

C++ Exercises and Solutions

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Introduction

What is C++?

C++ is a programming language that lets programmers implement their concepts in a variety of operating systems. C++ is used widely in areas such as graphics, user interface, and virtual reality.

It is widely employed for making video games, computer AIs, and other types of programs that are too complex for traditional languages. The use of C++ for a wide range of applications has led the language to be dubbed the ‘Swiss army knife’ of programming languages.

C++ was developed by Bjarne Stroustrup at Bell Labs in 1979 and first appeared in 1985 in several implementations. It was standardized in 1998 and there have been updated versions since.

Programming languages can be categorized in a number of ways. One thing that is common to most programming languages is that they are “compiled”, instead of “interpreted”.

This means that the source code is not read and executed line by line, but rather the whole source code is converted into a single machine language program before execution.

A compiler is a program that converts source code into executable programs. C++ programs need a compiler, you can run the executable program the compiler creates.

There are many C++ compilers, some popular ones are GNU g++, LLVM clang++ and Microsoft Visual C++ (MSVC). You can install them for free and use them.

While there many C++ compilers available, they all can work with the same C++

code (in so far as this book). So you can pick whichever you prefer. The `g++` compiler works in the command line (Linux, OS X) while the MSVC compiler works on Microsoft platforms only.

What's in this book?

This book contains C++ programming exercises and solutions. Simple enough to be solved in a few lines of code, complex enough to be challenging.

The exercises have been written by an experienced software developer. They are aimed at anyone who is interested in learning modern C++ programming and is looking to practice the language as well.

All of them are expected to compile without errors, regardless of whether you use GCC, Visual Studio C++ or another compiler.

Programming is best learned by practice. This is a practice book, not a theoretical one.

The idea of this book is that you solve the C++ programming exercises yourself. It is not a theoretical book, instead it encourages you to try to solve the problems using other available tools (blogs, books etc)

The book contains both exercises and solutions, but I encourage you to try to solve the exercises on your own. It doesn't harm to try the exercises multiple times, to get good at C++.

Chapter One

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