



**C**

# Programming

**C**

# About Us

Learnify is the MSME and Startup India verified destination for professionals in product, growth, design, management, business, tech, and data. It provides curated, hands-on learning from industry experts to instantly enhance skills, foster innovation, and empower you within a global community.



# Our Vision & Mission

Learnify, MSME and Startup India verified, teaches millions technical skills with expert-led, hands-on courses for career growth.



## VISION

The vision of Learnify is to revolutionize education through the seamless integration of technology, creating a direct path from skill acquisition to job readiness.



## MISSION

Our mission is to provide personalized and engaging learning experiences for students of all ages by leveraging digital tools, virtual platforms, and data-driven insights to ensure effective skill mastery and career readiness.

# C Programming

## COURSE CURRICULUM

1.

### C PROGRAMMING FUNDAMENTALS

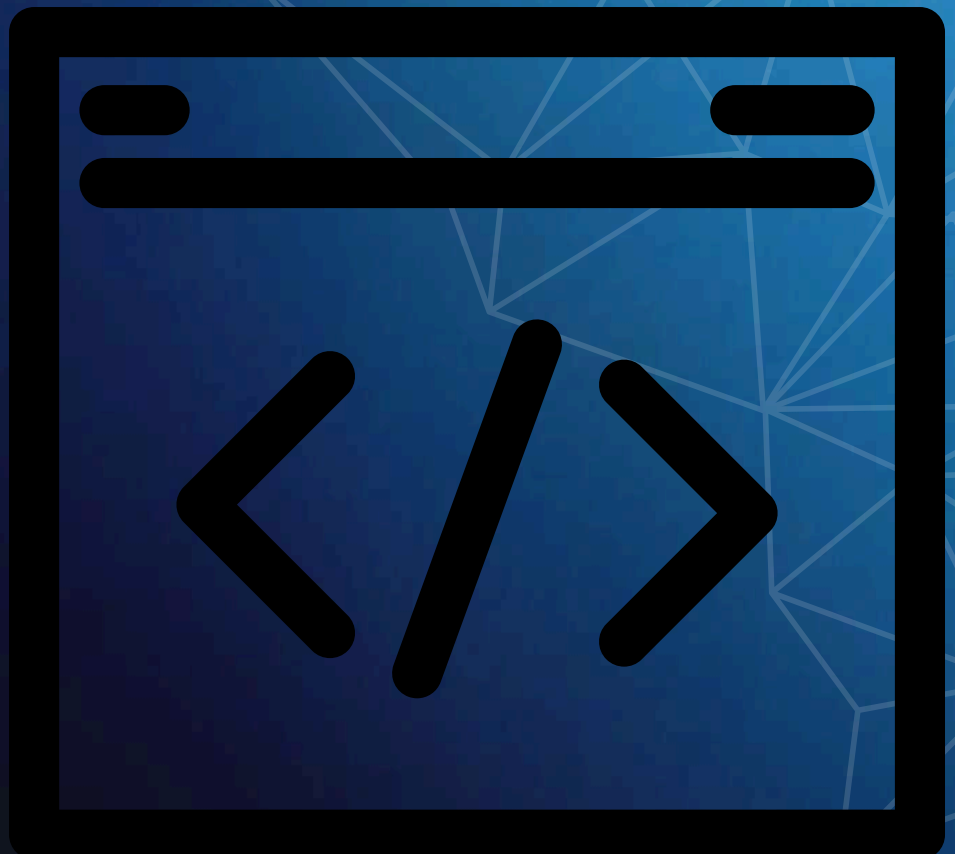
- History & Features of C
- Structure of a C Program
- Compilation Process (Preprocessor → Compiler → Linker)
- Keywords, Identifiers, Constants & Variables
- Data Types & Type Modifiers
- Input / Output (printf, scanf)



**2.**

**OPERATORS & EXPRESSIONS**

- **Arithmetic, Relational, Logical Operators**
- **Bitwise Operators**
- **Assignment & Conditional Operators**
- **Operator Precedence & Associativity**
- **Type Casting (Implicit & Explicit)**



