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Introduction to Design Patterns in C++ with Qt

Prentice Hall Master C++ "The Qt Way" with Modern Design Patterns and Efficient Reuse This fully updated, classroom-tested book teaches C++ "The Qt Way," emphasizing design patterns and efficient reuse. Readers will master both the C++ language and Qt libraries, as they learn to develop maintainable software with well-defined code layers and simple, reusable classes and functions. Every chapter of this edition has been improved with new content, better organization, or both. Readers will find extensively revised coverage of QObjects, Reflection, Widgets, Main Windows, Models and Views, Databases, Multi-Threaded Programming, and Reflection. This edition introduces the powerful new Qt Creator IDE; presents new multimedia APIs; and offers extended coverage of Qt Designer and C++ Integration. It has been restructured to help readers start writing software immediately and write robust, effective software sooner. The authors introduce several new design patterns, add many quiz questions and labs, and present more efficient solutions relying on new Qt features and best practices. They also provide an up-to-date C++ reference section and a complete application case study. Master C++ keywords, literals, identifiers, declarations, types, and type conversions. Understand classes and objects, organize them, and describe their interrelationships. Learn consistent programming style and naming rules. Use lists, functions, and other essential techniques. Define inheritance relationships to share code and promote reuse. Learn how code libraries are designed, built, and reused. Work with QObject, the base class underlying much of Qt. Build graphical user interfaces with Qt widgets. Use templates to write generic functions and classes. Master advanced reflective programming techniques. Use the Model-View framework to cleanly separate data and GUI classes. Validate input using regular expressions and other techniques. Parse XML data with SAX, DOM, and QDomStreamReader. Master today's most valuable creational and structural design patterns. Create, use, monitor, and debug processes and threads. Access databases with Qt's SQL classes. Manage memory reliably and efficiently. Understand how to effectively manage QThreads and use QtConcurrent algorithms. [Click here to obtain supplementary materials for this book.](#)

Head First Design Patterns

"O'Reilly Media, Inc." Using research in neurobiology, cognitive science and learning theory, this text loads patterns into your brain in a way that lets you put them to work immediately, makes you better at solving software design problems, and improves your ability to speak the language of patterns with others on your team.

Design Patterns

Elements of Reusable Object-Oriented Software

Pearson Deutschland GmbH Software -- Software Engineering.

Design Patterns Explained

A New Perspective on Object-Oriented Design

Pearson Education "One of the great things about the book is the way the authors explain concepts very simply using analogies rather than programming examples-this has been very inspiring for a product I'm working on: an audio-only introduction to OOP and software development." -Bruce Eckel "...I would expect that readers with a basic understanding of object-oriented programming and design would find this book useful, before approaching design

patterns completely. *Design Patterns Explained* complements the existing design patterns texts and may perform a very useful role, fitting between introductory texts such as *UML Distilled* and the more advanced patterns books." -James Noble Leverage the quality and productivity benefits of patterns-without the complexity! *Design Patterns Explained, Second Edition* is the field's simplest, clearest, most practical introduction to patterns. Using dozens of updated Java examples, it shows programmers and architects exactly how to use patterns to design, develop, and deliver software far more effectively. You'll start with a complete overview of the fundamental principles of patterns, and the role of object-oriented analysis and design in contemporary software development. Then, using easy-to-understand sample code, Alan Shalloway and James Trott illuminate dozens of today's most useful patterns: their underlying concepts, advantages, tradeoffs, implementation techniques, and pitfalls to avoid. Many patterns are accompanied by UML diagrams. Building on their best-selling First Edition, Shalloway and Trott have thoroughly updated this book to reflect new software design trends, patterns, and implementation techniques. Reflecting extensive reader feedback, they have deepened and clarified coverage throughout, and reorganized content for even greater ease of understanding. New and revamped coverage in this edition includes Better ways to start "thinking in patterns" How design patterns can facilitate agile development using eXtreme Programming and other methods How to use commonality and variability analysis to design application architectures The key role of testing into a patterns-driven development process How to use factories to instantiate and manage objects more effectively The Object-Pool Pattern—a new pattern not identified by the "Gang of Four" New study/practice questions at the end of every chapter Gentle yet thorough, this book assumes no patterns experience whatsoever. It's the ideal "first book" on patterns, and a perfect complement to Gamma's classic *Design Patterns*. If you're a programmer or architect who wants the clearest possible understanding of design patterns—or if you've struggled to make them work for you—read this book.

