

|   |   |      |                 |
|---|---|------|-----------------|
| Python learning guideline for 30 days,  |   |      |                 |
| Conditions  | Every day complete 1 task, and more and more practice   |      |                 |
|   | Repeat yourself which learn yesterday   |      |                 |
|   | If complete a task, please test properly suitable output with various type of input.  |      |                 |
|   | If every test sucessfully passed, then push in your github.   |      |                 |
|   | Today which you learned, search in google it's best solution.   |      |                 |
|   |   |      |                 |
| Day 1-5: Introduction to Python Basics  |   | Data | Progress status |
| Day-1   | Install Python and a text editor or IDE (Integrated Development Environment) like PyCharm or VS Code.                                     |      |                 |
| Day-2   | Learn about variables, data types (integers, floats, strings, booleans), and basic operations (+, -, *, /, %).                            |      |                 |
| Day-3   | Dive into string manipulation: slicing, concatenation, methods like `upper()`, `lower()`, `split()`.                                      |      |                 |
| Day-4   | Understand control structures: if statements, for and while loops, and the `range()` function.  |      |                 |
| Day-5   | Practice with basic data structures: lists, tuples, dictionaries. Learn about indexing, slicing, and common operations.                   |      |                 |
| Day 6-10: Functions and Modules   |   |      |                 |
| Day-6   | Define functions, understand function arguments, return values, and scope.  |      |                 |
| Day-7   | Explore built-in functions and how to create your own modules.  |      |                 |
| Day-8   | Learn about importing modules, including standard library modules and third-party packages with `pip`.                                    |      |                 |
| Day-9   | Practice using functions and modules in various contexts.   |      |                 |
| Day-10  | Start working on small projects or exercises to reinforce your understanding.   |      |                 |
| Day 11-15: Object-Oriented Programming (OOP)  |   |      |                 |
| Day-11  | Introduction to OOP concepts: classes, objects, attributes, and methods.  |      |                 |
| Day-12  | Understand inheritance, encapsulation, and polymorphism.  |      |                 |
| Day-13  | Dive deeper into OOP with examples and exercises.   |      |                 |
| Day-14  | Learn about special methods (`__init__`, `__str__`, etc.) and class variables vs instance variables.                                      |      |                 |
| Day-15  | Practice implementing classes and solving problems using OOP principles.  |      |                 |
| Day 16-20: Intermediate Topics  |   |      |                 |
| Day-16  | Introduction to file handling: reading from and writing to files.   |      |                 |
| Day-17  | Exception handling: try, except, finally blocks for handling errors gracefully.   |      |                 |
| Day-18  | Explore regular expressions for pattern matching and text processing.   |      |                 |
| Day-19  | Learn about built-in data structures like sets and frozensets.  |      |                 |
| Day-20  | Dive into more advanced topics like decorators and context managers.  |      |                 |
| Day 21-25: Web Development Basics   |   |      |                 |
| Day-21  | Introduction to web development with Flask or Django framework.   |      |                 |
| Day-22  | Learn about routing in Flask/Django and creating basic web pages.   |      |                 |
| Day-23  | Explore HTML templates and rendering dynamic content.   |      |                 |
| Day-24  | Integrate databases (SQLite or PostgreSQL) with Flask/Django for data persistence.  |      |                 |
| Day-25  | Deploy a simple web application locally or on a platform like Heroku.   |      |                 |
| Day 26-30: Final Projects and Review  |   |      |                 |
| Day-26  | Work on a larger project that combines the skills you've learned.   |      |                 |
| Day-27  |   |      |                 |
| Day-28  | Review your code, refactor, and optimize where possible.  |      |                 |
| Day-29  | Explore additional topics or libraries based on your interests (e.g., data visualization with Matplotlib, NumPy for numerical computing). |      |                 |
| Day-30  | Celebrate your progress! Reflect on what you've learned and plan your next steps in Python programming.                                   |      |                 |
|   |   |      |                 |
| Remember, consistency is key. Spend at least an hour each day practicing coding and reinforcing what you've learned. Good luck! |   |      |                 |