

# **INTRODUCTION TO PROGRAMMING IN C-LANGUAGE**

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# Introduction to computers

Computer A computer is an electronic device, operating under the control of instructions stored in its own memory that can accept data (input), process the data according to specified rules, produce information (output), and store the information for future use.



# Parts of a computer

- Input Devices:mouse,key board,joystick etc..
- Output Decives:

# Components of computers

- Hardware:The physical parts of a computer is called Hardware.
- Ex: keyboard,mouse,cpu and etc..
- Software :A set of programs is called software.lt is of two types
  - 1)Application S/w→ex:opera,adobe photoshop
  - 2)System sofware→ex:linux,unix,dos

# C-Language

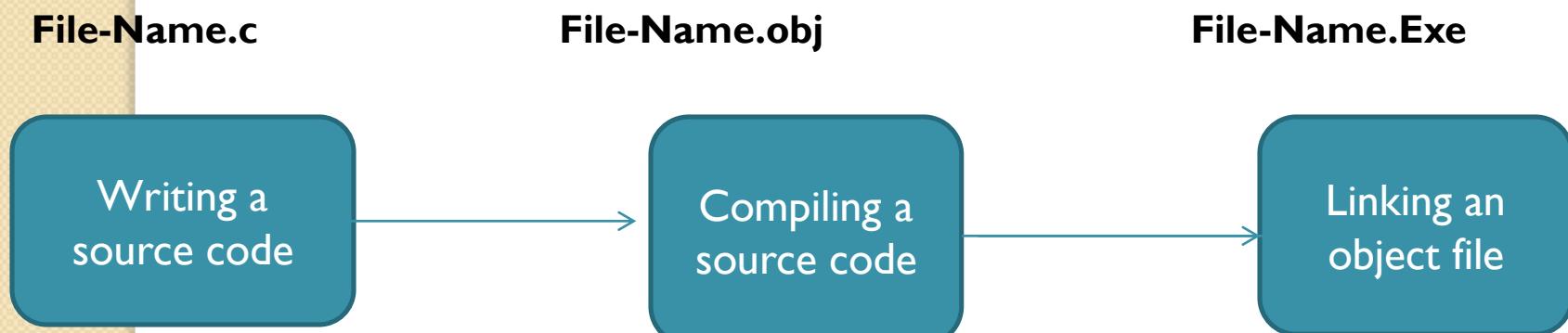
**C is a general-purpose programming language that is extremely popular, simple and flexible. It is machine-independent, structured programming language which is used extensively in various applications.**

# History of C-language

In 1972, a great computer scientist Dennis Ritchie created a new programming language called 'C' at the Bell Laboratories. It was created from 'ALGOL', 'BCPL' and 'B' programming languages. 'C' programming language contains all the features of these languages and many more additional concepts that make it unique from other languages.

# How 'C' Works?

C is a compiled language. A compiler is a special tool that compiles the program and converts it into the object file which is machine readable. After the compilation process, the linker will combine different object files and creates a single executable file to run the program. The following diagram shows the execution of a 'C' program



# Simple C-Program Structure

C-Program involves the following sections:

- Documentations (Documentation Section)
- Preprocessor Statements (Link Section)
- Global Declarations (Definition Section)
- The main() function
  - Local Declarations;
  - Program Statements & Expressions;
- User Defined Function