An Introduction to Design Patterns in C++ with Qt 4

Prentice-Hall PTR This complete tutorial and reference assumes no previous knowledge of C, C++, objects, or patterns. Readers will walk through every core concept, one step at a time, learning through an extensive collection of Qt 4.1-tested examples and exercises.

Learning JavaScript Design Patterns

A JavaScript and jQuery Developer's Guide

"O'Reilly Media, Inc." With *Learning JavaScript Design Patterns*, you'll learn how to write beautiful, structured, and maintainable JavaScript by applying classical and modern design patterns to the language. If you want to keep your code efficient, more manageable, and up-to-date with the latest best practices, this book is for you. Explore many popular design patterns, including Modules, Observers, Facades, and Mediators. Learn how modern architectural patterns—such as MVC, MVP, and MVVM—are useful from the perspective of a modern web application developer. This book also walks experienced JavaScript developers through modern module formats, how to namespace code effectively, and other essential topics. Learn the structure of design patterns and how they are written Understand different pattern categories, including creational, structural, and behavioral Walk through more than 20 classical and modern design patterns in JavaScript Use several options for writing modular code—including the Module pattern, Asynchronous Module Definition (AMD), and CommonJS Discover design patterns implemented in the jQuery library Learn popular design patterns for writing maintainable jQuery plug-ins "This book should be in every JavaScript developer's hands. It's the go-to book on JavaScript patterns that will be read and referenced many times in the future."—Andrée Hansson, Lead Front-End Developer, presis!

Design Patterns in Modern C++

Reusable Approaches for Object-Oriented Software Design

Apress 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# 3.0 Design Patterns

Use the Power of C# 3.0 to Solve Real-World Problems

"O'Reilly Media, Inc." If you want to speed up the development of your .NET applications, you're ready for C# design patterns -- elegant, accepted and proven ways to tackle common programming problems. This practical guide offers you a clear introduction to the classic object-oriented design patterns, and explains how to use the latest features of C# 3.0 to code them. C# Design Patterns draws on new C# 3.0 language and .NET 3.5 framework features to implement the 23 foundational patterns known to working developers. You get plenty of case studies that reveal how each pattern is used in practice, and an insightful comparison of patterns and where they would be best used or combined. This well-organized and illustrated book includes: An explanation of design patterns and why they're used, with tables and guidelines to help you choose one pattern over another Illustrated coverage of each classic Creational, Structural, and Behavioral design pattern, including its representation in UML and the roles of its various players C# 3.0 features introduced by example and summarized in sidebars for easy reference Examples of each pattern at work in a real .NET 3.5 program available for download from O'Reilly and the author's companion web site Quizzes and exercises to test your understanding of the material. With C# 3.0 Design Patterns, you learn to make code correct, extensible and efficient to save time up front and eliminate problems later. If your business relies on efficient application development and quality code, you need C# Design Patterns.

Hands-On Design Patterns with C++

Solve common C++ problems with modern design patterns and build robust applications

Packt Publishing Ltd 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 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.

Introduction to Design Patterns in C++ with Qt 4

This is the eBook version of the printed book. If the print book includes a CD-ROM, this content is not included within the eBook version. Learn C++, Patterns, and Qt 4 Cross-Platform Development Master C++ and design patterns together, using the world's leading open source framework for cross-platform development: Qt 4. An Introduction to Design Patterns in C++ with Qt 4 is a complete tutorial and reference that assumes no previous knowledge of C, C++, objects, or patterns. You'll walk through every core concept, one step at a time, learning through an extensive collection of Qt 4.1-tests.

Introduction to Design Patterns in C++ with Qt 4

Design Patterns for Embedded Systems in C

An Embedded Software Engineering Toolkit

Elsevier A recent survey stated that 52% of embedded projects are late by 4-5 months. This book can help get those projects in on-time with design patterns. The author carefully takes into account the special concerns found in designing and developing embedded applications specifically concurrency, communication, speed, and memory usage. Patterns are given in UML (Unified Modeling Language) with examples including ANSI C for direct and practical application to C code. A basic C knowledge is a prerequisite for the book while UML notation and terminology is included. General C programming books do not include discussion of the constraints found within embedded system design. The practical examples give the reader an understanding of the use of UML and OO (Object Oriented) designs in a resource-limited environment. Also included are two chapters on state machines. The beauty of this book is that it can help you today. . Design Patterns within these pages are immediately applicable to your project Addresses embedded system design concerns such as concurrency, communication, and memory usage Examples contain ANSI C for ease of use with C programming code

