



Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming

By Christopher Kormanyos

[Download now](#)

[Read Online](#) 

Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming

By Christopher Kormanyos

The C++ language has powerful object-oriented and template features that can improve software design and portability while simultaneously reducing code complexity and the risk of error. Furthermore, C++ compiles highly efficient native code. This unique and effective combination makes C++ well-suited for programming microcontroller systems that require compact size, high performance and safety-critical reliability.

With this book, Chris Kormanyos delivers a highly practical guide to programming real-time embedded microcontroller systems in C++. It is divided into three parts plus several appendices. Part I provides a foundation for real-time C++ by covering language technologies, including object-oriented methods, template programming and optimization. Next, part II presents detailed descriptions of a variety of C++ components that are widely used in microcontroller programming. It details some of C++'s most powerful language elements, such as class types, templates and the STL, to develop components for microcontroller register access, low-level drivers, custom memory management, embedded containers, multitasking, etc. Finally, part III describes mathematical methods and generic utilities that can be employed to solve recurring problems in real-time C++. The appendices include a brief C++ language tutorial, information on the real-time C++ development environment and instructions for building GNU GCC cross-compilers and a microcontroller circuit.

The most recent specification of C++11 in ISO/IEC 14882:2011 is used throughout the text. To facilitate portability, no libraries other than those specified in the language standard itself are used. Efficiency is always in focus and numerous examples are backed up with real-time performance measurements and size analyses that quantify the true costs of the code down to the very last byte and microsecond.

The target audience of this book mainly consists of students and professionals interested in real-time C++. Readers should be familiar with C or another programming language and will benefit most if they have had some previous experience with microcontroller electronics and the performance and size issues

prevalent in embedded systems programming.

 [Download Real-Time C++: Efficient Object-Oriented and Templ ...pdf](#)

 [Read Online Real-Time C++: Efficient Object-Oriented and Tem ...pdf](#)

Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming

By Christopher Kormanyos

Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming By Christopher Kormanyos

The C++ language has powerful object-oriented and template features that can improve software design and portability while simultaneously reducing code complexity and the risk of error. Furthermore, C++ compiles highly efficient native code. This unique and effective combination makes C++ well-suited for programming microcontroller systems that require compact size, high performance and safety-critical reliability.

With this book, Chris Kormanyos delivers a highly practical guide to programming real-time embedded microcontroller systems in C++. It is divided into three parts plus several appendices. Part I provides a foundation for real-time C++ by covering language technologies, including object-oriented methods, template programming and optimization. Next, part II presents detailed descriptions of a variety of C++ components that are widely used in microcontroller programming. It details some of C++'s most powerful language elements, such as class types, templates and the STL, to develop components for microcontroller register access, low-level drivers, custom memory management, embedded containers, multitasking, etc. Finally, part III describes mathematical methods and generic utilities that can be employed to solve recurring problems in real-time C++. The appendices include a brief C++ language tutorial, information on the real-time C++ development environment and instructions for building GNU GCC cross-compilers and a microcontroller circuit.

The most recent specification of C++11 in ISO/IEC 14882:2011 is used throughout the text. To facilitate portability, no libraries other than those specified in the language standard itself are used. Efficiency is always in focus and numerous examples are backed up with real-time performance measurements and size analyses that quantify the true costs of the code down to the very last byte and microsecond.

The target audience of this book mainly consists of students and professionals interested in real-time C++. Readers should be familiar with C or another programming language and will benefit most if they have had some previous experience with microcontroller electronics and the performance and size issues prevalent in embedded systems programming.

Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming By Christopher Kormanyos **Bibliography**

- Sales Rank: #1729029 in Books
- Published on: 2013-03-16
- Original language: English
- Number of items: 1
- Dimensions: 9.21" h x .88" w x 6.14" l, 1.49 pounds
- Binding: Hardcover
- 360 pages

 [Download](#) Real-Time C++: Efficient Object-Oriented and Templ ...pdf

 [Read Online](#) Real-Time C++: Efficient Object-Oriented and Tem ...pdf

Download and Read Free Online Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming By Christopher Kormanyos

Editorial Review

Review

From the reviews:

“In this book, Kormanyos, a microcontroller programmer with significant industrial experience, delivers a practical real-time embedded system programming guide in C++. The book teaches by example, providing plenty of motivation. ... The author focuses on creating efficient code, both time- and space-wise, with technique exposure specific to embedded systems. Overall, this book is a good practical guide, beneficial to both students and professionals interested in real-time C++ programming. Summing Up: Recommended. Upper-division undergraduates and above.” (D. Papamichail, Choice, Vol. 51 (3), November, 2013)

