In computing, C is a general-purpose computer programming language originally developed in 1972 by Dennis Ritchie at the Bell Telephone Laboratories for use with the UNIX operating system. Although C was designed for implementing system software, it is also used for developing application software. It is widely used on a great many different software platforms and computer architectures, and several popular compilers exist. C has greatly influenced many other popular programming languages.

Introduction to Computers & Programming

- Hardware and Software.
- What is a Program?
- What is programming language?
- Steps in Programming
- Operating System
- Skills needed to do programming
- Block Diagram & I/O Devices
- Different Programming Techniques
- Computer Generations
- Procedural Programming
- Modular Programming
- Getting started with compiler

Introduction to Computers & Programming

- History of C and Features
- Algorithms ➢ Flowcharts
- Language and Generation of Languages

Basics in 'C'

- Character Set
- Identifiers
- Variables

- Constants
- Keywords
- Basic Data types in ‘C’
- Declaration of Variables
- C program structure
- Execution of ‘C’ program under Linux/Unix

C Operators:

- Operators- introduction
- Classification
- Unary
- Binary
- Ternary
- Special Operators
- Order of Evaluation

Control Statements

- If
- If-else
- If-else-If
- Nested if-else
- Switch case statement

Loop Control Instructions

- For loop
- While loop
- Do ... while loop
- Break and continue statement

String Manipulation

- What are strings?
- String I/O
- String Formatted Specifier
- String Manipulation Functions
- gets() and puts()

Arrays:

- What is an array?
- Rules of using array
- Array Declaration
- Array Initialization
- Accessing individual elements of an array
- Types of Arrays
- Single Dimensional Arrays
- Two Dimensional Arrays
- Multi Dimensional Arrays

Pointers

- What is a pointer?
- Declaring a pointer Variable
- Initializing a pointer Variable
- Using pointer Variables
- Pointer Arithmetic
- Why use pointers
- Array of Pointers & pointer to array
- Passing an entire array to a function
- Functions returning a Pointer Variable
- Pointers to pointers
- Call by value and call by reference
- Pointer with Structures
- Dynamic memory allocation

Structures and Unions

- Introduction to Structures
- Arrays of Structures
- Nested Structure
- Structures and functions
- Pointers with Structures
- Introduction to Union

- Declaring Union
- Difference between Structure and Union
- Type def
- Preprocessor and Macro
- Enumerations

Functions

- Why use Functions
- Components of Function
    - ✓ Name of a function
    - ✓ Body of a function
    - ✓ Calling a function
- Local variables of a function
- Parameters or Arguments to a function
- Function with arrays
- Return Values
- Function with Strings
- Rules of using a function ➢ Recursive Functions ➢ What is Header File?
- How to create User defined header files

Storage Classes

- Automatic
- Register
- Static
- Etern

File Handling

- Introduction to files
- File Pointer
- Opening a File
- Closing a File ➢ Types of files
- File input, Output Operators
- Seeking in a file ➢ Sequential Files
- Random access files
- Command Line Arguments
- File Handling errors