

# RedBush Technologies

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## C++ Training

### C++ Training Course Duration

- Normal Track 45 Working days, daily one and half hours.
- Fast Track 35 Working days, daily two hours.

### C++ Training Course Overview

#### Basic In C++

- Programming Methods
- Object Oriented Programming
- Introduction to C++
- Variables, Datatypes, Operators
- Reference Operator
  
- Scope (: Resolution Operators
- New Structure of a C++ Program

#### Control Structures

- Conditional – if, if...else, Nested if...else, Switch...Case
- Loops – While, do...While, For, Nested Loops
- Jump – Goto, Continue & Break

#### Functions

- Introduction a Function
- Defening a Function
- Prototypes
- Actual and Formal Arguments
- Parameter Passing Techniques
- Call by Value
- Call by Reference
- Call by Pointer
- Default Arguments
- Function Overloading
- Inline Functions

#### Oops Concepts

- Encapsulation
- Abstraction
- Polymorphism
- Static Binding
- Dynamic Binding
- Inheritance
- Message Passing
- Class
- Object

## **Classes and Objects**

- Class Declaration
- Access Member and Member Functions
- Creating Objects
- Differences between Class and Structure
- Objects as arguments
- Returning Objects
- Static Members
- Friend Functions
- Friend Classes

## **Constructors and Destructors**

- Introduction
- Defining Constructor
- Comparing Constructor Member Function
- Default Constructor
- Argument Constructor
- Copy Constructor
- Constructor Overloading
- Default Argument in Constructor
- Destructor
- Defining Destructor

## **Operator Overloading**

- Need of Overloading
- Defining Operator Overloaded Function
- Operator Overloading Rules
- Overloading Unary Operators
- Overloading Unary Operators using Friend
- Overloading Binary Operators
- Overloading Binary Operators using Friend
- Overloading Other Operators

## **Inheritance**

- Introduction
- Types of Inheritance
- Single Level Inheritance
- Multilevel Inheritance
- Multiple Inheritance
- Hybrid Inheritance
- Hierarchical Inheritance
- Base Class
- Derived Class
- Inheritance Scope
- Protected Members
- Virtual Base Class
- Virtual Destructors

## **Advanced Class Concepts**

- Container Class & Contained Class
- Local Classes
- Inheritance v/s Containership

## **Polymorphism and Virtual Functions**

- Type Polymorphism
- Dynamic Binding
- Function Overriding
- Difference between Function Overloading and Overriding
- Need of Virtual Functions
- Pure Virtual Functions

### Templates

- Need of Template
- Defining Template
- Function Templates
- Class Templates

### Exception Handling

- What is Exception?
- Need of Handling Exceptions
- Types Of Exceptions
- Exception Handling Mechanism

### Streams

- Hierarchy of I/O Streams
- Istream Class Functions
- Ostream Class Functions
- IOS Class Functions
- Manipulators

### Files

- Hierarchy of File Streams
- Opening a File
- File Opening Modes
- Sequential Access Files
- Random Access Files
- Command Line Arguments

### Graphics

- Introduction to Graphic
- Initializing Graphic
- Graphic Drivers & Modes
- Graphic Functions

### Data Structures

- Introduction
- Stacks using Arrays
- Stacks using Linked List
- Queues using Arrays
- Queues using Linked List
- Circular Queues
- De-Queues
- Single Linked List
- Circular Linked List
- Doubly Linked List
- Infix, Prefix and Postfix Expressions
- Trees
- Binary Trees

- Binary Search Trees
- Directed Graphs, Undirected Graphs
- Searching Methods – BFS, DFS
- Searching Techniques – Linear, Binary
- Sorting Techniques – Bubble, Insertion
- Selection, Quick, Heap and Merge