It will not take on many time as we accustom before. You can get it even if discharge duty something else at house and even in your workplace. for that reason easy! So, are you question? Just exercise just what we present under as with ease as evaluation financial instrument pricing using c what you similar to read!

An integrated guide to C++ and computational finance This complete guide to C++ and computational finance is a follow-up and major extension to Daniel J. Duffy's 2004 edition of Financial Instrument Pricing Using C++. Both C++ and computational finance have evolved and changed dramatically in the last ten years and this book documents these improvements. Duffy focuses on these developments and the advantages for the quant developer by: Delving into a detailed account of the new C++11 standard and its applicability to computational finance. Using de-facto standard libraries, such as Boost and Eigen to improve developer productivity. Developing multiparadigm software using the object-oriented, generic, and functional programming styles. Designing flexible numerical algorithms: modern numerical methods and multiparadigm design patterns. Providing a detailed explanation of the Finite Difference Methods through six chapters, including new developments such as ADE, Method of Lines (MOL), and Uncertain Volatility Models. Developing applications, from financial model to algorithmic design and code, through a coherent approach. Generating interoperability with Excel add-ins, C#, and C++/CLI. Using random number generation in C++11 and Monte Carlo simulation. Duffy adopted a spiral model approach while writing each chapter of Financial Instrument Pricing Using C++ 2e: analyze a little, design a little, and code a little. Each cycle ends with a working prototype in C++ and shows how a given algorithm or numerical method works. Additionally, each chapter contains non-trivial exercises and projects that discuss improvements and extensions to the material. This book is for designers and application developers in computational finance, and assumes the reader has some fundamental experience of C++ and derivatives pricing. HOW TO RECEIVE THE SOURCE CODE Once you have purchased a copy of the book please send an email to the author dduffyATdatasim.nl requesting your personal and non-transferable copy of the source code. Proof of purchase is needed. The subject of the mail should be "C++ Book Source Code Request". You will receive a reply with a zip file attachment.

Financial Instrument Pricing Using C++ - Daniel J. Duffy - 2013-10-23
One of the best languages for the development of financial engineering and instrument pricing applications is C++. This book has several features that allow developers to write robust, flexible and extensible software systems. The book is an ANSI/ISO standard, fully object-oriented and interfaces with many third-party applications. It has support for templates and generic programming, massive reusability using templates ("write once?" and support for legacy C applications. In this book, author Daniel J. Duffy brings C++ to the next level by applying it to the design and implementation of classes, libraries and applications for option and derivative pricing models. He employs modern software engineering techniques to produce industrial-strength applications: Using the Standard Template Library (STL) in finance Creating your own template classes and functions Reusable data structures for vectors, matrices and tensors Classes for numerical analysis (numerical linear algebra ?) Solving the Black Scholes equations, exact and approximate solutions Implementing the Finite Difference Method in C++ Integration with the ?Gang of Four? Design Patterns Interfacing with Excel (output and Add-Ins) Financial engineering and XML Cash flow and yield curves Included with the book is a CD containing the source code in the Datosim Financial Toolkit. You can use this to get up to speed with your C++ applications by reusing existing classes and libraries. 'Unique Let's all give a warm welcome to modern pricing tools.' - Paul Wilmott, mathematician, author and fund manager

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This practical book shows how to deal with the complicated area of accounting of financial instruments. Containing a huge number of sophisticated worked examples, the book treats this complex subject in a way that gives clear guidance on the subject. In an introductory, controversial overview of the subject, the book highlights the mistakes that both auditing firms and the accounting standard setters are making, and demonstrates the contribution the International Financial Reporting Standards have made to the current credit crisis.
and data structures. The book teaches everything you need to know to solve realistic financial problems in C++. It Securitization - Vinod Kothyari - 2006-08-16

Get a thorough explanation of the nuances of securitization in the global business market with this comprehensive resource. Synthetized secuiritization and structured products are revolutionizing the financial industry and changing the way banks, institutional investors, and securities traders do business both domestically and globally. Written by a top international trainer and expert on securitization, this book is an ideal way for all market practitioners, whether investors, bankers, or analysts, to ensure they understand the ins and outs of this practice.

Numerical Methods in Finance with C++ - Maciej J. Capiński - 2012-08-02

Provides aspiring quant developers with the numerical techniques and programming skills needed in quantitative finance. No programming background required.

