

C Language

INTRODUCTION TO C

- History of C
- Features of C
- Importance of C
- About Procedural Language
- Role of Compiler
- Role of Interpreter
- Compiling & Linking

AN OVERVIEW OF C AND BUZZWORDS

- Data Type, Variable
- Operators
- Control Statement
- Preprocessor Directives

INPUT AND OUTPUT OPERATORS

- Reading/Writing Characters
- Formatted input/output Function

DECISION MAKING AND LOOPING

- The IF....ELSE Statement
- Nesting of IF....ELSE Statements
- The Switch Statement
- The While Statement
- The DO and FOR Statement

ARRAYS AND STRING

- One/Two/Multi Dimensional Arrays
- Dynamic Arrays
- Reading String from Terminal
- Writing String to Screen
- String Handling Functions
- Table of String

FUNCTION

- Defining Function
- Benefit of Function
- Nesting of Functions
- Recursion
- Variable Storage Classes
- Variable arguments Function

POINTERS

- Understanding Pointers
- Pointer Expressions
- Pointer and Arrays
- Pointers and Character String
- Pointers to Functions
- Pointers and Structures

STRUCTURES AND UNIONS

- Defining a Structure
- Benefit of Structure
- Size of Structure
- Arrays of Structures
- Structures and Functions
- Defining Unions

DYNAMIC MEMORY ALLOCATION AND LINKED LISTS,STACK & QUEUE

- Introduction to Dynamic Memory Allocation
- Malloc, Calloc, Realloc
- Concepts of Linked Lists
- Creating a Linked Lists
- Inserting/Deleting an item
- Application of Linked Lists

FILE MANAGEMENT IN C

- Introduction to File Management
- Opening/Closing a File
- Input/Output operations on Files
- Error Handling During I/O Operations
- Command Line Arguments

THE PREPROCESSOR

- Macro Substitution
- File Inclusion
- Compiler Control Directives

C++ Language

INTRODUCTION TO C++

- Understanding Requirement : Why C++
- C vs C++
- Advantage of OOP
- Software and Hardware for C++
- Compiling and Linking

AN OVERVIEW OF C++ AND BUZZWORDS

- Data Types, Variables and Arrays
- Operators
- Control Statements

FUNCTIONS

- Function Prototyping
- Call/Return by Reference
- Function overloading
- Friend and Virtual Functions

CLASSES AND OBJECTS

- Defining Member Functions
- Arrays within a class
- Memory allocation for Objects
- Pointers to Members

CONSTRUCTORS AND DESTRUCTORS

- Parameterized/Copy/Dynamic Constructors
- Multiple Constructors in a Class
- Dynamic initialization of objects
- Constructing Two-dimensional Arrays
- Destructors

OPERATOR OVERLOADING

- Overloading Unary/Binary operators
- Manipulation of String Using Operators
- Rules for Overloading Operators
- Type Conversions

INHERITANCE

- Defining Derived Classes
- Constructors in Derived Classes
- Single/Multiple/Multilevel/Hierarchical/Hybrid Inheritance
- Virtual Base Classes
- Abstract Classes
- Member Classes : Nesting of Classes

POINTERS, VIRTUAL FUNCTIONS AND POLYMORPHISM

- Pointers to Objects
- This Pointer
- Pointers to Derived Classes
- Virtual Functions

MANAGING CONSOLE I/O OPERATIONS

- C++ Stream Classes
- Unformatted/Formatted I/O Operations

FILE MANAGEMENT IN C++

- Introduction to File Management
- Opening/Closing a File
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EXCEPTION HANDLING

- Basics of Exception Handling
- Exception Handling/Throwing/Catching Mechanism
- Rethrowing an Exception

TEMPLATE

- Introduction to Template
- Class Template
- Function Template
- Overloading Of Template Function
- New Features Of ANSI C++ Standard