

Uml Distilled A Brief Guide To The Standard Object Modeling Language 3rd Edition

This innovative book recognizes the need within the object-oriented community for a book that goes beyond the tools and techniques of the typical methodology book. In *Analysis Patterns: Reusable Object Models*, Martin Fowler focuses on the end result of object-oriented analysis and design—the models themselves. He shares with you his wealth of object modeling experience and his keen eye for identifying repeating problems and transforming them into reusable models. *Analysis Patterns* provides a catalogue of patterns that have emerged in a wide range of domains including trading, measurement, accounting and organizational relationships. Recognizing that conceptual patterns cannot exist in isolation, the author also presents a series of "support patterns" that discuss how to turn conceptual models into software that in turn fits into an architecture for a large information system. Included in each pattern is the reasoning behind their design, rules for when they should and should not be used, and tips for implementation. The examples presented in this book comprise a cookbook of useful models and insight into the skill of reuse that will improve analysis, modeling and implementation.

Multi pack contains: *An Introduction to Systems Analysis Techniques* - ISBN 0201797135 *UML Distilled: A Brief Guide to the Standard Object Modeling* - ISBN 032119368

A guide to using UML describes major UML diagrams, their creation, and how to decipher them.

This comprehensive guide has been fully revised to cover UML 2.0, today's standard method for modelling software systems. Filled with concise information, it's been crafted to help IT professionals read, create, and understand system artefacts expressed using UML. Includes an example-rich tutorial for those who need familiarizing with the system.

With its clear introduction to the Unified Modeling Language (UML) 2.0, this tutorial offers a solid understanding of each topic, covering foundational concepts of object-orientation and an introduction to each of the UML diagram types.

Programming WCF Services is the authoritative, bestselling guide to Microsoft's unified platform for developing modern service-oriented applications on Windows. Hailed as the definitive treatment of WCF, this book provides unique insight, rather than documentation, to help you learn the topics and skills you need for building WCF-based applications that are maintainable, extensible, and reusable. Author Juval Löwy -- one of the world's top .NET experts -- revised this edition to include the newest productivity-enhancing features of .NET Framework 4 and the Azure AppFabric Service Bus, as well as the latest WCF ideas and techniques. By teaching you the why and the how of WCF programming, *Programming WCF Services* will help you master WCF and make you a better software engineer. Learn about WCF architecture and essential building blocks, including key concepts such as reliability and transport sessions Use built-in features such as service hosting, instance and concurrency management, transactions, disconnected queued calls, security, and discovery Master the Windows Azure AppFabric Service Bus, the most revolutionary piece of the new cloud computing initiative Increase your productivity and the quality of your WCF services by taking advantage of relevant design options, tips, and best practices in Löwy's *ServiceModelEx* framework Discover the rationale behind particular design decisions, and delve into rarely understood aspects of WCF development "If you choose to learn WCF, you've chosen well. If you choose to learn with the resource and guidance of Juval Löwy, you've done even better... there are few people alive today who know WCF as well." --Ron Jacobs, Senior Technical Evangelist for WCF, Microsoft Corporation

"One of the great things about the book is the way the authors explain concepts very simply

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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.

Second Edition of the UML video course based on the book Applying UML and Patterns. This VTC will focus on object-oriented analysis and design, not just drawing UML.

MDA Distilled is an accessible introduction to the MDA standard and its tools and technologies. The book describes the fundamental features of MDA, how they fit together, and how you can use them in your organization today. You will also learn how to define a model-driven process for a project involving multiple platforms, implement that process, and then test the resulting system.

Concise and easy-to-understand guidelines and standards for creating UML 2.0 diagrams.