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Modern Computational Finance - Antoine Savine - 2021-11-02

An incisive and essential guide to building a complete system for derivative scripting In Volume 2 of Modern Computational Finance Scripting for Derivatives and xVA, quantitative finance experts and practitioners Drs. Antoine Savine and Jesper Andreasen deliver an indispensable and insightful roadmap to the interogation, aggregation, and manipulation of cash-flows in a variety of ways. The book demonstrates how to facilitate portfolio-wide risk assessment and regulatory calculations (like xVA). Complete with a professional scripting library written in modern C++, this stand-alone volume walks readers through the construction of a comprehensive risk and valuation tool. This essential book also offers: Effective strategies for improving scripting libraries, from basic examples—like support for dates and vectors—to advanced improvements, including American Monte Carlo techniques Exploration of the concepts of fuzzy logic and risk sensitivities, including support for smoothing and condition domains Discussion of the application of scripting to xVA, complete with a full treatment of branching Perfect for quantitative analysts, risk professionals, system developers, derivatives traders, and financial analysts. Modern Computational Finance Scripting for Derivatives and xVA; Volume 2 is also a must-read resource for students and teachers in master’s and PhD finance programs.

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C++ for Financial Mathematics - John Armstrong - 2017-01-06

If you know a little bit about financial mathematics but don’t yet know a lot about programming, then C++ for Financial Mathematics is for you. C++ is an essential skill for many jobs in quantitative finance, but learning it can be a daunting prospect. This book gathers together everything you need to know to price derivatives in C++ without unnecessary complexities or technicalities. It leads the reader step-by-step from programming novice to writing a sophisticated and flexible financial mathematics library. At every step, each new idea is motivated and illustrated with concrete financial examples. As employers understand, there is more to programming than knowing a computer language. As well as covering the core language features of C++, this book teaches the skills needed to write truly high quality software. These include topics such as unit tests, debugging, design patterns can be used for self-study or as a textbook for an advanced undergraduate or master’s level course.

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Accounting for Financial Instruments - Emanuel Camilleri - 2017-05-12

Accounting for Financial Instruments is about the accounting and regulatory framework associated with the acquisition and disposal of financial instruments; how to determine their value; how to manage the risk connected with them; and ultimately compile a business valuation report. Specifically, the book covers the following topics, amongst others: Accounting for Investments; Bills of exchange; Management of Financial Risks; Financial Analysis (including the Financial Analysis Report); Valuation of a business (including the Business Valuation Report) and Money laundering. Accounting for Financial Instruments fills a gap in the current literature for a comprehensive text that brings together relevant accounting concepts and valid regulatory framework, and related procedures regarding the management of financial instruments (investments), which are applicable in the modern business world. Understanding financial risk management allows the reader to comprehend the importance of analysing a business concern. This is achieved by presenting an analytical framework to illustrate that an entity’s performance is greatly influenced by its external and internal environments. The analysis of the external environment examines factors that impact an entity’s operational activities, strategic choices, and influence its opportunities and risks. The analysis of the internal environment looks at an entity’s financial statements to examine various elements, including liquidity, profitability, asset utilisation, investment, working capital management and capital structure. The objective of the book is to provide a fundamental knowledge base for those who are interested in managing financial instruments (investments) or studying banking and finance or those who wish to make financial services, particularly banking and finance, their chosen career. Accounting for Financial Instruments is highly applicable to both professional accountants and auditors and students alike.

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Financial Asset Pricing Theory - Claus Munk - 2013-04-18

Financial Asset Pricing Theory offers a comprehensive overview of the classic and the current research in theoretical asset pricing. Asset pricing is developed around the concept of a state-price deflator which relates the price of any asset to its future (risky) dividends and thus incorporates how to adjust for both time and risk in asset valuation. The willingness of any utility-maximizing investor to shift consumption over time defines a state-price deflator which provides a link between optimal consumption and asset prices. The Consumption-based Capital Asset Pricing Model (CCAPM). A simple version of the CCAPM cannot explain various stylized asset pricing facts, but these asset pricing ‘puzzles’ can be resolved by a number of recent extensions involving habit formation, recursive utility, multiple consumption goods, and long-run consumption risks. Other valuation techniques and modelling approaches (such as factor models, term structure models, risk-neutral valuation, and option pricing models) are explained and related to state-price deflators. The book will serve as a textbook for an advanced course in theoretical financial economics in a PhD or a quantitative Master of Science program. It will also be a useful reference book for researchers and finance professionals. The presentation in the book balances formal mathematical modelling and economic intuition and understanding. Both discrete-time and continuous-time models are covered. The necessary concepts and techniques concerning stochastic processes are carefully explained in a separate chapter so that only limited previous exposure to dynamic finance models is required.

