



C COURSE CONTENTS

1. Introduction to Programming (Programming Languages, compiler, linker, loader, interpreter)
2. Classification of programming Languages:
 - a. Low-level Languages
 - b. High-level Languages
3. Introduction to C Language
4. Constants, Variables and Data types in C
5. Operators and Expressions
6. Managing Input and Output Operations
 - a. Printf()
 - b. Scanf()
 - c. Formatted Input Function
7. The First C Program
 - a. Basic Building Blocks of a C Program
 - b. Executing a C Program
 - c. Troubleshooting Execution Problems
8. Decision Making and Branching
 - a. The **IF** Statement
 - b. The **IF Else** Statement
 - c. The **Switch Case** Statement
 - d. The **Conditional** Operator
 - e. The **GO** Statement

9. Decision Making and Looping

- a. The **FOR** Loop
- b. The **WHILE** Loop
- c. The **DO WHILE** Loop
- d. Nested Loops
- e. The **BREAK** Statement
- f. The **CONTINUE** Statement

10. Arrays

11. Character Arrays and Strings

12. Functions in C

- a. Built-in Function
- b. User Defined Functions
- c. Recursion

13. Structures and Unions

- a. Structures
 - b. Arrays of Structures
 - c. Passing Structures to Functions
 - d. Pointers with Structure
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14. Pointers

- a. Pointer with Structure
- b. Pointer with Array
- c. Pointer with Function

15. Preprocessor and Multi-file Compilation

- a. The C Preprocessor
- b. Global Variables and Variable Storage Classes
- c. Program Organization and Multi-file Compilation

16. Introduction to Dynamic Memory Allocation and Linked List:

- a. Malloc()

- b. Calloc()
- c. Free
- d. Realloc()

17. File Management in C

- a. Command-line Arguments
- b. Combining Command-line Arguments and File I/O
- c. File Input and Output