This textbook mainly addresses beginners and readers with a basic knowledge of object-oriented programming languages like Java or C#, but with little or no modeling or software engineering experience – thus reflecting the majority of students in introductory courses at universities. Using UML, it introduces basic modeling concepts in a highly precise manner, while refraining from the interpretation of rare special cases. After a brief explanation of why modeling is an indispensable part of software development, the authors introduce the individual diagram types of UML (the class and object diagram, the sequence diagram, the state machine diagram, the activity diagram, and the use case diagram), as well as their interrelationships, in a step-by-step manner. The topics covered include not only the syntax and the semantics of the individual

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language elements, but also pragmatic aspects, i.e., how to use them wisely at various stages in the software development process. To this end, the work is complemented with examples that were carefully selected for their educational and illustrative value. Overall, the book provides a solid foundation and deeper understanding of the most important object-oriented modeling concepts and their application in software development. An additional website offers a complete set of slides to aid in teaching the contents of the book, exercises and further e-learning material.

Covers punctuation, special characters, accent marks, fonts, tabs, indentations, widows and orphans, hyphenations, line breaks, linespacing, justified text, and typeface combinations.

More than 300,000 developers have benefited from past editions of UML Distilled . This third edition is the best resource for quick, no-nonsense insights into understanding and using UML 2.0 and prior versions of the UML. Some readers will want to quickly get up to speed with the UML 2.0 and learn the essentials of the UML. Others will use this book as a handy, quick reference to the most common parts of the UML. The author delivers on both of these promises in a short, concise, and focused presentation. This book describes all the major UML diagram types, what they're used for, and the basic notation involved in creating and deciphering them. These diagrams include class, sequence, object, package, deployment, use case, state machine, activity, communication, composite structure, component, interaction overview, and timing diagrams. The examples are clear and the explanations cut to the fundamental design logic. Includes a quick reference to the most useful parts of the UML notation and a useful summary of diagram types that were added to the UML 2.0. If you are like most developers, you don't have time to keep up with all the new innovations in software engineering. This new edition of Fowler's classic work gets you acquainted with some of the best thinking about efficient object-oriented software design using the UML--in a convenient format that will be essential to anyone who designs software professionally. Enterprise Patterns and MDA teaches you how to customize any archetype pattern--such as Customer, Product, and Order--to reflect the idiosyncrasies of your own business environment. Because all the patterns work harmoniously together and have clearly documented relationships to each other, you'll come away with a host of reusable solutions to common problems in business-software design. This book shows you how using a pattern or a fragment of a pattern can save you months of work and help you avoid costly errors. You'll also discover how--when used in literate modeling--patterns can solve the difficult challenge of communicating UML models to broad audiences. The configurable patterns can be used manually to create executable code. However, the authors draw on their extensive experience to show you how to tap the significant power of MDA and UML for maximum automation. Not surprisingly, the patterns included in this book are highly valuable; a blue-chip company recently valued a similar, but less mature, set of patterns at hundreds of thousands of dollars. Use this practical guide to increase the efficiency of your designs and to create robust business applications that can be applied immediately in a business setting.

Users can dramatically improve the design, performance, and manageability of object-oriented code without altering its interfaces or behavior. "Refactoring" shows users exactly how to spot the best opportunities for refactoring and exactly how to do it, step by step.

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A classic treatise that defined the field of applied demand analysis, *Consumer Demand in the United States: Prices, Income, and Consumption Behavior* is now fully updated and expanded for a new generation. Consumption expenditures by households in the United States account for about 70% of America's GDP. The primary focus in this book is on how households adjust these expenditures in response to changes in price and income. Econometric estimates of price and income elasticities are obtained for an exhaustive array of goods and services using data from surveys conducted by the Bureau of Labor Statistics, providing a better understanding of consumer demand. Practical models for forecasting future price and income elasticities are also demonstrated. Fully revised with over a dozen new chapters and appendices, the book revisits the original Taylor-Houthakker models while examining new material as well, such as the use of quantile regression and the stationarity of consumer preference. It also explores the emerging connection between neuroscience and consumer behavior, integrating the economic literature on demand theory with psychology literature. The most comprehensive treatment of the topic to date, this volume will be an essential resource for any researcher, student or professional economist working on consumer behavior or demand theory, as well as investors and policymakers concerned with the impact of economic fluctuations.

