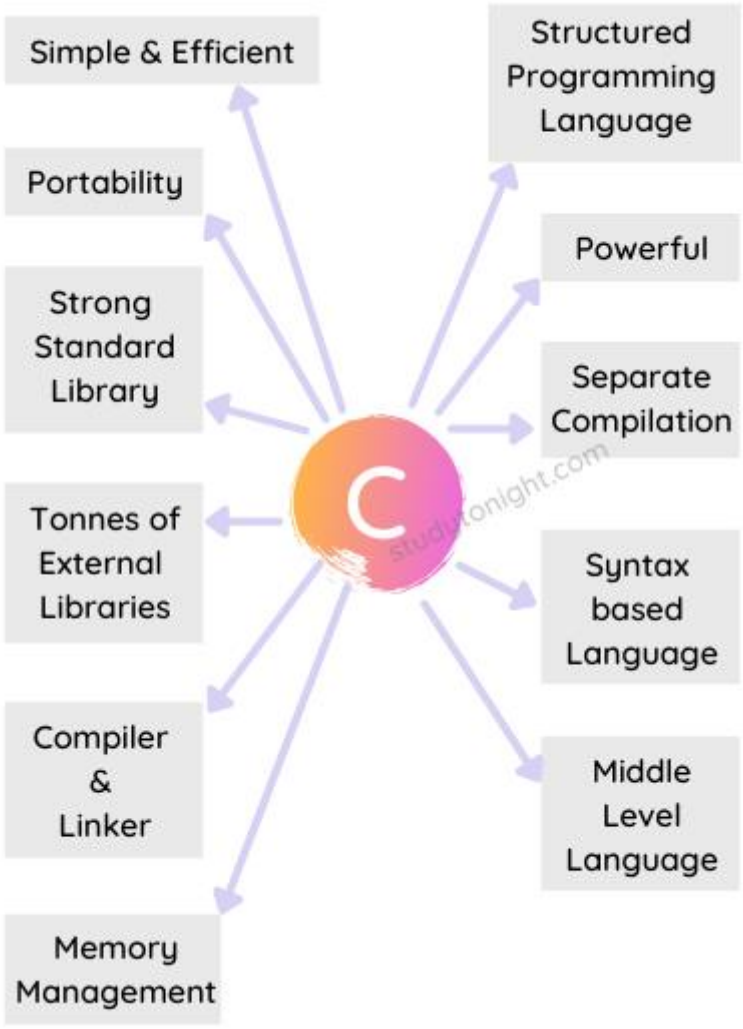
Features of C language :-

Here we have listed all the major features of C language to give you more reasons to learn C language.

The C programming language is a **feature-rich** programming language. It has all the required features that a developer (beginner or expert) would want a programming language to have.

The C language was created from **Basic Cambridge Programming Language(BCPL)** and **B Language**. But it is many times faster than BASIC and also has many more features which we will learn in this tutorial.

Here is a simple chart to list down the **main features of the C language**.



Let's talk about all these features one by one.

1. Simple and Efficient

The C Language is a simple language that is easy to learn even for a beginner and is super efficient to use both in terms of the time of development and time of execution. Yes, if you want to create software using C language you can do so in quite less time depending upon the size of the software that you want to code.

2. Portability

C Language program runs the same way everywhere. It means if you have written a simple C program like a program to find sum of N numbers in C, on your Windows OS laptop or computer, and then compiled it and run it, you can then take the compiled code and run it on any other operating system or machine, like, Linux or macOS, etc., your C program will always return the same result.

If you have software written in the C language for Unix OS, and you now want to run it on Windows OS, you can easily adapt the software for Windows OS, and that is the power of the C language.

Hence, we can say that the C language is portable.

3. Structured Programming language

C language is a structured programming language because we can create functions in the C language. Using functions we can separate a particular operation from the main program and then use it again and again.

A structured language is not just about having the ability to create functions, but it supports **loops**, **conditional statements**, etc. All of this we will cover in detail in the upcoming tutorials.

4. Powerful

C language is a very powerful programming language. It has a broad range of features like support for many **data types, operators, keywords, etc.**, allows structuring of code using **functions**, **loops**, **decision-making statements**, then there are complex data-structures like **structures**, **arrays**, etc., and **pointers**, which makes C quite resourceful and powerful, etc.

Using the C language you can **easily read, write and create files**. This may sound like a basic feature today, but in the early 1990s, this was a game-changer.

5. Rich Standard Library

C supports various inbuilt functions and libraries that create development fast. The **standard library support** for the C language is superb and you will see that a lot of keywords or ready-made operations that you will use while writing code in C language are already pre-defined. We just have to use them, without worrying about how they work.

These libraries are called **Header files** in C language.

6. Libraries Support

There is not just the standard library for C language but also a **large ecosystem of 3rd party libraries**, which are created by developers/coders around the world, and anyone can use them.

Even you can write your own C language library and distribute it online through your Github profile. You never know, people around the world might need your solution.

7. Separate Compilation

C language code is compiled and then it is run. We will learn how the C language code is compiled in another tutorial. For now, just assume that the code is compiled. Obviously, the compilation of code will take some time. A small piece of code will compile faster while a large code will take time to get compiled.

In C language you can **break your code and put it in multiple source code files**. C language will compile the files separately and then link them together for execution.

This makes **compilation fast**.

Another plus point of this is, **multiple programmers/developers** can work on different code files while working on a single project.

8. Middle-Level Language

The C programming language brings together the best of both worlds.

A **Low-level language** is generally fast, powerful but hard to understand and write code in. Whereas a **High-level Language** is easy for us to understand and write code in, it is also highly portable, but it is generally slow and is unable to directly talk to the system hardware.

Hence, the C programming language is said to be a **Middle-level** programming Language, allows manipulation of bits, bytes, and addresses, hence providing low-level access to the computer systems, while being easy to use, portable, and supporting all other features of a High-level language, etc.

9. Syntax Based Language

Like most High-level languages, for example, Java, C++, C#, the **C language has a syntax**, there are **proper rules for writing the code**, and the C language strictly follows it.

If you write anything that is not allowed, you will get a compile-time error, which happens when the compiler is unable to compile your code because of some incorrect code syntax.

10. Format Free Language

The C language is a format-free language. There are no line numbers needed in the C language code, or we can say that the line number holds no significance. There is no need to place statements on a specified location on a line.

11. Compiled Language

The C language uses a Compiler to compile the code into **object code**, which is nothing but **machine code** that the computer understands. Hence to run a C language program we have to install a C language compiler first.

12. Case sensitive Language

In C, the uppercase and lowercase characters are different. That means `if` is not the same as `IF` in C language.