Introducing C++

C++ is an extension of the C programming language that was first implemented on the UNIX operating system by Dennis Ritchie way back in 1972. C is a flexible programming language that remains popular today and is used on a large number of platforms for everything from microcontrollers to the most advanced scientific systems.

C++ was developed by Dr. Bjarne Stroustrup between 1983-1985 while working at AT&T Bell Labs in New Jersey. He added features to the original C language to produce what he called "C with classes". These classes define programming objects with specific features that transform the procedural nature of C into the object-oriented programming language of C++.

The C programming language was so named as it succeeded an earlier programming language named "B" that had been introduced around 1970. The name "C++" displays some programmers' humor because the programming ++ increment operator denotes that C++ is an extension of the C language.

C++, like C, is not platform-dependent so programs can be created on any operating system. Most illustrations in this book depict output on the Windows operating system purely because it is the most widely used desktop platform. The examples can also be created on other platforms such as Linux or MacOS.

Why learn C++ programming?

The C++ language is favored by many professional programmers because it allows them to create fast, compact programs that are robust and portable.

Using a modern C++ Integrated Development Environment (IDE), such as Microsoft's Visual C++ Express Edition, the programmer can quickly create complex applications. But to use these tools to greatest effect the programmer must first learn quite a bit about the C++ language itself.

This book is an introduction to programming with C++, giving examples of program code and its output to demonstrate the basics of this powerful language.

A powerful programming language (pronounced "see plus plus") designed to let you express ideas.

Don't forget

Microsoft's free Visual C++ Express IDE is used in this book to demonstrate visual programming.

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Should I learn C first?

Opinion is divided on the question of whether it is an advantage to be familiar with C programming before moving on to C++. It would seem logical to learn the original language first in order to understand the larger extended language more readily. However, C++ is not simply a larger version of C as the approach to object-oriented programming with C++ is markedly different to the procedural nature of C. It is, therefore, arguably better to learn C++ without previous knowledge of C to avoid confusion.

This book makes no assumption that the reader has previous knowledge of any programming language so it is suitable for the beginner to programming in C++, whether they know C or not.

If you do feel that you would benefit from learning to program in C, before moving on to C++, we recommend you try the examples in "C Programming in easy steps" before reading this book.

Standardization of C++

As the C++ programming language gained in popularity it was adopted by many programmers around the world as their programming language of choice. Some of these programmers began to add their own extensions to the language so it became necessary to agree upon a precise version of C++ that could be commonly shared internationally by all programmers.

A standard version of C++ was defined by a joint committee of the American National Standards Institute (ANSI) and the Industry Organization for Standardization (ISO). This version is sometimes known as ANSI C++ and is portable to any platform and to any development environment.

The examples given in this book conform to ANSI C++. Example programs run in a console window, such as the Command Prompt window on Windows systems or a shell terminal window on Linux systems, to demonstrate the mechanics of the C++ language itself. An example in the final chapter illustrates how code generated automatically by a visual development tool on the Windows platform can, once you're familiar with the C++ language, be edited to create a graphical windowed application.

Hot tip

"ISO" is not an acronym but is derived from the Greek word "isos" meaning "equal" – as in "isometric".