**3.**

**CONTROL STATEMENTS**

- **Decision Making**
  - o if, if-else, nested if
  - o switch-case
- **Looping**
  - o for, while, do-while
- **Jump Statements**
  - o break, continue, goto, return



**4.**

**FUNCTIONS**

- **Function Declaration & Definition**
- **Function Call Mechanism**
- **Call by Value & Call by Reference**
- **Recursive Functions**
- **Inline Functions**
- **Storage Classes (auto, static, extern, register)**

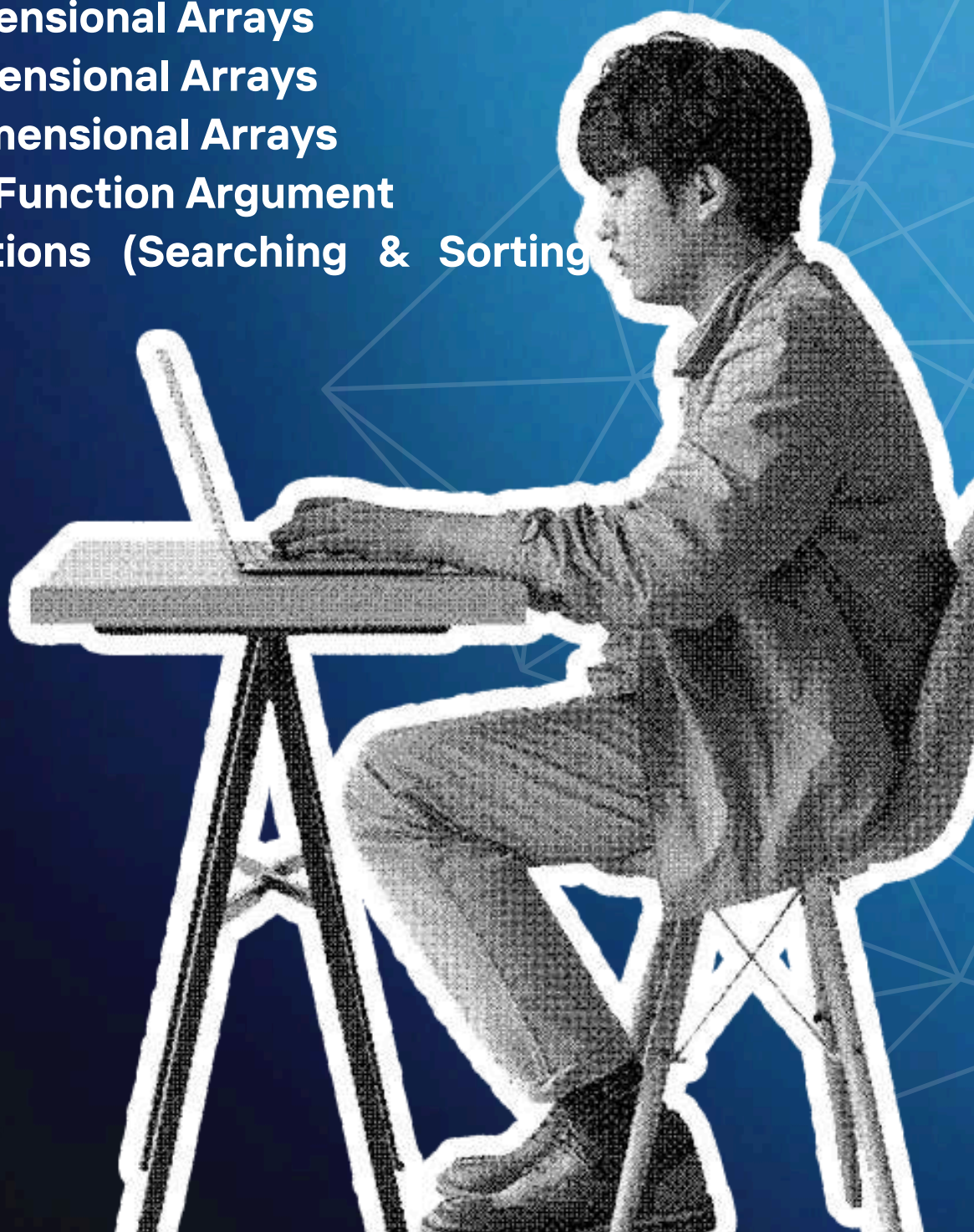




# C Programming

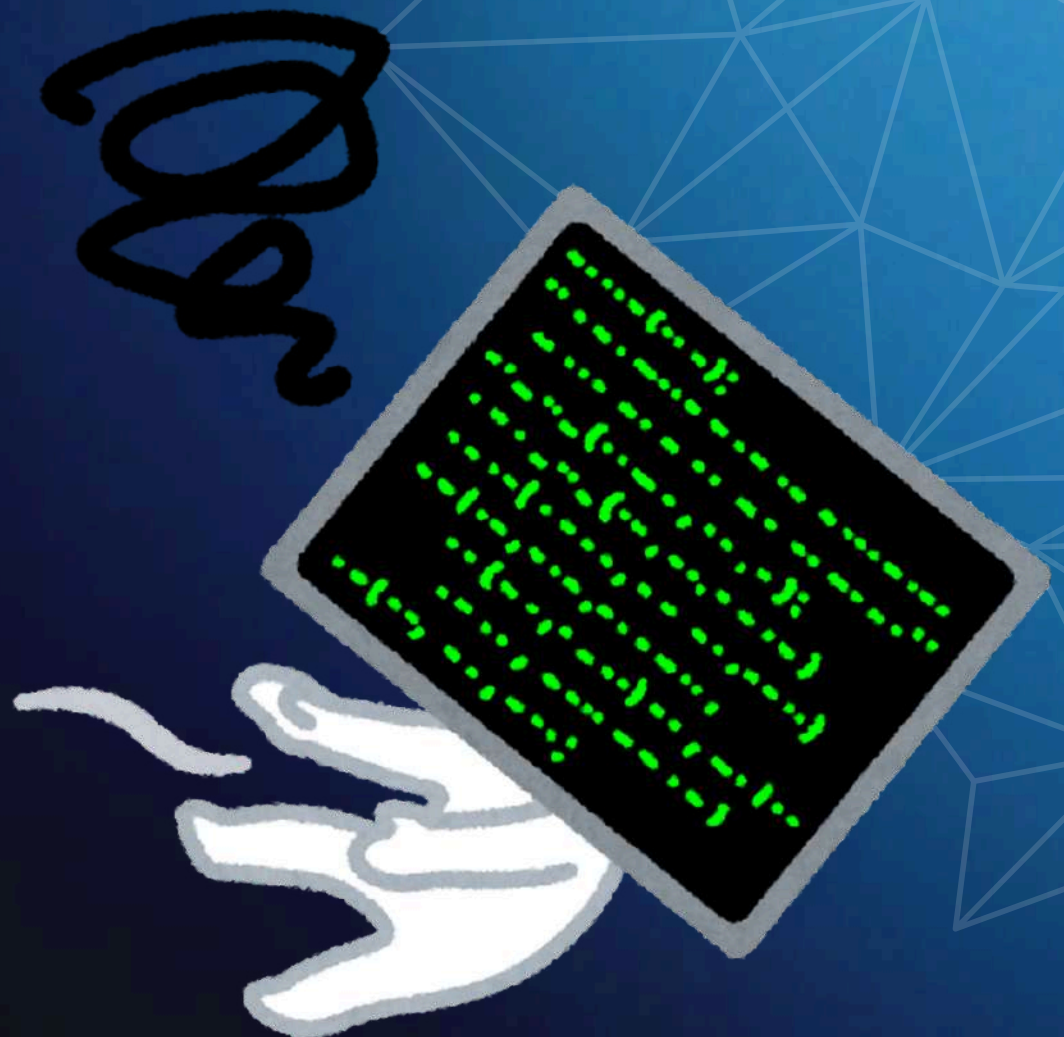
## 5. ARRAYS

- One-Dimensional Arrays
- Two-Dimensional Arrays
- Multi-Dimensional Arrays
- Array as Function Argument
- Applications (Searching & Sorting Basics)