Design Patterns For Dummies

John Wiley & Sons There's a pattern here, and here's how to use it! Find out how the 23 leading design patterns can save you time and trouble Ever feel as if you've solved this programming problem before? You -- or someone -- probably did, and that's why there's a design pattern to help this time around. This book shows you how (and when) to use the famous patterns developed by the "Gang of Four," plus some new ones, all designed to make your programming life easier. Discover how to: * Simplify the programming process with design patterns * Make the most of the Decorator, Factory, and Adapter patterns * Identify which pattern applies * Reduce the amount of code needed for a task * Create your own patterns

Design Patterns in Java

Addison-Wesley Professional Design Patterns in Java™ gives you the hands-on practice and deep insight you need to fully leverage the significant power of design patterns in any Java software project. The perfect complement to the classic Design Patterns, this learn-by-doing workbook applies the latest Java features and best practices to all of the original 23 patterns identified in that groundbreaking text. Drawing on their extensive experience as Java instructors and programmers, Steve Metsker and Bill Wake illuminate each pattern with real Java programs, clear UML diagrams, and compelling exercises. You'll move quickly from theory to application—learning how to improve new code and refactor existing code for simplicity, manageability, and performance. Coverage includes Using Adapter to provide consistent interfaces to clients Using Facade to simplify the use of reusable toolkits Understanding the role of Bridge in Java database connectivity The Observer pattern, Model-View-Controller, and GUI behavior Java Remote Method Invocation (RMI) and the Proxy pattern Streamlining designs using the Chain of Responsibility pattern Using patterns to go beyond Java's built-in constructor features Implementing Undo capabilities with Memento Using the State pattern to manage state more cleanly and simply Optimizing existing codebases with extension patterns Providing thread-safe iteration with the Iterator pattern Using Visitor to define new operations without changing hierarchy classes If you're a Java programmer wanting to save time while writing better code, this book's techniques, tips, and clear explanations and examples will help you harness the power of patterns to improve every program you write, design, or maintain. All source code is available for download at <http://www.oozinoz.com>.

Applying UML and Patterns

An Introduction to Object-oriented Analysis and Design and the Unified Process

Prentice Hall Professional An update to the bestselling UML classic, this title has been revised to cover the unified process and Rational Software's processes. Larman also shows developers how to make practical use of the most significant recent developments in object-oriented analysis and design.

The Joy of Patterns

Using Patterns for Enterprize Development

Addison-Wesley Professional Take the struggle out of learning about design patterns! Through example-based teaching, "The Joy of Patterns" reveals the essence of design patterns as an advanced language for describing system design. This book illustrates how to build more efficient, robust, and reusable designs with this powerful programming

paradigm. Design patterns have been used as integral techniques for creating better software, but getting started with design patterns has never been easy. Beginning with a description of the rationale behind design patterns, the discussion moves on to an overview of the basic pattern form, and then to a brief review of object-oriented concepts. Following this crucial background, the author presents a series of system design examples from initial conception all the way through code, discussing key design goals and the pros and cons of using various design patterns. Code is presented in Java, C++, and Visual Basic. The reader will gain insight into the inherent forces at work in the application design and the most effective application of numerous core design patterns as solutions to recurring programming problems. You will read and learn about such important ideas and topics as: Patterns as the language of design and the building blocks of architecture The value and use of many standard patterns in system design Extensible software development and change management Utilizing supporting patterns to prevent loose ends Testing and deploying new behaviors Understanding requirements and creating hinge points for entities that are likely to change "The Joy of Patterns" examines the relationship between specific programming languages and language-independent design patterns. It also looks at the role of patterns in building systems from scratch through system maintenance and product evolution. With the background and deeper understanding harnessed from this book, you will have the ability to unleash the considerable power of design patterns and enhance the quality of your programming efforts.

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Elemental Design Patterns

Addison-Wesley 2012 Jolt Award Finalist! Even experienced software professionals find it difficult to apply patterns in ways that deliver substantial value to their organizations. In *Elemental Design Patterns*, Jason McC. Smith addresses this problem head-on, helping developers harness the true power of patterns, map them to real software implementations more cleanly and directly, and achieve far better results. Part tutorial, part example-rich cookbook, this resource will help developers, designers, architects, and analysts successfully use patterns with a wide variety of languages, environments, and problem domains. Every bit as important, it will give them a deeper appreciation for the work they've chosen to pursue. Smith presents the crucial missing link that patterns practitioners have needed: a foundational collection of simple core patterns that are broken down to their core elements. If you work in software, you may already be using some of these elemental design patterns every day. Presenting them in a comprehensive methodology for the first time, Smith names them, describes them, explains their importance, helps you compare and choose among them, and offers a framework for using them together. He also introduces an innovative Pattern Instance Notation diagramming system that makes it easier to work with patterns at many levels of granularity, regardless of your goals or role. If you're new to patterns, this example-rich approach will help you master them piece by piece, logically and intuitively. If you're an experienced patterns practitioner, Smith follows the Gang of Four format you're already familiar with, explains how his elemental patterns can be composed into conventional design patterns, and introduces highly productive new ways to apply ideas you've already encountered. No matter what your level of experience, this infinitely practical book will help you transform abstract patterns into high-value solutions.

