

Problems set

- **BASICS OF C PROGRAMMING**

- Write a program to print "Hello, World!".
- Write a program to take two integers as input and print their sum.
- Write a program to find the area of a rectangle using its length and breadth.
- Write a program to swap two numbers without using a temporary variable.
- Write a program to check if a given number is even or odd.

- **CONTROL STATEMENTS**

- Write a program to find the largest of three numbers using if-else.
- Write a program to check if a number is positive, negative, or zero.
- Write a program to calculate the factorial of a number using a for loop.
- Write a program to print the first n natural numbers using a while loop.
- Write a program to display the multiplication table of a given number.

- **ARRAYS**

- Write a program to store 5 integers in an array and print them.
- Write a program to find the largest and smallest elements in an array.
- Write a program to calculate the sum and average of elements in an array.
- Write a program to reverse an array.
- Write a program to merge two arrays into a single array.

- **STRINGS**

- Write a program to take a string as input and display its length.
- Write a program to concatenate two strings without using library functions.
- Write a program to check if a string is a palindrome.
- Write a program to count the number of vowels and consonants in a string.
- Write a program to find the frequency of a character in a string.

- **FUNCTIONS**

- Write a function to find the GCD of two numbers.
- Write a function to calculate the power of a number.
- Write a recursive function to calculate the factorial of a number.

- Write a function to check if a number is prime.
- Write a function to find the sum of digits of a number.

• **POINTERS**

- Write a program to demonstrate pointer arithmetic.
- Write a program to swap two numbers using pointers.
- Write a program to find the length of a string using a pointer.
- Write a program to reverse an array using pointers.
- Write a program to dynamically allocate memory for an array using malloc.

• **STRUCTURES**

- Write a program to define a structure for a student (name, roll number, marks) and display the details.
- Write a program to calculate the total and average marks of 5 students using an array of structures.
- Write a program to store and display information of 5 employees (name, age, salary).
- Write a program to demonstrate passing structures to functions.
- Write a program to store a date (day, month, year) and display it in "dd-mm-yyyy" format.

• **FILE HANDLING**

- Write a program to create a file and write "Hello, World!" into it.
- Write a program to read the contents of a file and display it on the screen.
- Write a program to count the number of words in a file.
- Write a program to append text to an existing file.
- Write a program to copy the contents of one file to another.

• **SORTING AND SEARCHING**

- Write a program to implement the Bubble Sort algorithm.
- Write a program to implement the Selection Sort algorithm.
- Write a program to implement Linear Search.
- Write a program to implement Binary Search.
- Write a program to count the frequency of each element in an array.

• **ADVANCED ALGORITHMS**

- Write a program to generate the Fibonacci series up to n terms.
- Write a program to find the sum of a geometric series.
- Write a program to solve the Tower of Hanoi problem.
- Write a program to find all prime numbers between two given numbers.
- Write a program to implement the Sieve of Eratosthenes.