## 6. STRINGS

- String Handling Basics
- String Input / Output
- String Library Functions
  - `strlen`, `strcpy`, `strcmp`, `strcat`
- String Manipulation Programs



**7.**

**POINTERS (CORE ADVANCED TOPIC)**

- **Pointer Basics & Memory Addressing**
- **Pointer Arithmetic**
- **Pointer to Pointer**
- **Pointer & Arrays**
- **Pointer & Functions**
- **Dynamic Memory Allocation**
  - o malloc, calloc, realloc, free



**8.**

**STRUCTURES & UNIONS**

- **Structure Declaration & Initialization**
- **Structure within Structure**
- **Array of Structures**
- **Pointer to Structure**
- **Union vs Structure**



**9.**

**FILE HANDLING**

- **File Concept & File Modes**
- **File Operations**
  - o **fopen, fclose**
  - o **fprintf, fscanf**
  - o **fgetc, fputc**
  - o **fgets, fputs**
- **Binary Files**
- **Random Access Files**



# C Programming

## 10.

## PREPROCESSOR DIRECTIVES

- **#include, #define**
- **Macros with Arguments**
- **Conditional Compilation**
  - o **#if, #ifdef, #ifndef, #endif**
- **Header Files**
- **#pragma**



**11.**

## **ADVANCED MEMORY & SYSTEM CONCEPTS**

- **Stack vs Heap Memory**
- **Memory Leak & Dangling Pointers**
- **Static vs Dynamic Memory**
- **Command Line Arguments**
- **Error Handling (errno, perror)**



**12.**

**DATA STRUCTURES USING C**

- **Linked List**
  - **Singly, Doubly, Circular**
- **Stack (Array & Linked List)**
- **Queue (Simple, Circular)**
- **Trees (Basic Concepts)**
- **Searching Techniques**
  - **Linear Search**
  - **Binary Search**
- **Sorting Techniques**
  - **Bubble**
  - **Selection**
  - **Insertion**



**13.**

## **ADVANCED & COMPETITIVE C**

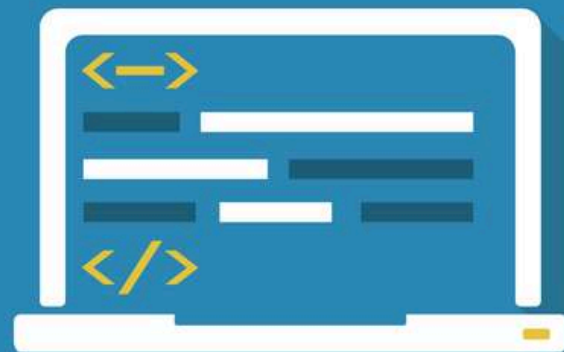
- **Bit Manipulation Problems**
- **Pattern & Logic Building**
- **Time Complexity Basics**
- **C Programming Interview Questions**
- **Debugging Techniques**
- **Code Optimization**



**14.**

**PRACTICAL & PROJECT WORK**

- **Mini Projects**
  - o **Student Management System**
  - o **Banking System**
  - o **File-Based Database**
- **Competitive Programming Practice**
- **Viva & Practical Exam Preparation**



15.

## CERTIFICATION & CAREER SUPPORT

- Learnify Certificate of Completion
- MSME & Startup India Certification
- Resume Building & LinkedIn Optimization

LEARNING  
NEVER  
ENDS





# C Programming

## Our Alumni Work At



**C**  
**Programming**

# **C ontact Us**



**+91 74396 78587**



**[learnifytechnology.com](https://www.learnifytechnology.com)**



**[@learnify\\_technology](#)**



**[https://www.linkedin.com  
/company/the-learnify/](https://www.linkedin.com/company/the-learnify/)**



**Kolkata Sector V 700098**