30-Day Python Coding Challenge

Designed for Two Partners

Overview

Goal: Build discipline, accountability, and Python coding skills through one structured problem per day. The difficulty progresses weekly.

Rules and Penalties

Offense	**Penalty**
Miss a day	Pay $5 or do a favor (e.g., chores, coffee run)
Submit late (after 24h)	Write a 200-word reflection on failure and plan to improve
Miss 3 total days	Restart the current week from Day 1

Challenge Schedule

Day	**Challenge**
Week 1: Elevated Basics	
1	Number Analyzer: Determine if a number is even/odd, positive/negative/zero, and prime.
2	Age Comparator: Ask for names and ages of two users, and determine who is older and by how many years.
3	Login System: Hardcode a username and password. User gets 3 tries before system locks.
4	FizzBuzz + Boom: Print 1–100 with "Fizz" (3), "Buzz" (5), "FizzBuzz" (both), and replace any number containing 7 with "Boom".
5	Number Guessing Game: Random number 1–50. User guesses with hints (too high/low). Count attempts.

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Day	Challenge
6	Digit Sum Checker: Sum the digits of an integer and check if divisible by 3 or 9.
7	Pattern Printer: Ask user for n. Print a right-angle triangle and a diamond if n is odd and ≥ 5.
Week 2: Strings, Loops, and Logic	
8	Vowel Counter: Count the number of vowels in a given string.
9	Reverse String: Take input and print it reversed. Try both slicing and loops.
10	Palindrome Checker: Check if a word or phrase is a palindrome (ignore spaces and casing).
11	Multiplication Table: Print the 1–10 multiplication table for a given number.
12	Word Counter: Count the number of words in a full sentence.
13	Dash Replacer: Replace every space in a string with a dash (‘-‘).
14	Capitalizer: Capitalize the first letter of each word in a sentence (like a title).
Week 3: Functions, Lists, Dictionaries	
15	List Summer: Create a list of numbers and return their total sum.
16	Duplicate Remover: Remove duplicates from a list and print the result.
17	Prime Checker (Function): Define a function to check if a number is prime.
18	Letter Counter: Take a word and count how often each letter appears using a dictionary.
19	To-Do List: Build a mini app to add/remove/show tasks using a list.
20	Second Largest: Find the second largest number in a list without using ‘sort()‘.
21	Fibonacci Generator: Write a function to generate the Fibonacci sequence up to n terms.
Week 4: Files, Error Handling, Small Projects	
22	File Reader: Read and print a text file line by line.

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Day	Challenge
23	Number Guess Redux: Improve your guessing game with error handling and a play-again option.
24	Hangman Lite: Build a simple hangman game with one hardcoded word. Track user guesses.
25	Contact Book: Use a dictionary to save names and phone numbers. Include add, delete, search.
26	JSON Save: Save a Python dictionary to a '.json' file and read it back.
27	Timer: Start a timer, stop it with a keypress, and show elapsed time. Use 'time' module.
28	Simple Calculator App: Text-based menu calculator (add/subtract/multiply/divide). Use functions.
29	Password Generator: Create random passwords with a mix of characters. Let user set length.
30	Final Project (Choose One): • Quiz game • Expense tracker • Flashcard app • Journal logger