Numerical Methods in Computational Finance - Daniel J. Duffy - 2021-07-06

Numerical Methods in Computational Finance: A Partial Differential Equation (PDE/FDM) Approach defines a repeatable process to introduce PDEs in finance, analyse them mathematically, devise robust and accurate numerical approximations to approximate these PDEs and then map these algorithms to C++ and C#. Written in an incremental way in order to facilitate a range of readers at various skill levels and experience, each chapter contains hands-on exercises and projects that form an integral part of the text. The book consists of eight parts. Each part contains several chapters and deals with a single autonomous topic: PDEs (generic) PDEs in finance Fundamentals FDM (generic) FDM in finance Advanced FDM (generic) Advanced FDM in finance Software Frameworks in C++ and C# Applications of machine learning in computational finance

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The world of quantitative finance (QF) is one of the fastest growing areas of research and its practical applications to derivatives pricing problem. Since the discovery of the famous Black-Scholes equation in the 1970’s we have seen a surge in the number of models for a wide range of products such as plain and exotic options, interest rate derivatives, real options and many others. Gone are the days when it was possible to price these derivatives analytically. For most problems we must resort to some kind of approximate method. In this book we employ partial differential equations (PDE) to describe a range of one-factor and multi-factor derivatives products such as plain European and American options, multi-asset options, Asian options, interest rate options and real options. PDE techniques allow us to create a framework for modeling complex and interesting derivatives products. Having defined the PDE problem we then approximate it using the Finite Difference Method (FDM). This method has been used for many application areas such as fluid dynamics, heat transfer, semiconductor simulation and astrophysics, to name just a few. In this book we apply the same techniques to pricing real-life derivative products. We use both traditional (or well-known) methods as well as a number of advanced schemes that are making their way into the QF literature: Crank-Nicolson, exponentially fitted and higher-order schemes for one-factor and multi-factor options Early exercise features and approximation using front-fixing, penalty and variational methods Modelling stochastic volatility models using Splitting methods Critique of ADI and Crank-Nicolson schemes; when they work and when they don’t work Modelling jumps using Partial Integro Differential Equations (PIDE) Free and moving boundary value problems in QF Included with the book is a CD containing information on how to set up FDM algorithms, how to map these algorithms to C++ as well as several working programs for one-factor and two-factor models. We also provide source code so that you can customize the applications to suit your own needs.

Implementing QuantLib. Quantitative Finance in C++: an Inside Look at the Architecture of the QuantLib Library - Luigi Ballabio - 2020

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Numerical Methods in Finance and Economics - Paolo Brandimarte - 2013-06-06

A state-of-the-art introduction to the powerful mathematical and statistical tools used in the field of finance The use of mathematical models and numerical techniques is a practice employed by a growing number of applied mathematicians working on applications in finance. Reflecting this development, Numerical Methods in Finance
obtaining a trading system whose impressive backtest results continue when the system is put to use in a trading
computational practice while showing readers how to utilize MATLAB? the powerful numerical computing
environment for financial applications. The author provides an essential foundation in finance and numerical
analysis in addition to background material for students from both engineering and economics perspectives. A
wide range of topics is covered, including standard numerical analysis methods, Monte Carlo methods to simulate
systems affected by significant uncertainty, and optimization methods to find an optimal set of decisions. Among
this book’s most outstanding features is the integration of MATLAB?, which helps students and practitioners solve
relevant problems in finance, such as portfolio management and derivatives pricing. It is useful in connecting theory with practice in the application of classical numerical methods and advanced methods, while illustrating underlying algorithmic concepts in concrete terms. Newly featured in the Second Edition: In-depth
treatment of Monte Carlo methods with due attention paid to variance reduction strategies * New appendix on
AMPL in order to better illustrate the optimization models in Chapters 11 and 12 * New chapter on binomial and trinomial lattices * Additional treatment of partial differential equations with two space dimensions * Expanded treatment within the chapter on financial theory to provide a more thorough background for engineers not familiar with finance * New coverage of advanced optimization methods and applications later in the text
treatments and more specialized literature, and it also uses algebraic languages, such as AMPL, to connect the pencil-and-paper statement of an optimization model with its solution by a software library. Offering computational practice in both financial engineering and economics fields, this book equips practitioners with the necessary techniques to measure and manage risk.
Statistically Sound Machine Learning for Algorithmic Trading of Financial Instruments - David Aronson - 2013
This book serves two purposes. First, it teaches the importance of using sophisticated yet accessible statistical
methods to evaluate a trading system before it is put to real-world use. In order to accommodate readers having limited
mathematical background, these techniques are illustrated with step-by-step examples using actual market data, and all examples are explained in plain language. Second, this book shows how the free program
TSSB (Trading System Synthesis & Boosting) can be used to develop and test trading systems. The machine
learning and statistical algorithms available in TSSB go far beyond those available in other off-the-shelf
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algorithms Evaluate the influence of good luck in backtests Detect overfitting before deploying your system
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ensembles of models to form consensus trade decisions Build optimal portfolios of trading systems and rigorously
test their expected performance Search thousands of markets to find subsets that are especially predictable
Create trading systems that specialize in specific market regimes such as trending/flat or high/low volatility
Information on the TSSB program can be found at TSSBsoftware dot com.
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Financial Instruments with Characteristics of Equity - 2018
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Computational Finance - George Levy - 2003-12-17
Computational Finance presents a modern computational approach to mathematical finance within the Windows
environment, and contains financial algorithms, mathematical proofs and computer code in C/C++. The author
illustrates how numeric components can be developed which allow financial routines to be easily called by the
complete range of Windows applications such as Excel, Borland Delphi, Visual Basic and Visual C++. These
components permit software developers to call mathematical finance functions more easily than in corresponding
packages. Although these packages may offer the advantage of interactive interfaces, it is not easy or
computationally efficient to call them programmatically as a component of a larger system. The components are
therefore well suited to software developers who want to include finance routines into a new application. Typical
readers are expected to have a knowledge of calculi, differential equations, statistics, Microsoft Excel, Visual Basic,
C++ and HTML. Enables reader to incorporate advanced financial modelling techniques in Windows
compatible software Aids the development of bespoke software solutions covering GARCH volatility modelling,
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International Convergence of Capital Measurement and Capital Standards - - 2004
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Fair Value Measurements - International Accounting Standards Board - 2006
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Wiley IFRS - Abbas A. Mirza - 2010-12-28
Wiley IFRS: Practical Implementation Guide and Workbook, Second Edition is a quick reference guide on IFRS/IAS that includes easy-to-understand IFRS/IAS standards outlines, practical insights, case studies with solutions, illustrations and multiple-choice questions with solutions. The book greatly facilitates your understanding of the practical implementation issues involved in applying these complex "principles-based" standards. PS-Line