# A simple program to print “Hello”

```
#include<stdio.h>  
void main()  
{  
    printf("Hello");  
}
```

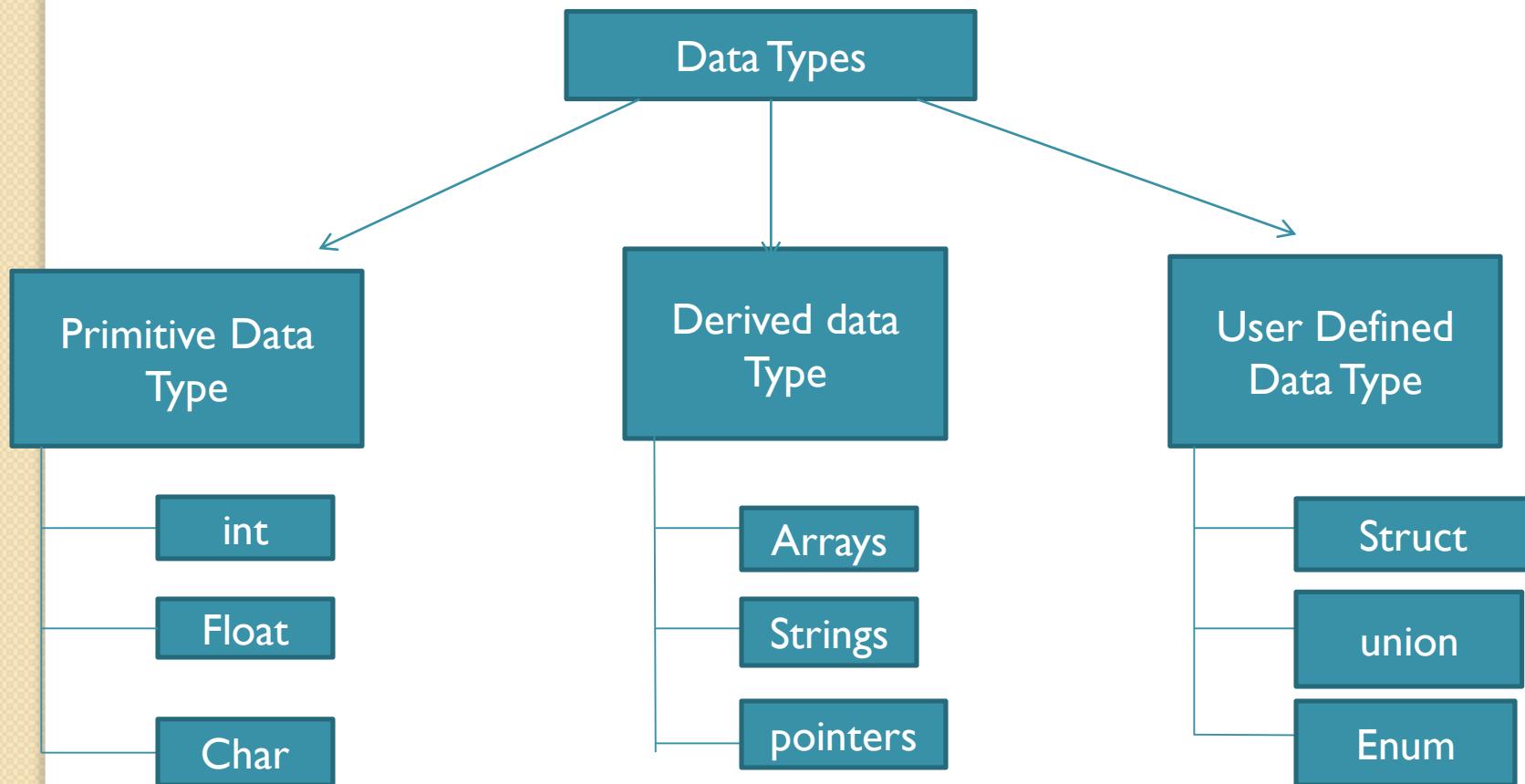
Output: Hello

# Keywords in C-languauge

<u>auto</u>	<u>break</u>	<u>case</u>	<u>char</u>
<u>const</u>	<u>continue</u>	<u>default</u>	<u>do</u>
<u>double</u>	<u>else</u>	<u>enum</u>	<u>extern</u>
<u>float</u>	<u>for</u>	<u>goto</u>	<u>if</u>
<u>int</u>	<u>long</u>	<u>register</u>	<u>return</u>
<u>short</u>	<u>signed</u>	<u>sizeof</u>	<u>static</u>
<u>struct</u>	<u>switch</u>	<u>typedef</u>	<u>union</u>
<u>unsigned</u>	<u>void</u>	<u>volatile</u>	<u>while</u>

# Data Types

- C language has some predefined set of data types to handle various kinds of data that we can use in our program. These datatypes have different storage capacities.



# Introduction to Files in C-Language

A File is a collection of data stored in the secondary memory. Files are not only used for storing the data, programs are also stored in files. In order to use files, we have to learn file input and output operations. That is, how data is read and how to write into a file. A Stream is the important concept in C. The Stream is a common, logical interface to the various devices that comprise the computer. So a Stream is a logical interface to a file. There are two types of Streams, Text Stream and Binary Stream.

# Using files in C-language

To use a file four essential actions should be carried out. These are,

- a. Declare a file pointer variable.
- b. Open a file using the fopen() function.
- c. Process the file using suitable functions.
- d. Close the file using the fclose() and fflush() functions.

# Applications

- 'C' is a programming language, suitable for writing an operating system which manage the input device and output device of a computer, allocates its storage and schedules the running of other programs.
- Portability is one of the major reasons for increasing use of 'C' in commercial software.
- 'C' programs utilize the power of pre-processor directives and control/branching statements.
- 'C' language is designed to support to structured programming technique.
- 'C' language is relatively simple and orderly hence 'C' compiler can make to run on a small computer.



Thank you