

DS Programming Questions			
Day	Questions	Understood	Implem
1 Intro to Programming	1. Write a Python program to calculate the factorial of a number.		
	2. Implement a Python program to find the sum of even numbers in a list.		
	3. Create a Python function to reverse a given string.		
	4. Write a program to check if a number is prime.		
	5. Develop a Python program to solve a basic math problem, e.g., finding the area of a rectangle.		
2 Variables, Data Types	1. Write a Python program to convert temperature from Fahrenheit to Celsius.		
	2. Implement a program to calculate the area of a circle.		
	3. Create a Python function to check if a given number is even or odd.		
	4. Write a program to find the square root of a number.		
	5. Develop a Python program to calculate the simple interest.		
3 Control Flow	1. Write a Python program to check if a year is a leap year.		
	2. Implement a program to find the maximum of three numbers.		
	3. Create a Python function to calculate the sum of natural numbers up to N.		
	4. Write a program to print the Fibonacci sequence up to N terms.		
	5. Develop a Python program to check if a number is a palindrome.		
4 Collections	1. Write a Python program to count the number of vowels in a string.		
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6 Functions	1. Implement a Python program to calculate the exponential of a number using a user-defined function.		
	2. Write a program to find the mean and median of a list of numbers using functions.		
	3. Create a Python function to check if a given string is a valid palindrome (ignoring spaces and punctuation).		
	4. Write a program to generate a Fibonacci sequence using a recursive function.		
	5. Develop a Python program to find the greatest common divisor (GCD) of two numbers using a recursive function.		
7 Scope of Variables and Recursion	1. Write a Python program to demonstrate the scope of variables in different functions.		
	2. Implement a program to calculate the sum of natural numbers using recursion.		
	3. Create a recursive function to find the factorial of a number.		
	4. Write a program to solve the Tower of Hanoi puzzle using recursion.		
	5. Develop a Python program to compute the nth Fibonacci number using recursion.		
8 Object-Oriented Programming (OOP) Basics	1. Implement a Python class representing a simple bank account with deposit and withdrawal methods.		
	2. Write a Python program to create an instance of a car object with attributes like make, model, and year.		
	3. Create a Python class for a basic calculator that can add, subtract, multiply, and divide.		
	4. Write a program to create a Python class representing a book with attributes like title and author.		
	5. Develop a Python program to demonstrate the concept of encapsulation using a class.		
9 OOP Concepts (Constructors, Class)	1. Implement a Python class representing a student with a constructor and methods for setting and getting student details.		
	2. Write a Python program to create a class diagram for a simple online shopping system.		
	3. Create a Python class for a basic shape with constructor and methods to calculate area and perimeter.		
	4. Develop a Python program that demonstrates the concept of inheritance with multiple classes.		
	5. Write a program to create a Python class representing a basic employee with attributes like name, id, and salary.		
10 More OOP (Statics, Relationship, Inheritance, Abstract Classes)	1. Implement a Python class with a static variable to keep track of the number of instances created.		
	2. Write a Python program to create a class relationship diagram for a library system.		
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11 Exception Handling	1. Write a Python program that demonstrates the use of a try-except block to handle a division by zero error.		
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15 Queues	4. Develop a program that simulates a browser's forward and backward navigation using two stacks.		
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16 Binary Trees	2. Implement a program to simulate a printing queue with priority.		
	3. Create a Python class for a queue ADT and implement it using a linked list.		
	4. Develop a program that simulates a supermarket queue with customers entering and leaving.		
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	1. Implement a Python class for a binary tree and perform a depth-first traversal (preorder, inorder, postorder).		
17 Binary Trees (Continued)	2. Write a program to find the height of a binary tree.		
	3. Create a Python function to check if a binary tree is a binary search tree.		
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