Marius Bancila

Modern C++ Programming Cookbook

Over 100 recipes to help you overcome your difficulties with C++ programming and gain a deeper understanding of the working of modern C++

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Modern C++ Programming Cookbook

C++ is one of the oldest and most widely used programming languages. Fast, efficient, and flexible, it is used to solve many problems. The latest versions of C++ have seen programmers change the way they code, giving up on the old-fashioned C-style programming and adopting modern C++ instead.

Beginning with the modern language features, each recipe addresses a specific problem, with a discussion that explains the solution and offers insight into how it works. You will learn about concepts such as concurrency, variadic templates, lambda expressions, regular expressions, streams and filesystem utilities, algorithms and iterators, move semantics and performance, exception handling, testing, and more in the form of recipes. These recipes will ensure you can make your applications secure and fast.

By the end of the book, you will understand the newer aspects of C++ 11/14/17 and will be able to overcome tasks that are time-consuming or would break your stride while developing.

Things you will learn:

- Understand the standard support for threading and concurrency and learn how to put them to work on daily basic tasks
- Look in depth at the C++17 filesystem library
- Work with various types of string and look at the various aspects of compilation
- Explore functions, lambda expressions and callable objects with a focus on modern features
- Leverage the standard library and work with containers, algorithms, and iterators I/O, time and utilities
- Solve text searching and replacement problems using regular expressions
- Use the new utility additions to the standard library to solve common problems developers encounter, including string_view, any, optional, and variant types
- Explore the widely-used testing frameworks for C++ and implement various useful patterns and idioms

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About the Author

Marius Bancila is a software engineer with 14 years of experience in developing solutions for the industrial and financial sectors. He focuses on Microsoft technologies and mainly develops desktop applications with C++ and C#. Over the years, he has worked with other languages and technologies including Java, HTML/CSS, PHP, and JavaScript.

Marius is passionate about sharing his technical expertise with others, and for that reason, he has been recognized as a Microsoft MVP for more than a decade. He has been an active contributor to forums and other developer communities where he has published many articles, for which he has won multiple awards. He also created and contributed to several open source libraries. He is a cofounder of Codexpert, a Romanian community for C++ developers. He is based in Timisoara, Romania, and works as a system architect, building accounting and logistic solutions for a major European software vendor. He can be followed on Twitter at `https://twitter.com/mariusbancila`.

I would like to thank Packt Publishing for getting me on board with this wonderful project that I greatly enjoyed. Many thanks to Anurag Ghogre, Subhalaxmi Nadar and Nitin Dasan for the constant support shown throughout the project, as well as the other members of the team involved. A special thanks to David Corbin who provided valuable feedback to make this book better. Last, but not least, a big thank you to my wife who has been very patient and supportive through the many days and nights I spent writing this book.

About the Reviewer

David V. Corbin began programming during the heyday of the mini-computer era, starting with the DEC PDP-8. His early career was in the defense industry, progressing from the company's first software technician to being the technical lead of the engineering software department, with much of the work being done in C. He cofounded Dynamic Concepts in 1984 to facilitate the introduction of the PC into business environments (this is the same year the original IBM AT was introduced).

By the early 1990s, much of his application development had started migrating to C++. Even after 25 years, C++ remains a valued tool in his development arsenal. In 2005, he began to focus on improving the software development and delivery process via the application of ALM principles. Today, he continues as the President and Chief Architect of Dynamic Concepts and works directly with clients, providing guidance in the rapidly changing ecosystem.

I would like to thank Packt Publishing for the opportunity to be a technical reviewer of this book. I have known Marius Bancila for a decade and he is one of the brightest developers I have known. His work is sure to have a positive impact on the entire C++ developer community in their quest to become familiar with the modern elements of C++.

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