Practical Object Oriented Design

The Complete Guide to Writing Maintainable, Manageable, Pleasing, and Powerful Object-Oriented Applications Object-oriented programming languages exist to help you create beautiful, straightforward applications that are easy to change and simple to extend. Unfortunately, the world is awash with object-oriented (OO) applications that are difficult to understand and expensive to change. Practical Object-Oriented Design, Second Edition, immerses you in an OO mindset and teaches you powerful, real-world, object-oriented design techniques with simple and practical examples. Sandi Metz demonstrates how to build new applications that can “survive success” and repair existing applications that have become impossible to change. Each technique is illustrated with extended examples in the easy-to-understand Ruby programming language, all downloadable from the companion website, poodr.com. Fully updated for Ruby 2.5, this guide shows how to Decide what belongs in a single class Avoid entangling objects that should be kept separate Define flexible interfaces among objects Reduce programming overhead costs with duck typing Successfully apply inheritance Build objects via composition Whatever your previous object-oriented experience, this concise guide will help you achieve the superior outcomes you’re looking for. Register your book for convenient access to downloads, updates, and/or corrections as they become available. See inside book for details.

Practical OO development tips for the C++ and Java programmer Practical Object-Oriented Development in C++ and Java offers advice on real-world ways to use these powerful programming languages and techniques. Using the Unified Modeling Language (UML) methodology, expert Cay S. Horstmann gives you clear, concise explanations of object-oriented design, C++, and Java in a way that makes these potentially daunting operations more accessible than they've ever been before. Horstmann compares and contrasts features of C++ and Java to give you a deeper understanding of OO design. He separates the genuinely useful C++, Java, and UML features from the less effective and potentially harmful ones. Horstmann shows you how to determine the best programming practice for whatever application you're in; provides the kind of eye-opening design tips and style rules that can only come from experience; and demystifies advanced topics like frameworks and object persistence. Dozens of illuminating programming examples are readily accessible through the accompanying Web site. Useful code is available for smart pointers, easy output formatting in C++ and Java, a set of classes that makes STL safe to use, and a nifty utility that automatically extracts header files. This unique book: * Offers over 100 practical design hints for good class design * Covers the essential OO features of Java 1.1-like serialization and reflection * Uses the C++ Standard Template Library (STL) throughout * Covers CRC cards in addition to UML

The Complete Guide to Writing More Maintainable, Manageable, Pleasing, and Powerful Ruby Applications Ruby’s widely admired ease of use has a downside: Too many Ruby and Rails applications have been created without concern for their long-term maintenance or evolution. The Web is awash in Ruby code that is now virtually impossible to change or extend. This text helps you solve that problem by using powerful real-world object-oriented design techniques, which it thoroughly explains using simple and practical Ruby examples. Sandi Metz has distilled a lifetime of conversations and presentations about object-oriented design into a set of Ruby-focused practices for crafting manageable, extensible, and pleasing code. She shows you how to build new applications that can survive success and repair existing applications that have become impossible to change. Each technique is illustrated with extended examples, all downloadable from the companion Web site, poodr.info. The first title to focus squarely on object-oriented Ruby application design, Practical Object-Oriented Design in Ruby will guide you to superior outcomes, whatever your previous Ruby experience. Novice Ruby programmers will find specific rules to live by; intermediate Ruby programmers will find valuable principles they can flexibly interpret and apply; and advanced Ruby programmers will find a common language they can use to lead development and guide their colleagues. This guide will help you Understand how object-oriented programming can help you craft Ruby code that is easier to maintain and upgrade Decide what belongs in a single Ruby class Avoid entangling objects that should be kept separate Define flexible interfaces among objects Reduce programming overhead costs with duck typing Successfully apply inheritance Build objects via composition Design cost-effective tests Solve common problems associated with poorly designed Ruby code

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Practical Object-Oriented Design in RubyAn Agile PrimerAddison-Wesley

Practical Object Oriented Design deals with the designing of software systems in the 'solution space' using the Unified Modelling Language (UML 2.0). This book builds on the analysis models created in its precursor, Practical Object Oriented Analysis, and iteratively creates architectural and solution models.

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Fundamentals of Object-Oriented Design in UML shows aspiring and experienced programmers alike how to apply design concepts, the UML, and the best practices in OO development to improve both their code and their success rates with object-based projects.

The refereed proceedings of the 17th European Conference on Object-Oriented Programming, ECOOP 2003, held in Darmstadt, Germany in July 2003. The 18 revised full papers presented together with 2 invited papers were carefully reviewed and selected from 88 submissions. The papers are organized in topical sections on aspects and components; patterns, architecture, and collaboration; types; modeling; algorithms, optimization, and runtimes; and formal techniques and methodology.

