

Lab Experiment- C Language

Objective:

- To gain practical experience with advanced pointer concepts in C, including pointer arithmetic, pointers and arrays, and function pointers.

Materials needed:

- Computer with a C compiler (e.g., GCC)
- Text editor or IDE

Part 0: Quick Revision Exercises

Use this template code for your work: [template code Part0.c](#)

Task 0.1: Basic Syntax and Data Types

- Write a program that declares variables of different data types (int, float, double, char) and prints their sizes using sizeof operator.
- Demonstrate type casting between these data types.

Task 0.2 Operators and Expressions

- Create a program that takes two numbers as input and performs all arithmetic operations (+, -, *, /, %) on them.
- Implement a simple calculator that uses the switch statement to perform operations based on user input.

Task 0.3 Control Structures

- Write a program that prints the Fibonacci sequence up to n terms (n should be user input) using a for loop.
- Implement a guessing game where the computer generates a random number, and the user tries to guess it. Use if-else statements to provide "higher" or "lower" hints.

Task 0.4 Functions

- Create a function that checks if a number is prime. Use this function to print all prime numbers between 1 and 100.

- Implement a recursive function to calculate the factorial of a number.

Task 0.5 Arrays and Strings

- Write a program that reverses a string without using any library functions.
- Implement a function that finds the second largest element in an array.