Game Programming Patterns

Genever Benning The biggest challenge facing many game programmers is completing their game. Most game projects fizzle out, overwhelmed by the complexity of their own code. *Game Programming Patterns* tackles that exact problem. Based on years of experience in shipped AAA titles, this book collects proven patterns to untangle and optimize your game, organized as independent recipes so you can pick just the patterns you need. You will learn how to write a robust game loop, how to organize your entities using components, and take advantage of the CPU's cache to improve your performance. You'll dive deep into how scripting engines encode behavior, how quadtrees and other spatial partitions optimize your engine, and how other classic design patterns can be used in games.

Design Patterns in Ruby (Adobe Reader)

Pearson Education Praise for *Design Patterns in Ruby* " *Design Patterns in Ruby* documents smart ways to resolve many problems that Ruby developers commonly encounter. Russ Olsen has done a great job of selecting classic patterns and augmenting these with newer patterns that have special relevance for Ruby. He clearly explains each idea, making a wealth of experience available to Ruby developers for their own daily work." —Steve Metsker, Managing Consultant with Dominion Digital, Inc. "This book provides a great demonstration of the key 'Gang of Four' design patterns without resorting to overly technical explanations. Written in a precise, yet almost informal style, this book covers enough ground that even those without prior exposure to design patterns will soon feel confident applying them using Ruby. Olsen has done a great job to make a book about a classically 'dry' subject into such an engaging and even occasionally humorous read." —Peter Cooper "This book renewed my interest in understanding patterns after a decade of good intentions. Russ picked the most useful patterns for Ruby and introduced them in a straightforward and logical manner, going beyond the GoF's patterns. This book has improved my use of Ruby, and encouraged me to blow off the dust covering the GoF book." —Mike Stok " *Design Patterns in Ruby* is a great way for programmers from statically typed object-oriented languages to learn how design patterns appear in a more dynamic, flexible language like Ruby." —Rob Sanheim, *Ruby Ninja*, Relevance Most design pattern books are based on C++ and Java. But Ruby is different—and the language's unique qualities make design patterns easier to implement and use. In this book, Russ Olsen demonstrates how to combine Ruby's power and elegance with patterns, and write more sophisticated, effective

software with far fewer lines of code. After reviewing the history, concepts, and goals of design patterns, Olsen offers a quick tour of the Ruby language—enough to allow any experienced software developer to immediately utilize patterns with Ruby. The book especially calls attention to Ruby features that simplify the use of patterns, including dynamic typing, code closures, and "mixins" for easier code reuse. Fourteen of the classic "Gang of Four" patterns are considered from the Ruby point of view, explaining what problems each pattern solves, discussing whether traditional implementations make sense in the Ruby environment, and introducing Ruby-specific improvements. You'll discover opportunities to implement patterns in just one or two lines of code, instead of the endlessly repeated boilerplate that conventional languages often require. Design Patterns in Ruby also identifies innovative new patterns that have emerged from the Ruby community. These include ways to create custom objects with metaprogramming, as well as the ambitious Rails-based "Convention Over Configuration" pattern, designed to help integrate entire applications and frameworks. Engaging, practical, and accessible, Design Patterns in Ruby will help you build better software while making your Ruby programming experience more rewarding.

Design Patterns Explained

A New Perspective on Object-oriented Design

Addison-Wesley Professional This book introduces the programmer to patterns: how to understand them, how to use them, and then how to implement them into their programs. This book focuses on teaching design patterns instead of giving more specialized patterns to the relatively few.

