12-Hour (2-Day) Python Roadmap: Functions & For Loops Mastery

■■ DAY 1 — "FUNCTIONS MASTERY" (6 HOURS)
Focus: Everything about functions, structure, return values, scopes, parameters, and applying them in real projects (without for-loops).

Hour 1 — Foundation of Functions
- Learn: Function basics, defining, calling, return vs print.
- Practice: Write simple greeting and age calculator functions.

Hour 2 — Parameters & Arguments
- Learn: Positional, keyword, default arguments, returning multiple values.
- Task: Total cost calculator with default tax parameter.

Hour 3 — Variable Scope & Global Keyword
- Learn: Local/global scope, global keyword, variable lifetime.
- Task: Wallet balance system with add_balance() and check_balance().

Hour 4 — Working with Lists & If/Else
- Learn: Passing lists/strings, processing with if/else.
- Task: analyze_scores() function for average, max, and min.

Hour 5 — Nested Functions & Return Logic
- Learn: Functions calling others, returning data.
- Task: Function-based calculator (add, subtract, multiply, divide).

Hour 6 — Real-Use Function Project
- Project: Student Grade Analyzer.
Create functions for user input, total & average, grading, display.

■■ DAY 2 — "FOR LOOP MASTERY" (6 HOURS)
Focus: Learn every concept of for loops, from basics to real GUI-use cases, and finish with a mini project that uses both loops and functions.

Hour 1 — For Loop Basics
- Learn: Syntax, range(), looping through lists and strings.
- Task: Print even numbers from 1–20.

Hour 2 — Looping Collections
- Learn: Iterating lists, tuples, dictionaries with .items(), .keys().
- Task: Print all items in a shopping cart.

Hour 3 — Loop Control
- Learn: break, continue, pass, nested loops.

- Task: Skip printing 5, stop when number = 8.

Hour 4 — Loops with Conditions
- Learn: Combine loops + if, filter data.
- Task: Print only students who passed (>=50).

Hour 5 — Nested Loops & Patterns
- Learn: Generate grids, pattern printing.
- Task: Print triangle or star patterns.

Hour 6 — Final Combination Project
- Project: Student Data Manager.
Use functions + for loops to add/display student data and calculate average.

■ **END RESULT AFTER 2 DAYS:**
- Understand Python functions deeply.
- Master for-loops and their control flow.
- Be ready to apply both in Tkinter GUI apps.