

# Introduction

## What is C++ ?

- C++ is a cross-platform language that can be used to create high-performance applications.
- C++ was developed by Bjarne Stroustrup, as an extension to the C language.
- C ++ gives programmers a high level of control over system resources and memory.
- The language was updated 4 major times in 2011, 2014, 2017, and 2020 to C++11, C++14, C++17, C++20.

## Why Use C++

- C++ is one of the world's most popular programming languages.
- C++ can be found in today's operating systems, Graphical User Interfaces, and embedded systems.
- C++ is an object-oriented programming language which gives a clear structure to programs and allows code to be reused, lowering development costs.
- C++ is portable and can be used to develop applications that can be adapted to multiple platforms.
- C++ is fun and easy to learn!
- As C++ is close to C, C# and Java, it makes it easy for programmers to switch to C++ or vice versa.

## Difference between C and C++

- C++ was developed as an extension of C, and both languages have almost the same syntax.
- The main difference between C and C++ is that C++ support classes and objects, While c does not.

## C++ Getting Started

To start using C++, you need two things:

- A text editor, like Notepad, to write C++ code
- A compiler, like GCC, to translate the C++ code into a language that the computer will understand

### C++ Install IDE

An IDE(Integrated Development Environment) used to edit And compile the code.

Popular IDE's include code::Blocks, Eclipse and Visual Studio. These are all free and they can be used to both edit and debug C++ code.

NOTE : Web-based IDE's can work as well, but functionality is limited.

## C++ Quickstart

Open Codeblocks and go to **File > New > Empty File**.

Write the following C++ code and save the file as `myfirstprogram.cpp` (**File > Save File as**):

```
#include <iostream>
using namespace std;

int main() {
```

```
cout << "Hello World!";  
return 0;  
}
```

## Command for Compile and Run

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### Command for Compilation

```
g++ -std=c++20 file_name
```

Another way to do this is

```
g++ -std=c++20 file_name -o file_name_like_to_give
```

### Command for Run

```
./a.out
```

## The First Program

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```
#include<iostream>  
using namespace std;  
  
int main(int argc, char const *argv[])  
{  
    cout << "Hello World!";  
    return 0;  
}
```