Design Patterns in C#

A Hands-on Guide with Real-World Examples

Apress Get hands-on experience with each Gang of Four design pattern using C#. For each of the patterns, you'll see at least one real-world scenario, a coding example, and a complete implementation including output. In the first part of Design Patterns in C#, you will cover the 23 Gang of Four (GoF) design patterns, before moving onto some alternative design patterns, including the Simple Factory Pattern, the Null Object Pattern, and the MVC Pattern. The final part winds up with a conclusion and criticisms of design patterns with chapters on anti-patterns and memory leaks. By working through easy-to-follow examples, you will understand the concepts in depth and have a collection of programs to port over to your own projects. Along the way, the author discusses the different creational, structural, and behavioral patterns and why such classifications are useful. In each of these chapters, there is a Q&A session that clears up any doubts and covers the pros and cons of each of these patterns. He finishes the book with FAQs that will help you consolidate your knowledge. This book presents the topic of design patterns in C# in such a way that anyone can grasp the idea. What You Will Learn Work with each of the design patterns Implement the design patterns in real-world applications Select an alternative to these patterns by comparing their pros and cons Use Visual Studio Community Edition 2017 to write code and generate output Who This Book Is For Software developers, software testers, and software architects.

C++ Programming with Design Patterns Revealed

Addison-Wesley C++ Programming with Design Patterns Revealed introduces C++ syntax alongside current object-oriented tools such as design patterns, and the Unified Modeling Language (UML), which are essential for the production of well-designed C++ software. Through this book, readers will attain mastery of many C++ features, as well as the object-oriented design techniques that facilitate and optimize their use. This book uses an example-based approach. First, a technique is presented alongside a piece of code that implements that technique. Next, a component is shown that uses the technique. Finally, an entire running example that incorporates the technique is presented. The book balances a systematic discussion of object-oriented design alongside the introduction of C++ syntax. It introduces twelve basic design patterns early on and uses them throughout, and describes design patterns via use of basic UML. Numerous reference appendices are included for the idioms, design patterns, and programming guidelines in the book. Portability tips, common programming errors, idioms, and programming style tips are also highlighted in each chapter. This book is designed for readers who have been exposed to Java, as well as to basic object-oriented ideas, and are looking to gain familiarity with C++.

Java Design Patterns

A Tutorial

Addison-Wesley Professional Java developers know that design patterns offer powerful productivity benefits but few books have been specific enough to address their programming challenges. With "Java Design Patterns", there's finally a hands-on guide focused specifically on real-world Java development. The book covers three main categories of design patterns--creational, structural, and behavioral--and the example programs and useful variations can be found on the

accompanying CD-ROM.

C# Design Pattern Essentials

Once you've learned the fundamentals of C#, understanding Design Patterns is essential for writing clear, concise and effective code. This book gives you a step-by-step guide to object-oriented development, using tried and trusted techniques. The examples have been kept simple, enabling you to concentrate on understanding the concepts and application of each pattern. All examples have been designed around a common theme, making it easier to see how they relate to each other and how you can adapt them to your applications. While the book assumes a basic knowledge of C# you don't need to be a guru. This book is perfect for the programmer wishing to take their skills to the next level, and feel confident about using C# in real applications. Coverage includes all 23 of the patterns from the "Gang of Four" work, additional patterns including Model-View-Controller, and simple UML diagrams.

Design Patterns by Tutorials (Third Edition): Learning Design Patterns in Swift

Learn iOS Design Patterns! Design patterns are reusable solutions to common development problems. They aren't project specific, so you can adapt and use them in countless apps. By learning design patterns, you'll become a better developer, save time and work less. Design Patterns by Tutorials is here to help! This book is the easiest and fastest way to get hands-on experience with the iOS design patterns you need to know. Who This Book Is For Whether you're a beginner, intermediate or advanced iOS developer, this book is for you. You can either read this book from cover to cover, or skip around to just the patterns you want to learn. Topics Covered in Design Patterns by Tutorials Getting Started: You'll first learn about how design patterns work and how they can help you build better, cleaner apps. Fundamental Patterns: You'll progress onto fundamental design patterns, such as MVC, Delegation, and Strategy, which you're likely to use on every iOS app. Intermediate Patterns: You'll then learn about intermediate design patterns, such as MVVM, Factory, and Adapter, which are less common than fundamental patterns but still very useful for most apps. You'll finish off by learning about advanced design patterns, including Flyweight, Mediator and Command. You likely won't use these on every app, but they may be just what you need to solve a difficult problem. One thing you can count on: after reading this book, you'll be well-prepared to use design patterns in your own apps!

