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Curriculum Of C & C++

C

MODULE 1: OVERVIEW OF C
- C History and Standardization
- Importance of C
- Pre- processor and Header Files
- Programming Style
- Basic Structure of C Program

MODULE 2: CONSTANTS, VARIABLES & DATA Types
- Character Set, C Tokens
- Keywords & Identifiers
- Data types in C
- Constants
- Variable Names
- Overflow & Underflow of Data

MODULE 3: OPERATORS & EXPRESSIONS
- Arithmetic operators
- Relational Operators
- Logical operators
- Increment and decrement Operators
- Bitwise Operators
- Assignment operators
- Conditional Operators
- Special Operators
- Operator Precedence
- Operator Associativity

MODULE 4: CONTROL STRUCTURES : BRANCHING
- Decision Making with “if statement”
- If ….else statement
- Nested if …else statement
- Else ..if ladder
- Switch statement
- Go to statement
- The ?; Operator

MODULE 4: CONTROL STRUCTURES: LOOPING
- The White Statement
- Do statement
- For Statement
- Jumps in LOOP

MODULE 5: ARRAYS & STRINGS
- Declaration of an Array
- Initialization of Arrays
- Types of ARRAYS
- 1D, 2 D, Multi D
- Compile Time Arrays and Run time Arrays
- Limitation of an Array
- Declaration of strings
- Initialization of Strings
- Operations Performed on Strings
- String Handling Functions
- 2- D Strings

MODULE 6: HANDLING POINTERS
- Understanding Basics of Pointers
- Rules for Pointers
- Pointer Declaration
- Accessing a Variable through its Pointer
- Pointers and Arrays
- Pointers and addresses
- Initialization of Pointers
- Pointer To Pointer
- Pointer Expressions

- Pointer Increments and Scale
- Factor Pointers and Arrays
- Pointers and Strings
- Arrays of Pointers in Strings
- Pointers as Function
- Arguments
- Function Returning Pointers
- Null Pointers in C

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MODULE 7: FUNCTIONS
- Why Functions
- Type of Functions
- A multi- functional Program
- Return Values & their types
- Call by value and call by reference
- Arguments and Return Types
- Nesting of Functions
- Recursion

MODULE 8: SCOPE/VISIBILITY OF VARIABLES
- Auto storage class
- Register storage Class
- Static Storage class
- Extern Storage class
- StructuresUnions
- Defining a Structure
- Why a structure is used?
- Structure Initialization
- Arrays with in Structures
- Arrays of Structures
- Structures within Structures
- Passing Structures to Functions
- Unions & its Properties
- Access Union Member

MODULE 9: DYNAMIC MEMORY ALLOCATION
- Malloc
- Calloc
- Realloc
- Free

MODULE 10: FILE INPUT/OUTPUT
- File Handling in C
- What is a file
- File structure
- Defining and Opening a file
- Input/Output operations on files

C++

MODULE 1: INTRODUCTION TO OOPS CONCEPTS
- Object Oriented Programming Style
- Difference between Modular Approaches OOPS
- Concepts of Object Oriented language
- Functions and Variables
- Functions : Declaration & Definition
- Variables : Definition, Declaration and scope

MODULE 2: CLASSES & OBJECTS
- History of C++
- Input -Output Operators
- Cascading of Operators
- Classes in C++
- Defining classes in C++
- Ways of Creating Objects
- Nesting of Member functions
- Arrays Within class
- Arrays of Objects
- Static Data Member
- Static Member functions
- Objects as Function arguments
- Friend functions
- Passing Objects by reference in

MODULE 3: USING CONSTRUCTORS
- Constructors and its types
- Creating & accessing n Objects'
- Multiple constructers & Initialization Lists
- Defining Constructers outside the class
- Constructers with default arguments
- Dynamic Initializing of Objects
- Using Destructors to destroy Instances

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MODULE 4: POLY MORPHISM
- Overview of POLY MORPHISM
- Function Overloading
- Operator Overloading
- Working with Overloaded Operator Methods
- Overloading of Unary Operator
- Overloading of Binary Operators
- Overloading of Increment and Decrement Operators

MODULE 5: TYPE CONVERSIONS
- Built in to User Defined
- User defined to Built in type
- User defined to user defined type

MODULE 6: INHERITANCE
- Overview of Inheritance
- Defining Base and Derived Classes
- Types of Inheritance
- VISIBILITY Specifiers
- Virtual Base class
- Constructors in Derived class
- Containership

MODULE 7: EXCEPTION HANDLING
- Exceptions
- Inheritance and Exceptions
- Exception Hierarchies
- Inside an Exception Handler

MODULE 8: INPUT/OUTPUT FILE STREAMS
- Introduction of File Streams Modes
- Opening a file
- Closing a file
- Writing to a file
- File Pointers

MODULE 9: TEMPLATES
- Template Overview
- Customizing a Template Method
- Function Templates
- Multiple template types
- Class templates
- Templates with multiple Parameters

Partners

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