**C++ Programming**

C++ is a statically-typed, free-form, (usually) compiled, multi-paradigm, general-purpose middle-level programming language based on C. It was developed by Bjarne Stroustrup in 1979.

Many of today’s operating systems, system drivers, browsers and games use C++ as their core language, making it one of the most popular languages used.

This is a comprehensive guide that explores the reasons you should consider learning C++ and the ways you can get started with C++.

If you directly want to get started with learning C++, visit our [C++ Tutorial](https://www.programiz.com/cpp-programming/) page.

**Features of C++ Programming**

**Speed**

Since, C++ is an extended version of C, the C part of it is very low level.

This offers a huge boost in speed that high-level languages like Python and Java cannot provide.

**Statically typed**

Since C++ is a statically typed programming language, it does not allow the compiler to make assumptions about the type of data. For example, 10 is different from "10" and it must be declared explicitly.

Since these are determined at compile-time, it helps the compiler catch errors and bugs before the execution of the program.

**Multi-paradigm programming language**

C++ supports at least 7 different styles of programming and gives developers the freedom to choose one at their will.

Unlike Java, you don’t need to use objects to solve every task unless necessary.

**Object-oriented**

C++ supports Object-Oriented programming, which provides a clear modular structure for programs.

With its use in C++, you are able to divide these complex problems into smaller sets by creating objects.

**Standard library (Standard template library - STL)**

The use of C++ can be further extended using the standard library it contains.

These libraries contain efficient algorithms that you can use extensively while coding your own projects.

This saves ample amount of programming effort, which otherwise would have been wasted reinventing the wheel.

**Why should you learn C++ programming?**

**1. Irreplaceability**

With the use of C++ in the development of modern games, operating systems, browsers, and much more, it is safe to say that C++ is irreplaceable. Many major companies like Adobe, Amazon, Facebook, and Autodesk use C++ in their products.

**2. To learn the internal architecture of a computer**

Since C++ is a middle-level language, you will write code that interacts directly with the internal hardware of the computer. Due to this, you will understand how computer memory works and how information can be stored and retrieved.

It is sure to expand your knowledge on the architecture of the computer.

**3. Active Community and Open Source Projects**

C++ has a large supporting community. There are numerous active online forums which can come in handy if you are stuck anywhere in the learning process.

If you know C++, you can contribute to large open-source projects that impact hundreds of millions of people. Some of the larger open source projects where C++ programming is used are TensorFlow, Electron, OpenCV, etc.

**4. Familiarity with programming**

A lot of popular programming languages are based on C (and C++, considered superset of C programming with OOP features). Hence, if you know C and C++, you will not have any problem switching to another language.

**5. Job Opportunities**

C++ developers can expect an average of $100,000 salary with surplus job opportunities.

The requirement of jobs comes mostly for game development, rendering engines, and creating Windows applications.

**How you can learn to code in C++?**

**Learn C++ from Programiz**

Programiz offers dozens of tutorials and examples to help you learn C++ programming from scratch. Each tutorial is written in-depth with examples and detailed explanations.

**Learn C++ from Books**

It is always a good idea to learn to program from books. You will get the big picture of programming concepts in the book which you may not find elsewhere.

Here are 3 books we personally recommend.

* [The C++ Programming Language (4th Edition)](https://amzn.to/2ecpeMv) - a complete guide to C++ language, its features, and the design techniques written by the creator of C++
* [Programming -- Principles and Practice Using C++ (2nd Edition)](https://amzn.to/2dVdVID) - a beginner-friendly and introductory book for learning C++
* [C++ Coding Standards: 101 Rules, Guidelines, and Best Practices](https://amzn.to/2j7KNLN) - a small book for reference

**How to get better at C++?**

**Learning by doing**

Whatever medium you use to learn C++, it all comes down to practicing what you have done by writing programs. Only practice will make you a better programmer.

Don’t just copy other's code and run it. Take some time to think about what the code actually does. Replicate it on your system and see what errors occur and most importantly, learn from them.

**Follow C++ standards**

It is really important to follow a good C++ standard when you start programming. Even though they give you less freedom when you start out, they are helpful while are scaling your program and advancing in C++.

Take a look at [IsoCPP’s coding standard FAQ](https://isocpp.org/wiki/faq/coding-standards) and also follow the [C++ Core Guidelines](http://isocpp.github.io/CppCoreGuidelines/CppCoreGuidelines).

**Read C++ code written by others**

Join [Github’s open-source projects](https://github.com/trending/cpp) and read others' code. This can be overwhelming at first when you see all the code in the project. You can use [Code Whittling](http://patrick.lioi.net/2013/01/03/code-whittling/) to start small and only focus on one thing at a moment.

You’ll not only learn others' styles of coding but you’ll also understand how they think.

**Join C++ communities**

Get help from others. There are tons of great C++ communities that will help you solve real-life problems and most importantly, become a better developer.

Some of them are:

1. [StackOverflow](http://stackoverflow.com/questions/tagged/c%2b%2b) - Most Popular programming Q&A site on the web
2. [Codechef](https://www.codechef.com/) - Practice questions, challenges and a large community of programmers
3. [CodeProject](http://www.codeproject.com/) - For those who code, with in-depth articles and a huge community of coders

**Final Words**

We at Programiz think C++ is a terrific language to learn. Even for beginners, it helps to understand the working of programs and computers in general.

Learning any language takes time and that holds even more true for C++. Since it is not a high-level language, learning C++ can get overwhelming when you start and you will need to be prepared to put thoughtful hours to learn the basics.

This experience will, however, take you a long way to become a great developer.

Compiler

https://www.programiz.com/cpp-programming/online-compiler/