Object-Oriented Design And Patterns

John Wiley & Sons Cay Horstmann offers readers an effective means for mastering computing concepts and developing strong design skills. This book introduces object-oriented fundamentals critical to designing software and shows how to implement design techniques. The author's clear, hands-on presentation and outstanding writing style help readers to better understand the material. A Crash Course in Java The Object-Oriented Design Process Guidelines for Class Design Interface Types and Polymorphism Patterns and GUI Programming Inheritance and Abstract Classes The Java Object Model Frameworks Multithreading More Design Patterns

Go Design Patterns

Packt Publishing Ltd Learn idiomatic, efficient, clean, and extensible Go design and concurrency patterns by using TDD About This Book A highly practical guide filled with numerous examples unleashing the power of design patterns with Go. Discover an introduction of the CSP concurrency model by explaining GoRoutines and channels. Get a full explanation, including comprehensive text and examples, of all known GoF design patterns in Go. Who This Book Is For The target audience is both beginner- and advanced-level developers in the Go programming language. No knowledge of design patterns is expected. What You Will Learn All basic syntax and tools needed to start coding in Go Encapsulate the creation of complex objects in an idiomatic way in Go Create unique instances that cannot be duplicated within a program Understand the importance of object encapsulation to provide clarity and maintainability Prepare cost-effective actions so that different parts of the program aren't affected by expensive tasks Deal with channels and GoRoutines within the Go context to build concurrent application in Go in an idiomatic way In Detail Go is a multi-paradigm programming language that has built-in facilities to create concurrent applications. Design patterns allow developers to efficiently address common problems faced during developing applications. Go Design Patterns will provide readers with a reference point to software design patterns and CSP concurrency design patterns to help them build applications in a more idiomatic, robust, and convenient way in Go. The book starts with a brief introduction to Go programming essentials and quickly moves on to explain the idea behind the creation of design patterns and how they appeared in the 90's as a common "language" between developers to solve common tasks in object-oriented programming languages. You will then learn how to apply the 23 Gang of Four (GoF) design patterns in Go and also learn about CSP concurrency patterns, the "killer feature" in Go that has helped Google develop software to maintain thousands of servers. With all of this the book will enable you to understand and apply design patterns in an idiomatic way that will produce concise, readable, and maintainable software. Style and approach This book will teach widely used design patterns and best practices with Go in a step-by-step manner. The code will have detailed examples, to allow programmers to apply design patterns in their day-to-day coding.

ActionScript 3.0 Design Patterns

Object Oriented Programming Techniques

"O'Reilly Media, Inc." Now that ActionScript is reengineered from top to bottom as a true object-oriented programming (OOP) language, reusable design patterns are an ideal way to solve common problems in Flash and Flex applications. If you're an experienced Flash or Flex developer ready to tackle sophisticated programming techniques with ActionScript 3.0, this hands-on introduction to design patterns is the book you need. ActionScript 3.0 Design Patterns takes you step by step through the process, first by explaining how design patterns provide a clear road map for structuring code that actually makes OOP languages easier to learn and use. You then learn about various types of design patterns and construct small abstract examples before trying your hand at building full-fledged working applications outlined in the book. Topics in ActionScript 3.0 Design Patterns include: Key features of ActionScript 3.0 and why it became an OOP language OOP characteristics, such as classes, abstraction, inheritance, and polymorphism The benefits of using design patterns Creational patterns, including Factory and Singleton patterns Structural patterns, including Decorator, Adapter, and Composite patterns Behavioral patterns, including Command, Observer, Strategy, and State patterns Multiple design patterns, including Model-View-Controller and Symmetric Proxy designs During the course of the book, you'll work with examples of increasing complexity, such as an e-business application with service options that users can select, an interface for selecting a class of products and individual products in each class, an action game application, a video record and playback application, and many more. Whether you're coming to Flash and Flex from Java or C++, or have experience with ActionScript 2.0, ActionScript 3.0 Design Patterns will have you constructing truly elegant solutions for your Flash and Flex applications in no time.

Design Patterns in Modern C++20

Reusable Approaches for Object-Oriented Software Design

Apress Apply the latest editions of the C++ standard to the implementation of design patterns. As well as covering traditional design patterns, this book fleshes out new design patterns and approaches that will be useful to modern C++ developers. Author Dmitri Nesteruk 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++20, Second Edition also provides a technology demo for modern C++, showcasing how some of its latest features (e.g., coroutines, modules and more) 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 Use creational patterns such as 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 the Maybe Monad Who This Book Is For This book is for both beginner and experienced C++ developers.

