

MASTERING PYTHON & SQL

Learn to build real-time
end-to-end application
using Python, SQL addition
to API integration

Curriculum

- Python Fundamentals
- Data Structures in Python
- Object-Oriented Programming (OOPs)
- Working with Files & Data
- Python for Data Handling
- Python for Data Visualization
- Advanced Python for Applications
- End-to-End project
- Bonus : Interview prep

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Detailed course topics

1. Python Fundamentals

- Installing Python & IDE setup
- Variables, Data Types & Operators
- Control Statements (if-else, loops)
- Functions (built-in & user-defined)

2. Data Structures in Python

- Lists, Tuples, Sets, Dictionaries
- Comprehensions (list, dict, set)
- Iterators & Generators

3. Object-Oriented Programming (OOPs)

- Classes, Objects, Attributes & Methods
- Encapsulation, Inheritance, Polymorphism
- Best practices in modular coding

4. Working with Files & Data

- File operations (read, write, append)
- Working with APIs & Web Requests
- Logging and Configurations

5. Python for Data Handling

- Introduction to Pandas (DataFrames, Series)
- Data cleaning, merging, grouping & reshaping
- Handling missing values & outliers

6. Python for Data Visualization

- Matplotlib & Seaborn basics
- Plotting charts, heatmaps & statistical graphs

7. Advanced Python for Applications

- Virtual Environments & Package Management
- Introduction to Flask/Django (Mini Project: Simple Web API)

8. Capstone Project

- End-to-end project integrating:
 - Data collection (API/CSV/Database)
 - Cleaning & preprocessing (Pandas)
 - Visualization & analysis (Matplotlib/Seaborn)
 - Presentation of results (Flask dashboard / Power BI integration)

Bonus: Interview Prep and Career Guidance.

This outline ensures participants gain theoretical knowledge and practical skills in python & SQL.

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