15-DAY PYTHON PRACTICE PROGRAM ROADMAP

🟢 DAY 1 – Basics, Variables, Input/Output

1. Print “Hello World”
2. Print your name, age, city
3. Add two numbers (user input)
4. Swap two numbers (with temp variable)
5. Swap two numbers (without temp variable)
6. Calculate area of circle
7. Calculate simple interest
8. Convert Celsius to Fahrenheit
9. Check data type of variable
10. Take name and greet user

🎯 Focus: syntax, print, input, type()

🟢 DAY 2 – Operators & Conditional Statements

1. Check number is positive or negative
2. Check number is even or odd
3. Find largest of 2 numbers
4. Find largest of 3 numbers
5. Check leap year
6. Check voting eligibility
7. Simple calculator using if-else
8. Check pass/fail based on marks
9. Check character is vowel or consonant
10. Find grade based on percentage

🎯 Focus: if, elif, else

🟢 DAY 3 – Loops (for, while)

1. Print numbers from 1 to N
2. Print even numbers from 1 to N
3. Print odd numbers from 1 to N
4. Sum of first N numbers
5. Factorial of a number

6. Reverse a number
7. Count digits in a number
8. Multiplication table
9. Fibonacci series
10. Check prime number

🎯 Focus: loop logic

🟢 DAY 4 – Strings

1. Find length of string
2. Reverse a string
3. Check palindrome string
4. Count vowels in string
5. Count consonants in string
6. Convert string to uppercase
7. Convert string to lowercase
8. Remove spaces from string
9. Count words in string
10. Check substring present or not

🎯 Focus: string methods

🟢 DAY 5 – Lists

1. Create a list and print elements
2. Find sum of list elements
3. Find largest element in list
4. Find smallest element in list
5. Count even numbers in list
6. Reverse a list
7. Sort list (ascending)
8. Sort list (descending)
9. Remove duplicates from list
10. Find second largest element

🎯 Focus: list operations

🟢 DAY 6 – Tuples & Sets

1. Create tuple and access elements

2. Convert tuple to list
3. Find length of tuple
4. Create set and print elements
5. Add element to set
6. Remove element from set
7. Union of two sets
8. Intersection of two sets
9. Difference of sets
10. Remove duplicates using set

🎯 Focus: immutable vs mutable

🟢 DAY 7 – Dictionaries

1. Create dictionary
2. Access dictionary values
3. Add new key-value pair
4. Update dictionary value
5. Delete key from dictionary
6. Iterate dictionary keys
7. Iterate dictionary values
8. Count frequency of characters
9. Count frequency of words
10. Student marks dictionary program

🎯 Focus: key-value logic

🟢 DAY 8 – Functions

1. Function to add two numbers
2. Function to find factorial
3. Function to check prime
4. Function to reverse string
5. Function with return value
6. Function without return value
7. Function with default argument
8. Function with keyword arguments
9. Recursive factorial function
10. Recursive Fibonacci function

🎯 Focus: reusability

🟢 DAY 9 – File Handling

1. Create a file and write data
2. Read file content
3. Append data to file
4. Count lines in file
5. Count words in file
6. Count characters in file
7. Search word in file
8. Copy content from one file to another
9. Read file line by line
10. Delete file using os module

🎯 Focus: real-world usage

🟢 DAY 10 – Exception Handling

1. Handle ZeroDivisionError
2. Handle ValueError
3. Try-except-else example
4. Try-except-finally example
5. Multiple except blocks
6. Raise custom exception
7. Handle file not found error
8. Input validation using exception
9. Calculator with exception handling
10. Custom error message program

🎯 Focus: safe code

🟢 DAY 11 – OOP (Classes & Objects)

1. Create class and object
2. Use constructor (**init**)
3. Class with multiple methods
4. Student class program
5. Inheritance example
6. Method overriding
7. Use of super()
8. Encapsulation example
9. Private variable example
10. Bank account OOP program

🎯 Focus: interview-favorite topic

🟢 DAY 12 – Advanced Python

1. Lambda function example
2. Map function example
3. Filter function example
4. Reduce function example
5. List comprehension
6. Dictionary comprehension
7. Generator function
8. Iterator example
9. Decorator example
10. Shallow vs deep copy

🎯 Focus: advanced concepts

🟢 DAY 13 – Modules & Libraries

1. Import math module
2. Use random module
3. Use datetime module
4. Create custom module
5. Import user-defined module
6. Use os module
7. Use sys module
8. Virtual environment basics
9. pip install package
10. Small automation script

🎯 Focus: real development

🟢 DAY 14 – Data Structures & Algorithms

1. Linear search
2. Binary search
3. Bubble sort
4. Selection sort
5. Insertion sort
6. Find missing number in array
7. Remove duplicates from array

8. Count frequency of elements
9. Reverse array
10. Two sum problem

🎯 Focus: coding rounds

🟢 DAY 15 – Interview & Project Level

1. Number palindrome
2. String anagram check
3. Armstrong number
4. Pattern printing (star)
5. Pattern printing (numbers)
6. Mini project: Calculator
7. Mini project: Student management system
8. Mini project: File-based login system
9. Mock interview coding problem
10. Optimize previous solutions

🎯 Focus: confidence + speed