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This is a revised and updated edition of this title, which provides a practical introduction to the design of object-oriented programs using UML. It includes detailed coverage of modelling techniques and notation, with worked examples throughout. The book contains substantial code examples in Java. It clearly connects design concepts with code, and is useful for people with programming experience who wish to learn about design. It is also useful for computer science and software engineering undergraduates taking courses covering object-oriented techniques. The book provides explanations of UML and OCL notation emphasis on transitions from design to code, as well as including complete case studies with code, and many exercises.
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bull; Reflects all of the changes that were integrated into RUP v2003-the latest version of the very popular produc t bull; Learn the key concepts, fundamentals of structure, integral content, and motivation behind the RUP bull; Covers all phases of the software development lifecycle -from concept, to delivery, to revision
EBOOK: PRACTICAL OBJECT-ORIENT
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Object-Oriented Design with UML and Java provides an integrated introduction to object-oriented design with the Unified Modelling Language (UML) and the Java programming language. The book demonstrates how Java applications, no matter how small, can benefit from some design during their construction. Fully road-tested by students on the authors' own courses, the book shows how these complementary technologies can be used effectively to create quality software. It requires no prior knowledge of object orientation, though readers must have some experience of Java or other high level programming language. This book covers object technology; object-oriented analysis and design; and implementation of objects with Java. It includes two case studies dealing with library applications. The UML has been incorporated into a graphical design tool called ROME, which can be downloaded from the book's website. This object modelling environment allows readers to prepare and edit various UML diagrams. ROME can be used alongside a Java compiler to generate Java code from a UML class diagram then compile and run the resulting application for hands-on learning. This text would be a valuable resource for undergraduate students taking courses on O-O analysis and design, O-O modelling, Java programming, and modelling with UML. * Integrates design and implementation, using Java and UML * Includes case studies and exercises * Bridges the gap between programming texts and high level analysis books on design
The Art of Objects offers an extensive overview of the long-standing principles of object technology, along with leading-edge developments in the field. It will give you a greater understanding of design patterns and the know-how to use them to find effective solutions to a wide range of design challenges. And because the book maintains an approach independent of specific programming languages, the concepts and techniques presented here can be applied to any object-oriented development environment. Using the Unified Modeling Language (UML), The Art of Objects examines numerous static and dynamic practical object design patterns, illustrated by real-life case studies that demonstrate how to put the patterns to work. You will also find discussion of basic concepts of database management and persistent objects, and an introduction to advanced topics in object modeling and interface design patterns. Moving beyond the design level, the book also covers important concepts in object-oriented architecture. Specific topics include: *Object creation and destruction, associations and links, aggregation, inheritance, and other object design fundamentals *UML notation basics for static and dyna
Conquer your fear and anxiety learning how the concepts behind object-oriented design apply to the ABAP programming environment. Through simple examples and metaphors this book demystifies the object-oriented programming model. Object-Oriented Design with ABAP presents a bridge from the familiar procedural style of ABAP to the unfamiliar object-oriented style, taking you by the hand and leading you through the difficulties associated with learning these concepts, covering not only the nuances of using object-oriented principles in ABAP software design but also revealing the reasons why these concepts have become embraced throughout the software development industry. More than simply knowing how to use various object-oriented techniques, you'll also be able to determine whether a technique is applicable to the task the software addresses. This

book: div Shows how object-oriented principles apply to ABAP program design Provides the basics for creating component design diagrams Teaches how to incorporate design patterns in ABAP programs What You'll Learn Write ABAP code using the object-oriented model as comfortably and easily as using the procedural model Create ABAP design diagrams based on the Unified Modeling Language Implement object-oriented design patterns into ABAP programs Reap the benefits of spending less time designing and maintaining ABAP programs Recognize those situations where design patterns can be most helpful Avoid long and exhausting searches for the cause of bugs in ABAP programs Who This Book Is For Experienced ABAP programmers who remain unfamiliar with the design potential presented by the object-oriented aspect of the language

Games software has its roots in a "cottage" industry, ignoring formal methodologies, instead leaving the programmers to find homespun solutions to the technical problems faced. The picture has now changed: the scale of the problems faced by programmers means that more methodical techniques must be applied to game development to prevent projects spiralling out of control, both in terms of technical complexity and cost. The book addresses how program teams can develop ever more complex entertainment software within the constraints of deadlines, budgets and changing technologies. It establishes a set of best practices tempered with real-world pragmatism, understanding that there is no "one size fits all" solution. No member of the game development team should be working in isolation and the book will be useful to producers, designers and artists as well as the programmers themselves. In addition, the book addresses the needs of the growing number of Game Development courses offered in academia, giving students a much-needed insight into the real world of object-oriented game design.

