

C & C++

Training Overview

: To familiarize the trainee with basic concept of computer programming and developer tools. To present the syntax and semantics of the “C” language as well as data types offered by the language. To allow the trainee to write their own programs using standard language infrastructure regardless of the hardware or software platform.

Pre-Requisites

: Working Professionals and anyone who has basic Computer Knowledge and wants to enter in IT Industry.

Participant Fee

: 8000/-

Training Name

: C & C++

Description

: The course fully covers the basics programming in the “C” programming language and demonstrates fundamental programming techniques, custom and vocabulary including the most common library functions and the usage of the processors.

Weekend Batch

: Available

Training Time

: 2 hrs per day (Mon-Fri), 4 hrs per day (Sat & Sun), 6 hrs Sunday

Duration

: 60hrs

Venue

: No: 96 G.S.T Road Guduvanchery – 603202

Training Content:

Introduction to "C" Language

- Data types
- Indentation
- If else
- Operators
- The “WHILE” Loop
- The “For” Loop
- Nested Loop Statements
- The “BREAK” & “CONTINUE” Statement
- Switch case default & break
- Bitwise operators

Functions

- Introduction to Functions
- Need for Functions
- Standard & User defined Functions
- What is header file
- How to create our own header file
- Difference between source file & exe file
- How to create exe file
- Defining & Calling Functions
- Storage Classes

- Automatic Storage Classes
- Register Storage Classes
- Static Storage Classes
- External Storage Classes
- Pass by Value, pass by Reference
- Return by value & return by address
- Recursive Functions

Pointers

- Memory concept
- Pointers to variable
- Pointers to pointers
- Pointers with operation

Arrays

- Introduction to Arrays
- Need for Arrays
- Arrays with pointers
- Arrays with functions
- Types of Arrays
- One Dimensional Arrays
- Two Dimensional Arrays
- Multi Dimensional Arrays

Strings

- Char pointers
- Char array (String)
- Declaring & Initializing String Variables
- Strings with pointers
- Strings with functions
- String Functions
- Creation of our own string.h
- Array of Strings
- #define (preprocessing work)

Structures, Unions, Enum and typedef

- Enum and typedef
- Introduction to Structures
- Defining Structures
- Struct with pointers, arrays, strings and functions
- Array, Strings as Structures Members
- Containership
- Union, Different between Structure & Union

Graphics Programming

- In text Mode
- In Graphics Mode

File Operations

- Introduction to files
- Types of Files
- File Pointers
- Opening & Closing Files
- Modifying & deleting Files
- Interacting with
 - text files (ex: .txt, .c, .cpp)
 - non text files (ex: .dat, .mpg, .avi, .mp3)
 - data base files
- Creating database with file operation
- Command Line Arguments

Dynamic Memory Allocation (DS)

- Purpose of dynamic memory allocation
- Malloc , calloc ,realloc and free
- Sorting
- Recursion
- Lists
 - Single linked lists
 - Double linked lists
 - Circular linked lists
- Stacks
- Queues
- Adding 2 lists
- Inserting a node in required position
- Deleting a node from required position

Introduction to "C++" Programming

C++-programming

- Oops
- Function Prototypes
- Comments
- Typecasting
- Void Pointers
- The :: operator
- The Const Qualifier
- Reference variables

Functions

- Function Prototypes
- Function Overloading
- Default Arguments in Functions

- Call by value, address & reference
- Return by value, by address & by reference
- Inline Functions

Classes in C++

- Member function
- Function Definition Outside The Class
- Classes and Constructors
- Destructors
- Copy Constructor
- The this Pointer
- New and delete Operators
- Using new and delete
- Malloc () / free () versus new/delete
- Classes, Objects and Memory
- Structures vs. Classes

Miscellaneous Class Issues

- Static Class Data
- Static Member Functions
- Data Conversion
- Friend functions & friend Classes
- Data Conversion between Objects of Different Classes

Overloading operators

- Introduction
- Overloading assignment operator
- Overloading ++, --, +, -, *, /, <, > ?. & Logical operators
- Overloading operators between different objects
- Overloading << and >> (stream operators)

Inheritance

- Constructors in Inheritance
- Private Inheritance
- Protected Inheritance
- Functions That Are Not inherited
- Virtual Function
- Pure virtual functions
- Virtual Functions in Derived Classes
- Virtual Functions and Constructors
- Destructors and virtual Destructors
- Virtual Base Classes
- Abstract class
- Abstract base class

Advanced Features

- Classes Within Classes

- Friend Functions
- Friend Classes
- Overloading << and >>

Input / Output In C++ (File operations)

- Manipulators
- File I/O with Streams
- Opening and closing files
- Creating database with file Operation
- Binary I/O
- Elementary Database Management
- Interacting with
 - Text files (ex: .txt, .c, .cpp)
 - Non-text files (ex: .dat, .mpg, .avi, .mp3)
- Creating database with file operation

New Advanced Features

- Templates
- Function templates
- Class templates
- Exception handling
- Namespaces
- RTTI (Runtime Type Information)
- STL (Standard Template library)
- Dynamic cast operator
- typeid operator
- typeid class

Data Structures with C++

- Sorting
- Recursion
- Lists
 - Single linked lists
 - Double linked lists
 - Circular linked lists
- Traversing of linked lists
- Stacks
- Queues
- Adding 2 lists
- Inserting a node in required position
- Deleting a node from required position