

C++ Introduction

C++ is a general-purpose programming language that was developed as an enhancement of the C language to include an object-oriented paradigm. It is an imperative and **compiled** language.

C++ is a middle-level language rendering it the advantage of programming low-level (drivers, kernels) and even higher-level applications (games, GUI, desktop apps, etc.). The basic syntax and code structure of both C and C++ are the same.

So, let's first understand the difference between a high-level and a low-level programming language:

1.	High-level languages are programmer friendly.	Low-level languages are machine friendly.
2.	A high-level language is less memory efficient.	Low-level language is highly memory efficient.
3.	It is easy to understand.	It is tough to understand.
4.	Debugging is easy.	Debugging is complex comparatively.
5.	It is simple to maintain.	It is complex to maintain comparatively.
6.	It is portable.	It is non-portable.
7.	It can run on any platform.	It is machine-dependent.
8.	It needs compiler or interpreter for translation.	It needs assembler for translation.
9.	It is used widely for programming.	It is not commonly used now-a-days in programming.

Difference between high-level and low-level programming languages

Some of the **features & key points** to note about the programming language are as follows:

- Simple
- Machine Independent but Platform Dependent
- Mid-level language
- Rich library support
- Speed of execution
- Pointer and direct Memory-Access
- Object-Oriented

- Compiled Language

C++ finds varied usage in applications such as:

- Operating Systems & Systems Programming. e.g. *Linux-based OS (Ubuntu etc.)*
- Browsers (*Chrome & Firefox*)
- Graphics & Game engines (*Photoshop, Blender, Unreal-Engine*)
- Database Engines (*MySQL, MongoDB, Redis etc.*)
- Cloud/Distributed Systems