



Modern C++ Design

*Generic Programming
and Design Patterns Applied*

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C++ In-Depth Series • Bjarne Stroustrup

Modern C Design Generic Programming And Design Patterns Applied

Jeffrey David Meese



Modern C Design Generic Programming And Design Patterns Applied:

Modern C++ Design Andrei Alexandrescu, 2001-02-13 Modern C Design Andrei Alexandrescu opens new vistas for C programmers Displaying extraordinary creativity and programming virtuosity Alexandrescu offers a cutting edge approach to design that unites design patterns generic programming and C enabling programmers to achieve expressive flexible and highly reusable code This book introduces the concept of generic components reusable design templates that produce boilerplate code for compiler consumption all within C Generic components enable an easier and more seamless transition from design to application code generate code that better expresses the original design intention and support the reuse of design structures with minimal recoding The author describes the specific C techniques and features that are used in building generic components and goes on to implement industrial strength generic components for real world applications Recurring issues that C developers face in their day to day activity are discussed in depth and implemented in a generic way These include Policy based design for flexibility Partial template specialization Typelists powerful type manipulation structures Patterns such as Visitor Singleton Command and Factories Multi method engines For each generic component the book presents the fundamental problems and design options and finally implements a generic solution In addition an accompanying Web site <http://www.awl.com/cseng/titles/0201704315> makes the code implementations available for the generic components in the book and provides a free downloadable C library called Loki created by the author Loki provides out of the box functionality for virtually any C project Get a value added service Try out all the examples from this book at www.codesaw.com CodeSaw is a free online learning tool that allows you to experiment with live code from your book right in your browser

Professional C++ Marc Gregoire, 2018-03-09 Get up to date quickly on the new changes coming with C 17 Professional C is the advanced manual for C programming Designed to help experienced developers get more out of the latest release this book skims over the basics and dives right in to exploiting the full capabilities of C 17 Each feature is explained by example each including actual code snippets that you can plug into your own applications Case studies include extensive working code that has been tested on Windows and Linux and the author's expert tips tricks and workarounds can dramatically enhance your workflow Even many experienced developers have never fully explored the boundaries of the language's capabilities this book reveals the advanced features you never knew about and drills down to show you how to turn these features into real world solutions The C 17 release includes changes that impact the way you work with C this new fourth edition covers them all including nested namespaces structured bindings `string_view` template argument deduction for constructors parallel algorithms generalized sum algorithms Boyer Moore string searching string conversion primitives a filesystem API clamping values optional values the variant type the any type and more Clear explanations and professional level depth make this book an invaluable resource for any professional needing to get up to date quickly Maximize C capabilities with effective design solutions Master little known elements and learn what to avoid Adopt new workarounds and

