

C Programming

Course Description

1. Introduction to C Programming:

- What is C Language
- Why C Language
- Features in C Language

2. Setting up and Installing Software:

- Prerequisite in C Language
- Installation of gcc

3. Data Type, Constants & Variables:

- What is Data Types in C Language with practical
- Integers, long and short in C Language with practical
- Integers, signed and unsigned in C Language with practical
- Chars, signed and unsigned in C Language with practical
- Floats and Doubles in C Language with practical
- Constants in C with practical
- Variables in C with practical
- Keywords in C with practical
- How to get input from user with practical
- How to display output to user with practical

4. Operators & Enums:

- Operations On Bits in C Language with practical
- Bitwise Operators with practical
- One's Complement Operator with practical
- Right Shift Operator with practical
- Left Shift Operator with practical
- Bitwise AND Operator with practical
- Bitwise OR Operator with practical
- Bitwise XOR Operator with practical



- Enumerated Data Type with practical
- Uses of Enumerated Data Type with practical

5. Control Statement:

- IF-Else Statement in C Language with practical
- for Loop in C Language with practical
- While Loop in C Language with practical
- Do-While Loop in C Language with practical
- Break in C Language with practical
- Continue in C Language with practical
- Switch in C Language with practical

6. Function:

- What is a Function in C Language with practical
- Passing Values between Functions in C Language with practical
- Call by Value in C Language with practical
- Call by Reference in C Language with practical

7. Pointers:

- An Introduction to Pointers
- Pointer Notation in C Language
- Back to Function Calls in C Language with practical
- Recursion in C Language with practical

8. Preprocessor:

- The C Preprocessor in C Language
- Features of C Preprocessor
- Macro Expansion in C Language
- Macros with Arguments with practical
- Macros versus Functions with practical
- File Inclusion in C Language with practical
- #if and #elif Directives with practical
- Miscellaneous Directives in C Language



- #undef Directive with practical
- #pragma Directive with practical

9. Arrays:

- What are Arrays in C Language
- A Simple Program Using Array
- How to Initialize Array in C Language with practical
- Passing Array Elements in C Language to a Function with practical
- Pointers and Arrays in C Language with practical
- Passing an Entire Array to a Function in C Language with practical
- Two Dimensional Arrays in C Language with practical
- Initializing a 2-Dimensional Array with practical
- Pointers and 2-Dimensional Arrays with practical
- Pointer to an Array with practical
- Passing 2-D array to a Function with practical
- Array of Pointers with practical
- Three Dimensional Array with practical
- 10.Strings:
- What are Strings in C Language
- How to get length of a string in C Language using strlen() with practical
- How to copy a string in C Language using strcpy() with practical
- How to concatenate a string in C Language using strcat() with practical
- How to compare two string in C Language using strcmp() with practical

11. Structure and Union:

- What is Structure in C Language
- Why Use Structures in C Language
- Declaring a Structure in C Language with practical
- Accessing Structure Elements in C Language with practical
- What is Union in C language
- Why Use Union in C language
- How Structure Elements are Stored with practical
- Difference with structure and union
- Additional Features of Structures with practical
- Uses of Structures and union with practical



12. File Operations:

- File Input/output in C Language with practical
- File Operations in C Language with practical
- Opening a File in C Language with practical
- Reading from a File in C Language with practical
- Closing the File in C Language with practical
- Counting Characters, Tabs, Spaces, with practical
- A File-copy Program in C Language
- Writing to a File in C Language with practical
- File Opening Modes
- String (line) I/O in Files