

PYTHON ROADMAP

Learning Python(weeks)

1-2

Fundamental Python skills



- 📌 Topics to Cover:
 - Python syntax, variables, data types
 - Loops, conditionals, functions
 - List comprehensions, lambda functions, decorators
 - Error handling (try-except-finally)
- 🔧 Practice Tasks:
 - Write a script to process a list of numbers (filter, map, reduce)
 - Build a simple unit converter CLI tool

3-4



Scripting & File Handling

- 📌 Topics to Cover:
 - Reading/writing files (text, CSV, JSON)
 - Automating file organization
 - Parsing & modifying data in CSV/JSON
- 🔧 Practice Tasks:
 - Script that renames files in a directory based on a pattern
 - Convert JSON data into a CSV file
 - Automate sorting & moving files into categorized folders

5-6

APIs & Web Scraping



- 📌 Topics to Cover:
 - Making API requests (requests library)
 - Parsing JSON API responses
 - Web scraping (BeautifulSoup, Selenium)
- 🔧 Practice Tasks:
 - Script to fetch weather data from an API and save it to a file
 - Scrape job listings from a website and store in CSV

7-8



Command-Line Tools & Automation



- 📌 Topics to Cover:
 - Command-line arguments (argparse)
 - Automating system tasks (subprocess)
 - Logging (logging module)
- 🔧 Practice Tasks:
 - CLI tool to batch rename files
 - Script that monitors a folder for changes

9-10

Structuring Python Projects & Testing



- 📌 Topics to Cover:
 - Virtual environments (venv, pipenv)
 - Structuring projects (folders, __init__.py, modules)
 - Writing tests (unittest, pytest)
- 🔧 Practice Tasks:
 - Convert one of your scripts into a reusable Python package
 - Write tests for an existing script

Resources

1-2:

- Python Docs: <https://docs.python.org/3/tutorial/>
- Book: Automate the Boring Stuff with Python (Chapters 1-4)

3-4:

- Python File Handling: <https://realpython.com/read-write-files-python/>

5-6:

- API Requests: <https://realpython.com/python-requests/>
- Web Scraping Guide: <https://realpython.com/beautiful-soup-web-scraper-python/>

7-8:

- Argparse Tutorial

9-10:

- Testing in Python
- Structuring Python Projects