Options and Derivatives Programming in C++

Algorithms and Programming Techniques for the Financial Industry

Apress Learn how C++ is used in the development of solutions for options and derivatives trading in the financial industry. As an important part of the financial industry, options and derivatives trading has become increasingly sophisticated. Advanced trading techniques using financial derivatives have been used at banks, hedge funds, and pension funds. Because of stringent performance characteristics, most of these trading systems are developed using C++ as the main implementation language. Options and Derivatives Programming in C++ covers features that are frequently used to write financial software for options and derivatives, including the STL, templates, functional programming, and support for numerical libraries. New features introduced in the C++11 and C++14 standard are also covered: lambda functions, automatic type detection, custom literals, and improved initialization strategies for C++ objects. Readers will enjoy the how-to examples covering all the major tools and concepts used to build working solutions for quantitative finance. It includes advanced C++ concepts as well as the basic building libraries used by modern C++ developers, such as the STL and Boost, while also leveraging knowledge of object-oriented and template-based programming. Options and Derivatives Programming in C++ provides a great value for readers who are trying to use their current programming knowledge in order to become proficient in the style of programming used in large banks, hedge funds, and other investment institutions. The topics covered in the book are introduced in a logical and structured way and even novice programmers will be able to absorb the most important topics and competencies.

What You Will Learn Grasp the fundamental problems in options and derivatives trading Converse intelligently about credit default swaps, Forex derivatives, and more Implement valuation models and trading strategies Build pricing algorithms around the Black-Sholes Model, and also using the Binomial and Differential Equations methods Run quantitative finance algorithms using linear algebra techniques Recognize and apply the most common design patterns used in options trading Save time by using the latest C++ features such as the STL and the Boost libraries **Who This Book Is For** Professional developers who have some experience with the C++ language and would like to leverage that knowledge into financial software development. This book is written with the goal of reaching readers who need a concise, algorithms-based book, providing basic information through well-targeted examples and ready to use solutions. Readers will be able to directly apply the concepts and sample code to some of the most common problems faced in the analysis of options and derivative contracts.

Learning Patterns

Patterns for building powerful web apps with vanilla JavaScript and React

Patterns.dev In this book, you will learn design patterns, performance and rendering patterns for building high-quality web applications using modern JavaScript and React. Patterns are time-tested templates for writing code. They can be really powerful, whether you're a seasoned developer or beginner, bringing a valuable level of resilience and flexibility to your codebase. Whether it's better user-experience, developer-experience or just smarter architecture, the patterns in "Learning Patterns" can be a valuable consideration for any modern web application.

Design Patterns in .NET

Reusable Approaches in C# and F# for Object-Oriented Software Design

Apress Implement design patterns in .NET using the latest versions of the C# and F# languages. This book provides a comprehensive overview of the field of design patterns as they are used in today's developer toolbox. Using the C# programming language, Design Patterns in .NET explores the classic design pattern implementation and discusses the applicability and relevance of specific language features for the purpose of implementing patterns. You will learn by example, reviewing scenarios where patterns are applicable. MVP and patterns expert Dmitri Nesteruk demonstrates possible implementations of patterns, discusses alternatives and pattern inter-relationships, and illustrates the way that a dedicated refactoring tool (ReSharper) can be used to implement design patterns with ease. **What You'll Learn** Know the latest pattern implementations available in C# and F# Refer to researched and proven variations of patterns Study complete, self-contained examples including many that cover advanced scenarios Use the latest implementations of C# and Visual Studio/ReSharper **Who This Book Is For** Developers who have some experience in the C# language and want to expand their comprehension of the art of programming by leveraging design approaches to solving modern problems

APPLYING UML & PATTERNS 3RD EDITION

Larman covers how to investigate requirements, create solutions and then translate designs into code, showing developers how to make practical use of the most significant recent developments. A summary of UML notation is included

Holub on Patterns

Learning Design Patterns by Looking at Code

Apress * Allen Holub is a highly regarded instructor for the University of California, Berkeley, Extension. He has taught since 1982 on various topics, including Object-Oriented Analysis and Design, Java, C++, C. Holub will use this book in his Berkeley Extension classes. * Holub is a regular presenter at the Software Development conferences and is Contributing Editor for the online magazine JavaWorld, for whom he writes the Java Toolbox. He also wrote the OO Design Process column for IBM DeveloperWorks. * This book is not time-sensitive. It is an extremely well-thought out approach to learning design patterns, with Java as the example platform, but the concepts presented are not limited to just Java programmers. This is a complement to the Addison-Wesley seminal "Design Patterns" book by the "Gang of Four".

