Sivani Academy

C and C++ Programming Training Coimbatore

Curriculum

C AND C++ PROGRAMMING TRAINING SYLLABUS

C Programming Topics:

1. Introduction to C Programming

✔ Overview of C language

✔ Features of C

✔ Structure of a C program

✔ Compilation and Execution process

2. Basics of C Programming

✔ Variables and Data Types

✔ Constants and Literals

✔ Operators and Expressions

✔ Input and Output functions

3. Control Flow Statements

✔ Conditional Statements (if, else if, else)

✔ Loops (while, for, do-while)

✔ Switch case statements

4. Functions in C

✔ Function declaration and definition

✔ Passing arguments to functions

✔ Return statement

✔ Recursive functions

5. Arrays and Strings

✔ Array declaration and initialization

✔ Multi-dimensional arrays

✔ String manipulation functions

✔ String handling in C

6. Pointers and Memory Management

✔ Introduction to pointers

✔ Pointers and arrays

✔ Dynamic memory allocation (malloc, calloc, free)

7. Structures and Unions

✔ Defining structures

✔ Nesting of structures

✔ Introduction to unions

✔ Enumerations

8. File Handling in C

✔ File operations (open, close, read, write)

✔ Sequential and Random file access

✔ Error handling in file operations

C++ PROGRAMMING TOPICS:

1. Introduction to C++

✔ Evolution of C++

✔ Features of C++

✔ Object-Oriented Programming (OOP) concepts

2. Classes and Objects

✔ Class declaration and definition

✔ Objects and instantiation

✔ Constructors and Destructors

✔ Member functions and data members

3. Inheritance in C++

✔ Types of inheritance

✔ Base and derived classes

✔ Access specifiers (public, private, protected)

✔ Function overloading and overriding

4. Polymorphism and Function Overloading

✔ Introduction to polymorphism

✔ Operator overloading

✔ Function overloading in C++

5. Encapsulation and Abstraction

✔ Encapsulation and data hiding

✔ Abstract classes and pure virtual functions

✔ Friend functions and classes

6. Templates and Standard Template Library (STL)

✔ Function templates

✔ Class templates

✔ Introduction to STL containers and algorithms

7. Exception Handling

✔ Handling runtime errors

- ✔ try, catch, throw mechanism
- ✔ Standard exceptions

8. File Handling in C++

- ✔ File streams (ifstream, ofstream)
- ✔ Reading and writing to files
- ✔ Binary file operations