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This practical book tells readers how to actually build object-oriented models using UML notation, and how to implement these models using Java. The authors introduce all of the basic fundamentals necessary to start applying and understanding the object-oriented paradigm without having to be an expert in computer science or advanced mathematics. It can help the reader to make the right decisions to meet their individual business needs. Using cases, recommended approach scenarios, and examples, this clearly-written book covers a multitude of topics: managing complexity, principles of Object-Orientation, specification models, current techniques, behaviors, relationships, rules, design, Java background and fundamentals, multi-tasking, JAR files, security, Swing Applets, class and interface, internationalization, and implementing generalization and specialization. For professional software analysts and developers who work on large systems, and others in the field of computer science.

????:Object-oriented design

This book describes a practical approach to object-oriented programming and design. After explaining the basic concepts of object-orientation the book shows with numerous realistic examples how this technique can be used to write extensible and well-structured software. It discussed typical design patterns and shows implementation techniques for frequently occurring problems to be solved with object-oriented programming. Object-oriented programming is programming in the large. Although it is possible to explain the basic concepts withsmall examples it is necessary to study large and realistic applications in order to understand the power and elegance of this new technique. Therefore the book contains the design and full source code of a realistic case study - a window system with extensible text and graphics editors. The programming language used in this book is Oberon-2, the latest offspringof the Pascal and Modula-2 family of languages developed at ETH Z}rich. Besides satisfying the principle requirements of modern software such asstrong type checking, modularity and object-orientedness one of the major advantages of this language is its simplicity. Anyone who understands Pascal can also read Oberon-2 programs. Compilers for Oberon-2 as well as the source code of the case study in this book are freely available from ETH.

Martin Fowler is a consultant specializing in object-oriented analysis and design. This book presents and discusses a number of object models derived from various problem domains. All patterns and models presented have been derived from the author's own consulting work and are based on real business cases.

This revision of Grady Booch's classic offers the first industry-wide standard for notation in developing large scale object-oriented systems. Laying the groundwork for the development of complex systems based on the object model, the author works in C++ to provide five fully-developed design examples, along with many smaller applications. Three of these capstone projects are new with this edition, including an inventory tracking system which implements a client server. The other four span problem domains as diverse as data acquisition for scientific tools, framework, artificial intelligence, and command and control. To measure progress, metrics in object development are suggested so that the developer knows how the project is going. In addition, the author demonstrates good and bad object designs and shows how to manage the trade-offs in complex systems.

More than ever, mission-critical and business-critical applications depend on object-oriented (OO) software. Testing techniques tailored to the unique challenges of OO technology are necessary to achieve high reliability and quality. "Testing Object-Oriented Systems: Models, Patterns, and Tools" is an authoritative guide to designing and automating test suites for OO applications. This comprehensive book explains why testing must be model-based and provides in-depth coverage of techniques to develop testable models from state machines, combinational logic, and the Unified Modeling Language (UML). It introduces the test design pattern and presents 37 patterns that explain how to design responsibility-based test suites, how to tailor integration and regression testing for OO code, how to test reusable components and frameworks, and how to develop highly effective test suites from use cases. Effective testing must be automated and must leverage object technology. The author describes how to design and code specification-based assertions to offset testability losses due to inheritance and polymorphism. Fifteen micro-patterns present oracle strategies--practical solutions for one of the hardest problems in test design. Seventeen design patterns explain how to automate your test suites with a coherent OO test harness framework. The author provides thorough coverage of testing issues such as: The bug hazards of OO programming and differences from testing procedural code How to design responsibility-based tests for classes, clusters, and subsystems using class invariants, interface data flow models, hierarchic state machines, class associations, and scenario analysis How to support reuse by effective testing of abstract classes, generic classes, components, and frameworks How to choose an integration strategy that supports iterative and incremental development How to achieve comprehensive system testing with testable use cases How to choose a regression test approach How to develop expected test results and evaluate the post-test state of an object How to automate testing with assertions, OO test drivers, stubs, and test frameworks Real-world experience, world-class best practices, and the latest research in object-oriented testing are included. Practical examples illustrate test design and test automation for Ada 95, C++, Eiffel, Java, Objective-C, and Smalltalk. The UML is used throughout, but the test design patterns apply to systems developed with any OO language or methodology. 0201809389B04062001

Take a step beyond syntax to discover the true art of software design, with Java as your paintbrush and objects on your palette. This in-depth discussion of how, when, and why to use objects enables you to create programs that not only work smoothly, but are easy to maintain and upgrade using Java of any other object-oriented language! Companion CD software Pc.zip (8.4MB) Unix.zip (541K)

An introduction to object-oriented design aimed particularly programmers with little or no design experience. The book looks at the computer programmes using the techniques of object-oriented design, object modelling - Rumbaugh Method, and also features code examples in C++. Emphasis is placed on connections between design and programme code. Design notations and how they provide a suitable vehicle for discussing software architecture are examined. Included are chapter exercises, a complete worked example with implementation and other case studies.

