

## C Programming Basics

### 1. Introduction to C

C is a general-purpose programming language developed in the 1970s. It is fast, powerful, and widely used in systems programming, embedded systems, and software development.

### 2. Basic Structure of a C Program

A simple C program includes:

- Preprocessor directives
- main() function
- Statements and return value

Example:

```
#include  
  
int main() {  
  
    printf("Hello, World!");  
  
    return 0;  
}
```

### 3. Data Types in C

- int
- float
- double
- char

### 4. Variables and Constants

Variables store data; constants hold fixed values.

### 5. Input and Output

- printf() for output

- `scanf()` for input

## **6. Control Statements**

- if, else
- switch
- loops: for, while, do-while

## **7. Arrays**

Arrays store multiple values of the same type.

## **8. Functions**

Functions break code into reusable blocks.

## **9. Pointers**

Pointers store memory addresses.

## **10. Structures**

Structures group different data types under one name.

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