testing debugging best practices Utilize real world program segments in your own applications C is notoriously complex and whether you use it for gaming or business maximizing its functionality means keeping up to date with the latest changes Whether these changes enhance your work or make it harder depends on how well versed you are in the newest C features Professional C gets you up to date quickly and provides the answers you need for everyday solutions **Applied C++** Philip Romanik,Amy Muntz,2003 This is an insightful guide to efficient practical solutions to real world C problems Concrete case studies run throughout the book and show how to develop quality C software *Journal of Object-oriented Programming* ,2001 **Design Patterns in Modern C++** Dmitri Nesteruk,2018-04-18 Apply modern C 17 to the implementations of classic design patterns As well as covering traditional design patterns this book fleshes out new patterns and approaches that will be useful to C developers The author presents concepts as a fun investigation of how problems can be solved in different ways along the way using varying degrees of technical sophistication and explaining different sorts of trade offs Design Patterns in Modern C also provides a technology demo for modern C showcasing how some of its latest features e g coroutines make difficult problems a lot easier to solve The examples in this book are all suitable for putting into production with only a few simplifications made in order to aid readability What You Will Learn Apply design patterns to modern C programming Use creational patterns of builder factories prototype and singleton Implement structural patterns such as adapter bridge decorator facade and more Work with the behavioral patterns such as chain of responsibility command iterator mediator and more Apply functional design patterns such as Monad and more Who This Book Is For Those with at least some prior programming experience especially in C *C++ Network Programming* Douglas C. Schmidt,Stephen D. Huston,2003 Writing high quality networked applications is difficult it s expensive complicated and error prone This book picks up where volume one left off and guides C programmers through using the Adaptive Communication Environment ACE the most complete toolkit available for networked programming **C/C++ Users Journal** ,2005 **C++ Template Metaprogramming** David Abrahams,Aleksey Gurtovoy,2005 This book is aimed at any programmer who is comfortable with idioms of the Standard Template Library STL C power users will gain a new insight into their existing work and a new fluency in the domain of metaprogramming Intermediate level programmers who have learned a few advanced template techniques will see where these tricks fit in the big picture and will gain the conceptual foundation to use them with discipline Programmers who have caught the scent of metaprogramming but for whom it is still mysterious will finally gain a clear understanding of how when and why it works All readers will leave with a new tool of unprecedented power at their disposal the Boost Metaprogramming Library Jacket *Hands-On Design Patterns with C++* Fedor G. Pikus,2019-01-30 A comprehensive guide with extensive coverage on concepts such as OOP functional programming generic programming and STL along with the latest features of C Key FeaturesDelve into the core patterns and components of C in order to master application designLearn tricks techniques and best practices to solve common design and architectural challenges

Understand the limitation imposed by C and how to solve them using design patterns

Book Description C is a general purpose programming language designed with the goals of efficiency performance and flexibility in mind Design patterns are commonly accepted solutions to well recognized design problems In essence they are a library of reusable components only for software architecture and not for a concrete implementation The focus of this book is on the design patterns that naturally lend themselves to the needs of a C programmer and on the patterns that uniquely benefit from the features of C in particular the generic programming Armed with the knowledge of these patterns you will spend less time searching for a solution to a common problem and be familiar with the solutions developed from experience as well as their advantages and drawbacks The other use of design patterns is as a concise and an efficient way to communicate A pattern is a familiar and instantly recognizable solution to specific problem through its use sometimes with a single line of code we can convey a considerable amount of information The code conveys This is the problem we are facing these are additional considerations that are most important in our case hence the following well known solution was chosen By the end of this book you will have gained a comprehensive understanding of design patterns to create robust reusable and maintainable code What you will learn

Recognize the most common design patterns used in C Understand how to use C generic programming to solve common design problems Explore the most powerful C idioms their strengths and drawbacks Rediscover how to use popular C idioms with generic programming Understand the impact of design patterns on the program s performance Who this book is for This book is for experienced C developers and programmers who wish to learn about software design patterns and principles and apply them to create robust reusable and easily maintainable apps

Generative Programming and Component Engineering, 2003 Java Report, 2001 **Dr. Dobb's Journal**, 2005 **Large-Scale Software Architecture** Jeff Garland, Richard Anthony, 2003 In this book the authors show how to utilize software architecture as a tool to guide the development instead of capturing the architectural details after all the design decisions have been made They offer a concise description of UML usage for large scale architecture and discuss software architecture and design principles C++ Templates David Vandevor, Nicolai M. Josuttis, 2003 With the greatly increased use of templates there is a real need in the C community for this information This book is the next C classic acting as both a complete reference as well as a tutorial It emphasizes the practical use of templates and includes real world examples Mixed Element Formulation for the Finite Element-boundary Integral Method Jeffrey David Meese, 2003 Forthcoming Books Rose Arny, 2001 *Programming Languages* Kenneth C. Loudon, 2003 This text provides students with an overview of key issues in the study of programming languages Rather than focus on individual language issues Kenneth Loudon focuses on language paradigms and concepts that are common to all languages *MSDN Magazine*, 2005 2003 IEEE Nuclear Science Symposium, 2004 **Multi-agent and Multi-agent-based Simulation**, 2004

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