C

1. Variables and Data Types

Problem Statement: Variable Declaration and Printing

Write a program that declares variables of different data types (int, float, char) and assigns values to them. Print the values and their data types using printf().

2. Constants and Addresses

Problem Statement: Constant Declaration and Address Printing

Declare a constant value and a variable. Print the address of the variable using & operator and explain the difference between a constant and a variable.

3. Input and Output (scanf(), printf())

Problem Statement: User Input and Output

Write a program that takes user input using scanf() for two integers and displays their sum using printf().

4. Arrays

Problem Statement: Array Manipulation

Create an array of integers, populate it with values, and display the values using a loop and printf().

5. Strings (char arrays)

Problem Statement: String Input and Output

Write a program that takes user input for a string (char array) and displays it using printf().

6. Operators

Problem Statement: Arithmetic Operations

Implement a program that takes two numbers as input and performs basic arithmetic operations (addition, subtraction, multiplication, division) on them.

7. Control Flow (Decisions)

Problem Statement: Conditional Statements

Write a program that takes a number as input and determines whether it's positive, negative, or zero using if-else statements.

8. Control Flow (Loops)

Problem Statement: Loop Implementation

Create a program that uses a loop to print the numbers from 1 to 10.

9. Functions, Scope

Problem Statement: Function Definition and Usage

Define a function that calculates the square of a number and use it in the main program to calculate and print the squares of several numbers.

10. Power

Problem Statement: Power Calculation

Write a program that calculates the power of a number using a loop. Take base and exponent as input from the user.

11. Sum of Input

Problem Statement: Sum of Input Numbers

Develop a program that takes a series of numbers as input from the user and calculates their sum.

12. Divisors of a Number

Problem Statement: Divisors Calculation

Write a program that takes a number as input and calculates and prints its divisors.

13. Min and Max

Problem Statement: Minimum and Maximum of Numbers

Create a program that takes multiple numbers as input and calculates and prints their minimum and maximum values.

14. GCD and LCM

Problem Statement: Greatest Common Divisor (GCD) and Least Common Multiple (LCM)

Implement a program that takes two numbers as input and calculates their GCD and LCM.

15. 1D Array: Sum and Product

Problem Statement: Array Sum and Product

Write a program that takes an array of integers as input and calculates and prints their sum and product.

16. 2D Array: print [row-row, column-column]

Problem Statement: 2D Array Element Printing

Develop a program that uses a 2D array and prints the element located at the intersection of a given row and column.

17. 2D Array: Rain Fall

Problem Statement: Rainfall Calculation

Create a program that uses a 2D array to store monthly rainfall data for a year. Calculate and print the average rainfall for each month.

18. Strings: Read a string

Problem Statement: String Input

Write a program that reads a string (sentence) from the user and prints it.

19. Strings: Copy String to String

Problem Statement: String Copying

Develop a program that takes two strings as input and copies the content of one string to another.