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

Designing Software Architectures will teach you how to design any software architecture in a systematic, predictable, repeatable, and cost-effective way. This book introduces a practical methodology for architecture design that any professional software engineer can use, provides structured methods supported by reusable chunks of design knowledge, and includes rich case studies that demonstrate how to use the methods. Using realistic examples, you'll master the powerful new version of the proven Attribute-Driven Design (ADD) 3.0 method and will learn how to use it to address key drivers, including quality attributes, such as modifiability, usability, and availability, along with functional requirements and architectural concerns. Drawing on their extensive experience, Humberto Cervantes and Rick Kazman guide you through crafting practical designs that support the full software life cycle, from requirements to maintenance and evolution. You'll learn how to successfully integrate design in your organizational context, and how to design systems that will be built with agile methods. Comprehensive coverage includes

- Understanding what architecture design involves, and where it fits in the full software development life cycle
- Mastering core design concepts, principles, and processes
- Understanding how to perform the steps of the ADD method
- Scaling design and analysis up or down, including design for pre-sale processes or lightweight architecture reviews
- Recognizing and optimizing critical relationships between analysis and design
- Utilizing proven, reusable design primitives and adapting them to specific problems and contexts
- Solving design problems in new domains, such as cloud, mobile, or big data

This title contains standards and guidelines for creating UML diagrams that are concise and easy to understand.

For nearly ten years, the Unified Modeling Language (UML) has been the industry standard for visualizing, specifying, constructing, and documenting the artifacts of a

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software-intensive system. As the de facto standard modeling language, the UML facilitates communication and reduces confusion among project stakeholders. The recent standardization of UML 2.0 has further extended the language's scope and viability. Its inherent expressiveness allows users to model everything from enterprise information systems and distributed Web-based applications to real-time embedded systems. In this eagerly anticipated revision of the best-selling and definitive guide to the use of the UML, the creators of the language provide a tutorial to its core aspects in a two-color format designed to facilitate learning. Starting with an overview of the UML, the book explains the language gradually by introducing a few concepts and notations in each chapter. It also illustrates the application of the UML to complex modeling problems across a variety of application domains. The in-depth coverage and example-driven approach that made the first edition of *The Unified Modeling Language User Guide* an indispensable resource remain unchanged. However, content has been thoroughly updated to reflect changes to notation and usage required by UML 2.0. Highlights include: A new chapter on components and internal structure, including significant new capabilities for building encapsulated designs New details and updated coverage of provided and required interfaces, collaborations, and UML profiles Additions and changes to discussions of sequence diagrams, activity diagrams, and more Coverage of many other changes introduced by the UML 2.0 specification With this essential guide, you will quickly get up to speed on the latest features of the industry standard modeling language and be able to apply them to your next software project.

Combining the latest research and most current coverage available into a succinct nine chapters, *FUNDAMENTALS OF INFORMATION SYSTEMS, 8E* equips students with a solid understanding of the core principles of IS and how it is practiced. The streamlined 560-page eighth edition features a wealth of new examples, figures, references, and cases as it covers the latest developments from the field--and highlights their impact on the rapidly changing role of today's IS professional. In addition to a stronger career emphasis, the text includes expanded coverage of mobile solutions, energy and environmental concerns, the increased use of cloud computing across the globe, and two cases per chapter. Learning firsthand how information systems can increase profits and reduce costs, students explore new information on e-commerce and enterprise systems, artificial intelligence, virtual reality, green computing, and other issues reshaping the industry. The text introduces the challenges and risks of computer crimes, hacking, and cyberterrorism. It also presents some of the most current research on virtual communities, global IS work solutions, and social networking. No matter where students' career paths may lead, *FUNDAMENTALS OF INFORMATION SYSTEMS, 8E* and its resources can help them maximize their success as employees, decision makers, and business leaders. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Explains how to leverage Java's architecture and mechanisms to design enterprise applications and considers code modularity, nonduplication, network efficiency, maintainability, and reusability.

