C with Data Structure

Basic Programming Course

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About Course

The course is basically designed for developers, learners to familiarize with C Programming through Console Application. The training period allows the developer to understand different features of C Programming used for coding and debugging.

Prerequisites: No

Syllabus Overview

Overview of C

- ❖ History of C
- ❖ Basic Structure Of C Program
- ❖ Sample C programs
- ❖ Executing a C program

Constants, Variables and DataTypes

- ❖ Character Set
- ❖ C Tokens
- ❖ Keywords and Identifiers
- ❖ Constants
- ❖ Variables
- ❖ Data Types
- ❖ Declaration Of Variable
- ❖ Declaration of Storage Class
- ❖ Assigning values to Variables
- ❖ Defining Symbolic Constants

Operators and Expressions

- ❖ Arithmetic Operators
- ❖ Relational Operators
- ❖ Logical Operators
- ❖ Assignment Operators
- ❖ Increment and Decrement Operators
- ❖ Conditional Operator
- ❖ Bitwise Operator

- ❖ Special Operators
- ❖ Arithmetic Expressions
- ❖ Evaluation Expressions

Managing Input and Output Operations

- ❖ Reading a Character
- ❖ Writing a character
- ❖ Formatted input
- ❖ Formatted Output

Decision Making and Branching

- ❖ Decision making with if statement
- ❖ Simple if statement
- ❖ If...else statement
- ❖ Nested if...else statement
- ❖ Switch Statement
- ❖ The ? : operator

Decision Making and Looping

- ❖ The while statement
- ❖ The do statement
- ❖ The for statement

Arrays

- ❖ One dimensional array
- ❖ Declaration of one dimensional array
- ❖ Initialization of one dimensional array
- ❖ 2D array
- ❖ Initialization of 2D array
- ❖ Multi dimensional array

Character Arrays and Strings

- ❖ Declaring and initializing the string variables
- ❖ Reading strings from terminal
- ❖ Writing Strings to screen
- ❖ Arithmetic operations on characters
- ❖ Putting String together
- ❖ Comparison of 2 strings
- ❖ String handling functions

User Defined Functions

- ❖ Definition of Functions
- ❖ Return values and their types
- ❖ Function calls
- ❖ Functions declaration
- ❖ Category of function
- ❖ No arguments and no return values
- ❖ Argument but no return values
- ❖ Arguments with return values
- ❖ No argument but returns a value
- ❖ Function that returns multiple values
- ❖ Nesting Functions
- ❖ Recursion
- ❖ Passing Arrays to Functions
- ❖ Passing Strings to functions

Structures and Unions

- ❖ Defining a structure
- ❖ Declaring Structure variables
- ❖ Accessing structure members
- ❖ Structure initialization
- ❖ Operation on individual structure members
- ❖ Arrays of structure
- ❖ Arrays within structure

- ❖ Structure within structure
- ❖ Structure and functions
- ❖ Unions
- ❖ Size of Structure

Pointers

- ❖ Understanding Pointers
- ❖ Accessing the address of a variable
- ❖ Declaring pointer variable
- ❖ Initialization of pointer variable
- ❖ Accessing variable through its pointer
- ❖ Chain of pointers
- ❖ Pointer expression
- ❖ Pointers and arrays
- ❖ Pointers and Character Strings
- ❖ Array of Pointers
- ❖ Pointers as a function arguments
- ❖ Function returning pointer
- ❖ Pointers to functions
- ❖ Pointers and structures

File Management in C

- ❖ Defining and opening a file
- ❖ Closing a file
- ❖ I/O operation on file
- ❖ Error Handling