Making Embedded Systems Design Patterns for Great Software

"O'Reilly Media, Inc." Interested in developing embedded systems? Since they don't tolerate inefficiency, these systems require a disciplined approach to programming. This easy-to-read guide helps you cultivate a host of good development practices, based on classic software design patterns and new patterns unique to embedded programming. Learn how to build system architecture for processors, not operating systems, and discover specific techniques for dealing with hardware difficulties and manufacturing requirements. Written by an expert who's created embedded systems ranging from urban surveillance and DNA scanners to children's toys, this book is ideal for intermediate and experienced programmers, no matter what platform you use. Optimize your system to reduce cost and increase performance Develop an architecture that makes your software robust in resource-constrained environments Explore sensors, motors, and other I/O devices Do more with less: reduce RAM consumption, code space, processor cycles, and power consumption Learn how to update embedded code directly in the processor Discover how to implement complex mathematics on small processors Understand what interviewers look for when you apply for an embedded systems job "Making Embedded Systems is the book for a C programmer who wants to enter the fun (and lucrative) world of embedded systems. It's very well written—entertaining, even—and filled with clear illustrations."
—Jack Ganssle, author and embedded system expert.

Hands-On Design Patterns with Delphi

Build applications using idiomatic, extensible, and concurrent design patterns in Delphi

Packt Publishing Ltd Get up to speed with creational, structural, behavioral and concurrent patterns in Delphi to write clear, concise and effective code Key FeaturesDelve into the core patterns and components of Delphi in order to master your application's designBrush up on tricks, techniques, and best practices to solve common design and architectural challengesChoose the right patterns to improve your program's efficiency and productivityBook Description Design patterns have proven to be the go-to solution for many common programming scenarios. This book focuses on design patterns applied to the Delphi language. The book will provide you with insights into the language and its capabilities of a runtime library. You'll start by exploring a variety of design patterns and understanding them through real-world examples. This will entail a short explanation of the concept of design patterns and the original set of the 'Gang of Four' patterns, which will help you in structuring your designs efficiently. Next, you'll cover the most important 'anti-patterns' (essentially bad software development practices) to aid you in steering clear of problems during programming. You'll then learn about the eight most important patterns for each creational, structural, and behavioral type. After this, you'll be introduced to the concept of 'concurrency' patterns, which are design patterns specifically related to multithreading and parallel computation. These will enable you to develop and improve an interface between items and harmonize shared memories within threads. Toward the concluding chapters, you'll explore design patterns specific to program design and other categories of patterns that do not fall under the 'design' umbrella. By the end of this book, you'll be able to address common design problems encountered while developing applications and feel confident while building scalable projects. What you will learnGain insights into the concept of design patternsStudy modern programming techniques with DelphiKeep up to date with the latest additions and program design techniques in DelphiGet to grips with various modern multithreading approachesDiscover creational, structural, behavioral, and concurrent patternsDetermine how to break a design problem down into its component partsWho this book is for Hands-On Design Patterns with Delphi is aimed at beginner-level Delphi developers who want to build scalable and robust applications. Basic knowledge of Delphi is a must.

Modern C++ Design

Generic Programming and Design Patterns Applied

Addison-Wesley Professional Presents a collection of reusable design artifacts, called generic components, together with the techniques that make them possible. The author describes techniques for policy-based design, partial template specialization, typelists, and local classes, then goes on to implement generic components for smart pointers, object factories, functor objects, the Visitor design pattern, and multimethod engines. c. Book News Inc.

An Introduction to Design Patterns in C++ with Qt 4

Pearson Education India

Design Patterns

Elements of Reusable Object-oriented Software

Four designers present a catalog of simple and succinct solutions to commonly occurring design problems. This book shows the role that patterns can play in architecting complex systems. It provides references to a set of well-engineered patterns that the practicing developer can apply to craft specific applications. Each pattern includes code that demonstrates the implementation in object-oriented programming languages such as C++ or Smalltalk.

Practical Design Patterns for Teaching and Learning with Technology

Springer These are challenging times in which to be an educator. The constant flow of innovation offers new opportunities to support learners in an environment of ever-shifting demands. Educators work as they have always done: making the most of the resources at hand, and dealing with constraints, to provide experiences which foster growth. This was John Dewey's ideal of education 80 years ago and it is still relevant today. This view sees education as a practice that achieves its goals through creative processes involving both craft and design. Craft is visible in the resources that educators produce and in their interactions with learners. Design, though, is tacit, and educators are often unaware of their own design practices. The rapid pace of change is shifting the balance from craft to design, requiring that educators' design work become visible, shareable and malleable. The participatory patterns workshop is a method for doing this through engaging practitioners in collaborative reflection leading to the production of structured representations of design knowledge. The editors have led many such workshops and this book is a record of that endeavour and its outcomes in the form of practical design narratives, patterns and scenarios that can be used to address challenges in teaching and learning with technology.