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Taxing the Financial Sector - Mr.Howell H. Zee - 2004-04-16
One of the most complex issues in tax policy today is the treatment of the institutions, products, and services that make up the financial sector. It can be harder to ascertain income, expenses, and profits for financial firms than for firms selling goods and services, and it is easier for individuals and firms to manipulate financial transactions so as to exploit tax loopholes. This volume explores the challenges faced by tax policymakers and identifies modern best practices in several areas: banks, insurance companies, securities companies, investment funds, pension funds, and derivatives.

Market Risk Analysis, Pricing, Hedging and Trading Financial Instruments - Carol Alexander - 2008-09-15
Written by leading market risk academic, Professor Carol Alexander, Pricing, Hedging and Trading Financial Instruments forms part three of the Market Risk Analysis four volume set. This book is an in-depth, practical and accessible guide to the models that are used for pricing and the strategies that are used for hedging financial instruments, and to the markets in which they trade. It provides a comprehensive, rigorous and accessible introduction to bonds, swaps, futures and forwards and options, including variance swaps, volatility indices and their futures and options, to stochastic volatility models and to modelling the implied and local volatility surfaces. All together, the Market Risk Analysis four volume set illustrates virtually every concept or formula with a practical, numerical example or a longer, empirical case study. Across all four volumes there are approximately 300 numerical and empirical examples, 400 graphs and figures and 30 case studies many of which are contained in interactive Excel spreadsheets available from the the accompanying CD-ROM. Empirical examples and case studies specific to this volume include: Duration-Convexity approximation to bond portfolios, and portfolio immunization; Pricing floats and vanilla, basis and variance swaps; Coupon stripping and yield curve fitting; Proxy hedging, and hedging international securities and energy futures portfolios; Pricing models for European exotics, including barriers, Asians, look-backs, choosers, capped, contingent, power, quanto, compo, exchange, ‘best-of’ and spread options; Libor model calibration; Dynamic models for implied volatility based on principal component analysis; Calibration of stochastic volatility models (Matlab code); Simulations from stochastic volatility and jump models; Duration, PV01 and volatility invariant cash flow mappings; Delta-gamma-theta-vega mappings for options portfolios; Volatility beta mapping to volatility indices.