Programmers seeking information about real-time performance or advanced knowledge of the C++ language will delight in this book. The reader is led along the arduous road of templates, generic metaprogramming, and object-oriented techniques using a diverse collection of code examples. The ultimate goal of implementing real-time embedded microcontroller systems using C++ is brilliantly achieved, opening the door for extension to real-time applications.” (Andre Maximo, ACM Computing Reviews, October, 2013)

“This is a gentle introduction to using C++11 in real-time projects. (...) It shows that C++11 is a reasonable choice for embedded work. Overall, a good tutorial for C++ developers who want to get their feet wet in embedded programming.” (Andrew Binstock, Dr. Dobb’s, May, 2013)

From the Back Cover

The C++ language has powerful object-oriented and template features that can improve software design and portability while simultaneously reducing code complexity and the risk of error. Furthermore, C++ compiles highly efficient native code. This unique and effective combination makes C++ well-suited for programming microcontroller systems that require compact size, high performance and safety-critical reliability.

With this book, Chris Kormanyos delivers a highly practical guide to programming real-time embedded microcontroller systems in C++. It is divided into three parts plus several appendices. Part I provides a foundation for real-time C++ by covering language technologies, including object-oriented methods, template programming and optimization. Next, part II presents detailed descriptions of a variety of C++ components that are widely used in microcontroller programming. It details some of C++’s most powerful language elements, such as class types, templates and the STL, to develop components for microcontroller register access, low-level drivers, custom memory management, embedded containers, multitasking, etc. Finally, part III describes mathematical methods and generic utilities that can be employed to solve recurring problems in real-time C++. The appendices include a brief C++ language tutorial, information on the real-time C++ development environment and instructions for building GNU GCC cross-compilers and a microcontroller circuit.

The most recent specification of C++11 in ISO/IEC 14882:2011 is used throughout the text. To facilitate portability, no libraries other than those specified in the language standard itself are used. Efficiency is

always in focus and numerous examples are backed up with real-time performance measurements and size analyses that quantify the true costs of the code down to the very last byte and microsecond.

The target audience of this book mainly consists of students and professionals interested in real-time C++. Readers should be familiar with C or another programming language and will benefit most if they have had some previous experience with microcontroller electronics and the performance and size issues prevalent in embedded systems programming.

About the Author

Chris Kormanyos is a senior system architect at a major automotive supplier with 20 years experience in software development, microcontroller system design and application deployment. Chris is well-connected in the microcontroller industry and has strong professional ties to both tier-one silicon suppliers as well as compiler and tool vendors. He received a PhD in experimental particle physics from the University of Colorado in 1994 and also holds several patents for automotive electronic technologies.

Users Review

From reader reviews:

Betty Adkins:

Do you have favorite book? If you have, what is your favorite's book? E-book is very important thing for us to be aware of everything in the world. Each publication has different aim or even goal; it means that book has different type. Some people really feel enjoy to spend their the perfect time to read a book. They are really reading whatever they have because their hobby is definitely reading a book. Consider the person who don't like reading through a book? Sometime, individual feel need book if they found difficult problem as well as exercise. Well, probably you will need this Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming.

Jeffrey Lockwood:

Have you spare time for any day? What do you do when you have a lot more or little spare time? That's why, you can choose the suitable activity for spend your time. Any person spent all their spare time to take a walk, shopping, or went to the Mall. How about open or read a book entitled Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming? Maybe it is for being best activity for you. You understand beside you can spend your time along with your favorite's book, you can cleverer than before. Do you agree with it has the opinion or you have various other opinion?

Linda Porter:

The book Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming make you feel enjoy for your spare time. You can utilize to make your capable much more increase. Book can to become your best friend when you getting tension or having big problem along with your subject. If you can make reading through a book Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming being your habit, you can get far more advantages, like add your own personal capable,

increase your knowledge about many or all subjects. You can know everything if you like open up and read a publication Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming. Kinds of book are a lot of. It means that, science e-book or encyclopedia or other people. So , how do you think about this book?

Ernestine Biggs:

In this 21st millennium, people become competitive in most way. By being competitive at this point, people have do something to make these people survives, being in the middle of typically the crowded place and notice simply by surrounding. One thing that often many people have underestimated the item for a while is reading. Sure, by reading a e-book your ability to survive improve then having chance to endure than other is high. For you who want to start reading any book, we give you that Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming book as beginning and daily reading e-book. Why, because this book is greater than just a book.

Download and Read Online Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming By Christopher Kormanyos #NRV9148Q5LK

Read Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming By Christopher Kormanyos for online ebook

Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming By Christopher Kormanyos Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming By Christopher Kormanyos books to read online.

Online Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming By Christopher Kormanyos ebook PDF download

Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming By Christopher Kormanyos Doc

Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming By Christopher Kormanyos MobiPocket

Real-Time C++: Efficient Object-Oriented and Template Microcontroller Programming By Christopher Kormanyos EPub