SNS COLLEGE OF TECHNOLOGY

Coimbatore – 35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF INFORMATION TECHNOLOGY

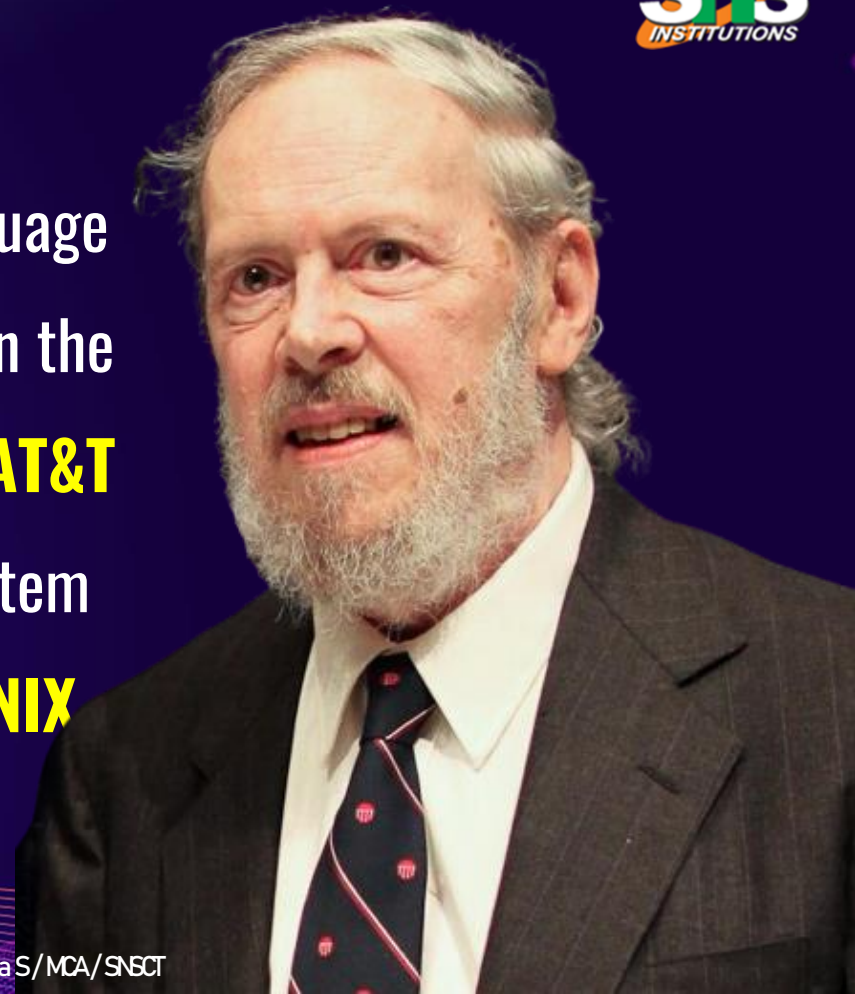
23ITT101 – PROGRAMMING IN C & DATA STRUCTURES

I YEAR - II SEM

UNIT I – INTRODUCTION TO C

INTRODUCTION TO C PROGRAMMING

C is a **procedural programming** language initially developed by **Dennis Ritchie** in the year of **1972** at **Bell Laboratories of AT&T Labs**. It was mainly developed as a system programming language to write the **UNIX operating system**.



What is a Procedural Programming language?

- ✓ A procedural language follows a sequence of statements or commands in order to achieve a desired output.
- ✓ Each series of steps is called a procedure, and a program written in one of these languages will have one or more procedures within it.
- ✓ Examples: C, C++, Java, Pascal & BASIC

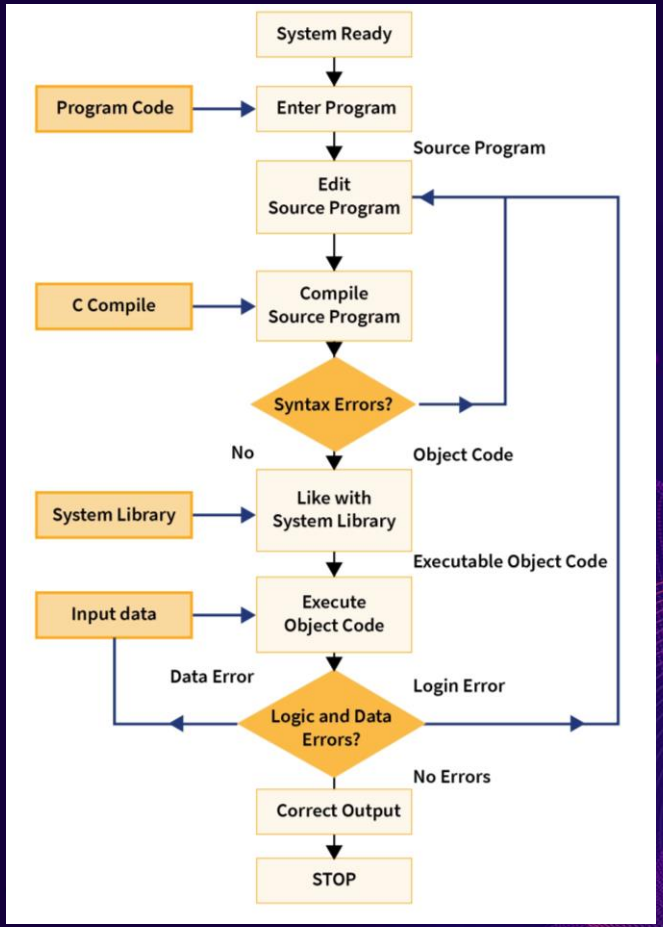
Purpose of learning C language

C programming language is a **machine-independent programming language** that is mainly used to create many types of applications and operating systems such as **UNIX**, and other complicated programs such as the **Oracle database**, **Git**, **Python interpreter**, and **games** and is considered a **programming foundation** in the process of learning any other programming language.

What is the C Language?

- The C language is a high-level, general-purpose programming language.
- It provides a straightforward, consistent, powerful interface for programming systems.
- That's why the C language is widely used for developing system software, application software, and embedded systems.
- The C programming language has been highly influential, and many other languages have been derived from it.
- For example, C++ and Java are two popular modern dialects of C.
- And C is an excellent choice for system programming, for example, developing operating systems, compilers, and network drivers.
- As learning C help to understand a lot of the underlying architecture of the operating system. Like pointers, working with memory locations, etc.

Working of a C program



Key Features of C Language

1. Portability
2. Simple
3. Compile Based
4. Platform dependent
5. Modularity
6. Structure Oriented
7. Middle Level
8. Fast & Efficient
9. Uses of Pointer
10. Syntax based

Pros & Cons of C Language

PROS

- Presence of many libraries
- Dynamic memory allocation
- Fast compilation & Execution

CONS

- Lack of object orientation
- Inefficient memory management
- Absence of Exceptional handling

Applications of C Language

FUNDAMENTAL RULES

Basic Fundamental rules of writing a 'C' program

- C is a **case-sensitive language** so all C instructions must be written in lower case letters. **main** is not the same as **MAIN**.
- All C statements must end with a **semicolon**.
- **Whitespace** is used in C to add blank space and tabs.
- When we write a function, its body is enclosed in **curly braces**, like for the main( ) function.
- Whitespace is required between keywords and identifiers
- C program must start with the header files.

Example

Header Files

```
#include <stdio.h>
#include <conio.h>
void main()
{
printf("C Programming");
/*
Further Statements…
*/
getch();
}
```

Main function

Semi colon

Curly braces