

C Language

1. Introduction

- What is a Programming Language
- What is a Compiler
- C Syntax and Constructs
- Writing C Programs

2. Operators

- Control Structures and Operators
- printf Format Specifiers
- ASCII
- Assignment Operators
- More Operators
- Increment and Decrement Operators
- The for, While, DO...while Loop

3. Functions in C

- Extern Declarations
- ANSI Function Prototypes
- Scope
- Problem Breakdown with Functions

4. Compiling a Program

- Steps to Compiling a Program
- Compilation Phases
- Multi-File Compilation
- Header Files
- The Standard Library
- The Linking Process
- The switch Statement
- The make Utility
- More Types and sizeof
- Assignment Compatibility
- Type Casting

5. Pointers, Addresses and Memory

- Passing Parameters by Address
- Arrays
- Address Arithmetic
- Strings and String Constants
- Initializing Arrays

6. Arrays

- Passing Arrays as Parameters
- The Standard Library String Routines
- Dynamic Memory Allocation
- Allocating Arrays Dynamically
- Macros and Conditional Expressions
- Bit-Wise Operators

7. Structures and Storage

- Memory Organization and Storage Classes
- Initializing Variables
- scanf
- Line Oriented Input with scanf
- Type Definitions and Structs
- Arrays of Structs
- System Struct Definitions
- The Standard IO Library
- Union vs. Structs
- Address Arithmetic
- Vectors
- Arrays of Pointers to Structs