OOAD Cookbook: Introduction to Practical System Modeling is a modern, practical, and approachable guide to help students design and develop code that is modular, maintainable, and extensible. Whether you are a developer, devops, QA tester, systems analyst, or IT, this book will introduce the concepts to build a strong foundation in object-oriented methodologies. Step-by-Step instructions along with vivid examples and illustrations offer a fresh, practical, and approachable plan to learn object-oriented design. Students will learn and be exposed to efficient design through methodical analysis, UML diagrams, system architectures, and essential design principles so that they can design software pragmatically.

Although the theory of object-oriented programming languages is far from complete, this book brings together the most important contributions to its development to date, focusing in particular on how advances in type systems and semantic models can contribute to new language designs.The fifteen chapters are divided into five parts: Objects and Subtypes, Type Inference, Coherence, Record Calculi, and Inheritance. The chapters are organized approximately in order of increasing complexity of the programming language constructs they consider - beginning with variations on Pascal- and Algol-like languages, developing the theory of illustrative record object models, and concluding with research directions for building a more comprehensive theory of object-oriented programming languages.Part I discusses the similarities and differences between "objects" and algebraic-style abstract data types, and the fundamental concept of a subtype. Parts II-IV are concerned with the "record model" of object-oriented languages. Specifically, these chapters discuss static and dynamic semantics of languages with simple object models that include a type or class hierarchy but do not explicitly provide what is often called dynamic binding. Part V considers extensions and modifications to record object models, moving closer to the full complexity of practical object-oriented languages.Carl A. Gunter is Professor in the Department of Computer and Information Science at the University of Pennsylvania. John C. Mitchell is Professor in the Department of Computer Science at Stanford University.

If you are interested in learning object-oriented technology using UML (Unified Modeling Language) and C++, then this guide from two leading software developers at Bell Laboratories of Lucent Technologies and AT&T is for you. Designed as a self-teaching guide for busy software analysts and developers who work on large systems, this book will teach you how to actually do object-oriented modeling using UML notation and implementing the model using C++. Features: Uses the new UML notation for documentation. UML will be the new industry standard; teaches the professional to make and trade off decisions to meet business needs; explains the differences among object-oriented analysis, object-oriented design, and object-oriented programming; provides a strategy for employing all the steps of object-oriented technology; fully worked case study that takes the reader through the entire development process; every concept is introduced with an example.

"The software engineering community has advanced greatly in recent years and we currently have numerous defined items of knowledge, such as standards, methodologies, methods, metrics, techniques, languages, patterns, knowledge related to processes, concepts, etc.The main objective of this book is to give a unified and global vision about Micro-Architectural Design Knowledge, analyzing the main techniques, experiences and methods"--Provided by publisher.

This revised and enlarged edition of a classic in Old Testament scholarship reflects the most up-to-date research on the prophetic books and offers substantially expanded discussions of important new insight on Isaiah and the other prophets.

"This book manages to convey the practical use of UML 2 in clear and understandable terms with many examples and guidelines. Even for people not working with the Unified Process, the book is still of great use. UML 2 and the Unified Process, Second Edition is a must-read for every UML 2 beginner and a helpful guide and reference for the experienced practitioner." --Roland Leibundgut, Technical Director, Zuehlke Engineering Ltd. "This book is a good starting point for organizations and individuals who are adopting UP and need to understand how to provide visualization of the different aspects needed to satisfy it. " --Eric Naiburg, Market Manager, Desktop Products, IBM Rational Software This thoroughly revised edition provides an indispensable and practical guide to the complex process of object-oriented analysis and design using UML 2. It describes how the process of OO analysis and design fits into the software development lifecycle as defined by the Unified Process (UP). UML 2 and the Unified Process contains a wealth of practical, powerful, and useful techniques that you can apply immediately. As you progress through the text, you will learn OO analysis and design techniques, UML syntax and semantics, and the relevant aspects of the UP. The book provides you with an accurate and succinct summary of both UML and UP from the point of view of the OO analyst and designer. This book provides Chapter roadmaps, detailed diagrams, and margin notes allowing you to focus on your needs Outline summaries for each chapter, making it ideal for revision, and a comprehensive index that can be used as a reference New to this edition: Completely revised and updated for UML 2 syntax Easy to understand explanations of the new UML 2 semantics More real-world examples A new section on the Object Constraint Language (OCL) Introductory material on the OMG's Model Driven Architecture (MDA) The accompanying website provides A complete example of a simple e-commerce system Open source tools for requirements engineering and use case modeling Industrial-strength UML course materials based on the book