Uses friendly, easy-to-understand For Dummies style to help readers learn to model systems with the latest version of UML, the modeling language used by companies

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throughout the world to develop blueprints for complex computer systems. Guides programmers, architects, and business analysts through applying UML to design large, complex enterprise applications that enable scalability, security, and robust execution. Illustrates concepts with mini-cases from different business domains and provides practical advice and examples. Covers critical topics for users of UML, including object modeling, case modeling, advanced dynamic and functional modeling, and component and deployment modeling.

Now widely adopted as the de facto industry standard and sanctioned by the Object Management Group, the Unified Modeling Language (UML) is a notation all software developers need to know and understand. However, the UML is a big language, and not all of it is equally important. The award-winning first edition of UML Distilled was widely praised for being a concise guide to the core parts of the UML and has proved extremely successful in helping developers get up and running quickly. UML Distilled, Second Edition, maintains the concise format with significantly updated coverage of use cases and activity diagrams, and expanded coverage of collaborations. It also includes a new appendix detailing the changes between UML versions. Written for those with a basic understanding of object-oriented analysis and design, this book begins with a summary of UML's history, development, and rationale and then moves into a discussion of how the UML can be integrated into the object-oriented development process. The primary author profiles the various modeling techniques in the UML--such as use cases, class diagrams, and interaction diagrams--and describes the notation and semantics clearly and succinctly. He also outlines useful non-UML techniques such as CRC cards and patterns. These descriptions are made even more relevant with a collection of best practices based on the primary author's experience and a brief Java programming example demonstrating the implementation of a UML-based design. With this tour of the key parts of the UML, readers will be left with a firm foundation upon which to build models and develop further knowledge of the Unified Modeling Language. Praise for the First Edition " UML Distilled is a recipient of the prestigious 1997 Software Development Magazine Productivity Award in the Books category. Addison-Wesley congratulates authors Martin Fowler and Kendall Scott for their outstanding work." "This book is a godsend. It is packed with solid advice presented in a concise and highly readable way. The essence of the notations is explained very well indeed but the author goes beyond this to give very clear insights into the application of UML techniques."--Jennifer Stapleton, Vice President Technical, British Computer Society " UML Distilled is well written, knowledgeable about both systems development and UML, and disarmingly honest." -- Robert L. Glass, The Software Practitioner (March 1998) " UML Distilled proves that you can say a lo ...

"If you are a serious user of UML, there is no other book quite like this one. I have been involved with the UML specification process for some time, but I still found myself learning things while reading through this book--especially on the changes and new capabilities that have come with UML." -Ed Seidewitz, Chief Architect, IntelliData Technologies Corporation The latest version of the Unified Modeling Language-UML 2.0--has increased its capabilities as the standard notation for modeling software-intensive systems. Like most standards documents, however, the official UML specification is difficult to read and navigate. In addition, UML 2.0 is far more complex than previous versions, making a thorough reference book more essential than ever. In

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this significantly updated and expanded edition of the definitive reference to the standard, James Rumbaugh, Ivar Jacobson, and Grady Booch-the UML's creators- clearly and completely describe UML concepts, including major revisions to sequence diagrams, activity models, state machines, components, internal structure of classes and components, and profiles. Whether you are capturing requirements, developing software architectures, designing implementations, or trying to understand existing systems, this is the book for you. Highlights include: Alphabetical dictionary of articles covering every UML concept Integrated summary of UML concepts by diagram type Two-color diagrams with extensive annotations in blue Thorough coverage of both semantics and notation, separated in each article for easy reference Further explanations of concepts whose meaning or purpose is obscure in the original specifications Discussion sections offering usage advice and additional insight into tricky concepts Notation summary, with references to individual articles An enhanced online index available on the book's web site allowing readers to quickly and easily search the entire text for specific topics The result is an indispensable resource for anyone who needs to understand the inner workings of the industry standard modeling language.

