**Python Learning Path - From Basics to Advanced**

**📌 Chapter 1: Python Basics**

1. Introduction to Python
2. Installing Python and Setting Up IDEs
3. Writing and Running Python Scripts
4. Variables, Data Types, and Basic Operations
5. Input and Output (I/O)

**📌 Chapter 2: Control Flow & Loops**

1. Conditional Statements (if-elif-else)
2. Loops (for, while)
3. Iterators and Generators
4. List Comprehensions

**📌 Chapter 3: Functions & Modules**

1. Defining Functions and Arguments
2. Built-in Functions
3. Importing and Creating Modules
4. Exception Handling

**📌 Chapter 4: Data Structures**

1. Lists and Tuples
2. Dictionaries and Sets
3. Strings and String Manipulation
4. File Handling (Read/Write)

**📌 Chapter 5: Object-Oriented Programming (OOP)**

1. Classes and Objects
2. Inheritance and Polymorphism
3. Encapsulation and Abstraction
4. Special Methods (\_\_init\_\_, \_\_str\_\_, etc.)

**📌 Chapter 6: Working with Libraries**

1. NumPy for Numerical Computation
2. Pandas for Data Handling
3. Matplotlib & Seaborn for Data Visualization

**📌 Chapter 7: Advanced Python Concepts**

1. Decorators and Closures
2. Multithreading and Multiprocessing
3. File Compression and Working with Zip Files
4. Database Handling with SQLite

**📌 Chapter 8: Web & API Development**

1. Web Scraping with BeautifulSoup
2. Building APIs with Flask
3. Sending HTTP Requests with requests Module

**📌 Chapter 9: Data Science & Machine Learning**

1. Data Preprocessing
2. Scikit-Learn for ML
3. Deep Learning with TensorFlow & PyTorch

**📌 Chapter 10: Final Projects & Interview Preparation**

1. Mini Projects (To-Do App, Web Scraper, etc.)
2. Coding Challenges and Algorithm Problems
3. Mock Interviews and Best Practices