

C++ Programming

Duration: 40 Hours

Prerequisites

- Knowledge of C Programming.

Course Contents

1. Introduction to OOPs

- Procedure-Oriented Programming
- Drawbacks of Procedure Programming
- OOPs Concepts
- Abstraction
- Inheritance
- Polymorphism
- Data Binding
- Encapsulation

2. Beginning with C++

- History of C++
- Advantages of C++ over C
- Input and Output Statements
- Compiling and Linking

3. Fundamentals of C++

- Data types
- Operators
- Control Structure
- Functions
- Inline Function
- Function Overloading

4. Fundamentals of Classes

- Defining the Class in C++
- C++ Objects
- Data members & Member Functions
- Constructors in C++
- Types of constructor
- Destructor

5. Operator Overloading

- Defining Operator Overloading
- Rules for operator overloading
- Friend function
- Overloading Increment Operator:
- Overloading decrement Operator
- Overloading [] Operator
- Overloading Assignment Operator

6. Inheritance

- Inheritance
- Advantages of Inheritance
- Base & Derived Classes
- Visibility Mode
- Types of Inheritance
- Polymorphism
- Overriding
- Virtual Functions
- Rules for Virtual Functions
- Pure Virtual Functions
- Abstract class
- Virtual destructor

7. I/O Stream Library

- C++ Streams
- I/O Stream Library
- Unformatted I/O Operations
- Formatted Console I/O Operations
- File
- Classes for file stream operation
- Opening a File
- File modes
- Closing a File
- File Pointer and their Manipulators
- Input and Output Operation
- Reading and Writing Class Objects
- Error handling during file Operations

8. Advanced Topics

- Template
- Template function
- Template class
- Exception handling

9. Standard Template Library

- Introduction
 - Standard Template library
 - STL components
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