  Writing reusable code:

  - Example: Temperature conversion utility.

5. 5. Data Structures in Python

Lists, tuples, and dictionaries:

- Differences and use cases.
- Common operations: adding, removing, and accessing elements.

- Sets and their operations.
- Iterating through data structures.

6. 6. Libraries and Practical Applications

- Introduction to Python libraries.
- Using numpy for basic calculations.

  Using matplotlib for simple visualizations:

  - Plotting a graph from a dataset.

  Using pandas for data manipulation:

  - Reading and analyzing a sample dataset.

7. 7. Hands-On Mini Project

Building a simple data visualization project:

- Read a CSV file containing sample data.
- Clean and analyze the data using pandas.
- Create and customize a graph using matplotlib.

8. 8. Next Steps in Python

- How to practice and continue learning Python after the course.

  Resources for further learning:

  - Online tutorials and documentation.
  - Communities and forums.

By the end of the day, you'll have a solid foundation in Python, confidence to write your own code, and insights into how Python can solve real-world problems.

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