60-Day Python Mastery Roadmap

PHASE 1: Core Python (Days 1-20)

Days 1-5: Python Basics

- Install Python & VS Code / PyCharm
- Print, variables, input/output
- Data types: int, float, str, bool
- Type conversion
- Basic string operations

Days 6-10: Control Structures

- If/else statements
- Logical and comparison operators
- Loops (for, while)
- break, continue, pass

Days 11-15: Data Structures

- Lists, Tuples, Sets, Dictionaries
- List comprehensions
- Iterating over data structures
- Built-in functions: len(), sum(), sorted()

Days 16-20: Functions & Modules

- Defining and calling functions
- Arguments, *args, **kwargs
- Return values

- Lambda functions

- Importing and creating modules

PHASE 2: Intermediate Python (Days 21-40)

Days 21-25: File Handling

- Reading & writing text files

- Working with with open()

- CSV and JSON handling

Days 26-30: Error Handling & Debugging

- try, except, finally

- Raising custom errors

- Debugging with print() and using breakpoints in VS Code

Days 31-35: Object-Oriented Programming (OOP)

- Classes and objects

- __init__, self

- Inheritance and polymorphism

- Encapsulation and abstraction

Days 36-40: Useful Standard Libraries

- datetime, os, random, math

- collections, itertools, time

- Virtual environments (venv)

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PHASE 3: Applied Python (Days 41-60)

Days 41-45: Web & Automation Basics

- Using requests to access APIs
- Web scraping with BeautifulSoup
- Automating files with os and shutil
- Basics of tkinter GUI

Days 46-50: Intro to Data & Pandas

- Install Jupyter Notebook
- Basics of numpy, pandas
- Reading CSV/Excel
- Filtering, grouping, and plotting with matplotlib

Days 51-55: Mini Projects

- To-do list app (CLI or GUI)
- Weather app using API
- CSV data analyzer
- File organizer (moves files by extension)

Days 56-60: Learn Basics of AI/ML

- What is AI/ML?
- Install scikit-learn
- Linear regression project
- Classification intro with simple datasets

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Tips for Success

- Practice daily on HackerRank or LeetCode (easy).

- Join communities: Reddit r/learnpython, StackOverflow, or Discord groups.

- Build projects regularly to reinforce concepts.