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Boost C++ libraries to create flexible applications. We discuss approximately 20 advanced libraries that can be IFRS 7 - International Accounting Standards Board - 2005

**Derivatives Analytics with Python** - Yves Hilpisch - 2015-08-03
Supercharge options analytics and hedging using the power of Python Derivatives Analytics with Python shows you how to implement market-consistent valuation and hedging approaches using advanced financial models, efficient numerical techniques, and the powerful capabilities of the Python programming language. This unique guide offers detailed explanations of all theory, methods, and processes, giving you the background and tools necessary to value stock index options from a sound foundation. You'll find and use self-contained Python scripts and modules and learn how to apply Python to advanced data and derivatives analytics as you benefit from the 5,000+ lines of code that are provided to help you reproduce the results and graphics presented. Coverage includes market data analysis, risk-neutral valuation, Monte Carlo simulation, model calibration, valuation, and dynamic hedging, with models that exhibit stochastic volatility, jump components, stochastic short rates, and more. The companion website features all code and Jupyter Notebooks for immediate execution and automation. Python is gaining ground in the derivatives analytics space, allowing institutions to quickly and efficiently deliver portfolio, trading, and risk management results. This book is the finance professional's guide to exploiting Python's capabilities for efficient and performing derivatives analytics. Reproduce major stylized facts of equity and options markets yourself Apply Fourier transform techniques and advanced Monte Carlo pricing Calibrate advanced option pricing models to market data Integrate advanced models and numeric methods to dynamically hedge options Recent developments in the Python ecosystem enable analysts to implement analytics tasks as performing as with C or C++, but using only about one-tenth of the code or even less. Derivatives Analytics with Python — Data Analysis, Models, Simulation, Calibration and Hedging shows you what you need to know to supercharge your derivatives and risk analytics efforts.

**Numerical Methods in Finance** - University of Cambridge. #The #Isaac Newton Institute of Mathematical Sciences (Cambridge) - 1997-06-26
Numerical Methods in Finance describes a wide variety of numerical methods used in financial analysis.

**Introduction to the Boost C++ Libraries; Volume II - Advanced Libraries** - Robert Demming - 2012-02
This book is the follow-up of the Boost Volume I book and it has been written for software developers who use Boost C++ libraries to create flexible applications. We discuss approximately 20 advanced libraries that can be classified into the following major categories: Mathematics: special functions, statistical distributions, interval arithmetic and matrix algebra. Special data structures: date and time, circular buffer, UUID, dynamic bitsets, pool memory, TCP and UDP portable network programming using the software interface. Interprocess communication and shared memory programming models. Three chapters on graphs, graph algorithms and their implementation in Boost. The focus is hands-on and each library is discussed in detail and numerous working examples are given to get the reader up to speed as soon as possible. Each library is described in a step-by-step fashion and you can use the corresponding code as a basis for more advanced applications. These libraries are the ideal basis for new applications. We shall use them in Volume III of the current series when we discuss applications to engineering, science and computational finance. With the Authors Robert Demming is software designer, developer and trainer and he has been involved with software projects in the areas of optical technology, process control, CAD and order processing systems since 1979. He is designer, algorithm builder and trainer. He has a PhD in numerical analysis from Trinity College, Dublin. One of the projects that he is involved in is applying the Boost libraries to computational finance."

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This is the practical introduction to the analytical approach taken in Volume 2. Based upon courses in partial differential equations over the last two decades, the text covers the classic canonical equations, with the method of separation of variables introduced at an early stage. The characteristic method for first order equations acts as an introduction to the classification of second order quasi-linear problems by characteristics. Attention then moves to different co-ordinate systems, primarily those with cylindrical or spherical symmetry. Hence a discussion of special functions arises quite naturally, and in each case the major properties are derived. The next section deals with the use of integral transforms and extensive methods for inverting them, and concludes with links to the use of Fourier series.

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Financial Modeling Using C++ • Chandan Sengupta • 2007-10-05
A detailed look at developing real-world financial models using C++ This book, designed for self-study, reference, and classroom use, outlines a comprehensive approach to creating both simple and advanced financial models using C++. Author and modeling expert Chandan Sengupta covers programming, the C++ language, and financial modeling from the ground up—assuming no prior knowledge in these areas—and shows through numerous examples how to combine these skills with financial theory and mathematics to develop practical financial models. Since C++ is the computer language used most often to develop large-scale financial models and systems, readers will find this work—which includes a CD-ROM containing the models and codes from the book—an essential asset in their current and future endeavors. Chandan Sengupta (White Plains, NY) teaches finance in the MBA program at the Fordham University Graduate School of Business. He is also the author of Financial Modeling Using Excel and VBA (0-471-26768-6).

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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 Features Delve into the core patterns and components of C++ in order to master application design Learn 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 the models and solutions developed from experience, as well as their advantages and drawbacks. The other use of design patterns is to make the code more 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

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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.

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