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| **CHAPTER** - 1 |

**C Language Overview**

* why is c-language is so important?
* Why to use c?
* Features of c programming language.
* Advantages of C.
* Disadvantage of C.
* The limitations of C programming language.
* Fact about c language.
* History of c.
* How to execute C-program step by step.

C Language Overview

The C programming language is a general-purpose, high-level language that was originally developed

by Dennis M. Ritchie to develop the UNIX operating system at Bell Labs. In 1978, Brian Kernighan and

Dennis Ritchie produced the first publicly available description of C, now known as the K&R standard.

The UNIX operating system, the C compiler, and essentially all UNIX applications programs have been

Written in C.

The C has now become a widely used professional language for various reasons.

 Easy to learn

 Structured language

 It produces efficient programs.

 It can handle low-level activities.

 It can be compiled on a variety of computer platforms.

1] Why is c language is so important?

C has become very popular for various reasons.

* One of the early programming languages.
* Still, the best programming language to learn quickly.
* C language is reliable, simple, and easy to use.
* C language is a structured language.
* Modern programming concepts are based on C.
* It can be compiled on a variety of computer platforms.
* Universities preferred to add C programming in their courseware.
* Oracle is written in c-language (oracle is a largest s/w in Data Base).
* MYSQL is written In c-language (MYSQL is a database management s/w).
* Core library of android are written in c language.
* Almost every device driver is written in c-language.

(Ex of device driver-: Pen drive, memory-card.)

* Major part of web –browser is written In c-language.

(we use the web-browser to operate the internet)

Some most popular web-browser like Google-chrome, Mozilla, Fir-

Fox, Opera, safari etc.

* Unix- O/S is developed in c-language.

(The UNIX operating system was the first o/s it’s kind. it is

developed in c-language. infect c was create to developed UNIX O/S.)

* In c-language we can manage memory it’s self.

**1.0]** Why to Uses of C Programming Language

C was initially used for system development work, in particular the programs that make up the

operating system. C was adopted as a system development language because it produces code

that runs nearly as fast as code written in assembly language. Some examples of the use of C might be:

In the beginning, C was used for developing system applications, e.g. :

* [Database Systems](https://www.w3schools.in/dbms/intro/)
* Language Interpreters
* [Compilers and Assemblers](https://www.w3schools.in/what-is-compiler/)
* [Operating Systems](https://www.w3schools.in/operating-system-tutorial/intro/)
* Network Drivers
* Word Processors
* Text Editors
* Print Spoolers
* Assemblers
* Print Spoolers
* Modern Programs
* Utilities

1.1] Features of C programming language

* C is a robust language with a rich set of built-in functions and operators.
* Programs written in C are efficient and fast.
* C is highly portable; programs once written in C can be run on other machines with minor or no modification.
* C is a collection of C library functions; we can also create our function and add it to the C library.
* C is easily extensible.

1.2] Advantages of C

* C is the building block for many other programming languages.
* Programs written in C are highly portable.
* Several standard functions are there (like in-built) that can be used to develop programs.
* C programs are collections of C library functions, and it's also easy to add functions to the C library.
* The modular structure makes code debugging, maintenance, and testing easier.

1.3] Disadvantages of C

* C does not provide Object Oriented Programming (OOP) concepts.
* There are no concepts of Namespace in C.
* C does not provide binding or wrapping up of data in a single unit.
* C does not provide Constructor and Destructor.

1.4] The limitations of C programming languages are as follows:

* Difficult to debug.
* C allows a lot of freedom in writing code, and that is why you can put an empty line or white space anywhere in the program. and because there is no fixed place to start or end the line, so it isn't easy to read and understand the program.
* C compilers can only identify errors and are incapable of handling exceptions (run-time errors).
* C provides no data protection.
* It also doesn't feature the reusability of source code extensively.
* It does not provide strict data type checking (for example, an integer value can be passed for floating data type).

1.5] Facts about C

* C was invented to write an operating system called UNIX.
* C is a successor of B language, which was introduced around 1970.
* The language was formalized in 1988 by the American National Standard Institute. (ANSI).

The UNIX OS was totally written in C by 1973.

* Each instruction in a c program is written as a separate statement. Therefore, a
* complete c program would comprise a series of statement.
* Blank space may be inserted between two words to improve the readability of the statement. However , no blank spaces are allowed within a variable, constant or keyword.
* All statement s are entered in small case letters.
* C has no specific rules for the position at which a statement is to be written . that’s why it is often

Called a free-from language.

* Every c statement must end with a ; (semicolon) . thus acts as a statement terminator

1.6] **HISTORY OF C-LANGUAGE**

Martin Richards was developed of BCPL(Basic Combine Programming Language). This language was developed in1966. And he made BCPL through combined the features of many languages.

Ken-Thompson was developed of B-language in 1969. (Ken-Thompson wanted to develop an operating system but he need a powerful language for developed these operating system). That’s why first he was develop B-language and also develop of UNIX operating system.

C-language was developed and written by Dennis M**.** Ritchy in 1972. And hence he is known as the founder of C. C programming language to overcome the difficulties found in older programming language such as BCPL, BASIC, B etc. and he made C language by improving B language.

Note

First Unix operating system was developed by ken Thompson using B language. After that Dennis M**.** Ritchy was developed Unix operating system with extra feature using c language.

# HOW TO EXECUTE C PROGRAMS



