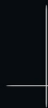


# C++ from Scratch

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# C++ from Scratch

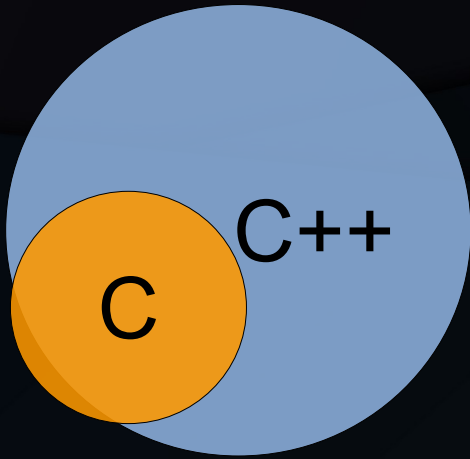
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## Why C++?

- It's popular (~4.4 million developers), widely used (OS, Browsers, Databases, ...) and one of the highest salary and demand in the software industry
- If you master C++ you will be able to learn any programming language fast and understand the fundamentals of computers better
- Many useful open source and builtin libraries
- Huge community (<https://cppcon.org/>)
- High performance because it's "closer" to the hardware
- Image Processing (OpenCV)
- Game industry (Unreal Engine)
- Embedded Systems (C/C++)
- Banking, Medical, Engineering Industries (reliable, real time and type safety)
- Portable (Linux, Windows, MacOS, Android, iOS)

# C++ from Scratch

- C is a subset of C++
- To understand C++ you must understand C
- Nearly every C program is also a C++ program



# C++ from Scratch

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Dividing this series in C and C++ has the following three advantages:

1. The border between C++ and C is clear
  2. C developers can jump ahead to C++
  3. Introduction of concepts in C++ are easier since C basics are covered
- To be a first class C++ developer you need to know where C ends and C++ starts
  - C++ developers are often required to write or maintain code in C especially in the embedded systems world

# C++ from Scratch

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## Part I

1. Overview of C
2. Expressions
3. Instructions
4. Arrays
5. Pointers
6. Functions
7. Structures, Unions and Enumerations
8. Console I/O in C style
9. File I/O in C style
10. Preprocessor and Comments

## Part II

1. Overview of C++
2. Classes and Objects
3. Arrays, Pointers and References
4. Function Overloading
5. Operator Overloading
6. Inheritance
7. Virtual functions and Polymorphism
8. Templates
9. Exception Handling
10. Console I/O in C++ style
11. File I/O in C++ style
12. Run-Time-Type-ID and Cast Operators
13. Namespaces and Conversion Functions
14. Standard-Template-Library (STL)
15. Threading

# C++ from Scratch

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- Github: <https://github.com/vkresch/cppfromscratch>
- OS: Ubuntu 20.04
- IDE: Visual Studio Code