Upon completion of an object-oriented design, you are faced with a troubling question: "Is it good, bad, or somewhere in between?" Seasoned experts often answer this question by subjecting the design to a subconscious list of guidelines based on their years of experience. Experienced developer Arthur J. Riel has captured this elusive, subconscious list, and in doing so, has provided a set of metrics that help determine the quality of object-oriented models. Object-Oriented Design Heuristics offers insight into object-oriented design improvement. The more than sixty guidelines presented in this book are language-independent and allow you to rate the integrity of a software design. The heuristics are not written as hard and fast rules; they are meant to serve as warning mechanisms which allow the flexibility of ignoring the heuristic as necessary. This tutorial-based approach, born out of the author's extensive experience developing software, teaching thousands of students, and critiquing designs in a variety of domains, allows you to apply the guidelines in a personalized manner. The heuristics cover important topics ranging from classes and objects (with emphasis on their relationships including association, uses, containment, and both single and multiple inheritance) to physical object-oriented design. You will gain an understanding of the synergy that exists between design heuristics and the popular concept of design patterns; heuristics can highlight a problem in one facet of a design while patterns can provide the solution. Programmers of all levels will find value in this book. The newcomer will discover a fast track to understanding the concepts of object-oriented programming. At the same time, experienced programmers seeking to strengthen their object-oriented development efforts will appreciate the insightful analysis. In short, with Object-Oriented Design Heuristics as your guide, you have the tools to become a better software developer. 020163385XB04062001

"This book isn't just another introduction to use cases. The authors have used their wealth of experience to produce an excellent and insightful collection of detailed examples, explanations, and advice on how to work with use cases." –Maria Ericsson
The toughest challenge in building a software system that meets the needs of your audience lies in clearly understanding the problems that the system must solve.

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Advanced Use Case Modeling presents a framework for discovering, identifying, and modeling the problem that the software system will ultimately solve. Software developers often employ use cases to specify what should be performed by the system they're constructing. Although use case-driven analysis, design, and testing of software systems has become increasingly popular, little has been written on the role of use cases in the complete software cycle. This book fills that need by describing how to create use case models for complex software development projects, using practical examples to explain conceptual information. The authors extend the work of software visionary Ivar Jacobson, using the Unified Modeling Language (UML) as the notation to describe the book's models. Aimed primarily at software professionals, Advanced Use Case Modeling also includes information that relates use case technique to business processes. This book presents a process for creating and maintaining use case models in a framework that can be fully customized for your organization. The authors, pioneers in the application of use cases in software development, bring their extensive experience to cover topics such as: A process model for applying a use case model How to keep your use case modeling effort on track Tips and pitfalls in use case modeling How to organize your use case model for large-system development Similarities between Advanced Use Case Modeling and the Rational Unified Process framework Effect of use cases on user interface design Guidelines for quality use case modeling

The need to handle increasingly larger data volumes is one factor driving the adoption of a new class of nonrelational "NoSQL" databases. Advocates of NoSQL databases claim they can be used to build systems that are more performant, scale better, and are easier to program. NoSQL Distilled is a concise but thorough introduction to this rapidly emerging technology. Pramod J. Sadalage and Martin Fowler explain how NoSQL databases work and the ways that they may be a superior alternative to a traditional RDBMS. The authors provide a fast-paced guide to the concepts you need to know in order to evaluate whether NoSQL databases are right for your needs and, if so, which technologies you should explore further. The first part of the book concentrates on core concepts, including schemaless data models, aggregates, new distribution models, the CAP theorem, and map-reduce. In the second part, the authors explore architectural and design issues associated with implementing NoSQL. They also present realistic use cases that demonstrate NoSQL databases at work and feature representative examples using Riak, MongoDB, Cassandra, and Neo4j. In addition, by drawing on Pramod Sadalage's pioneering work, NoSQL Distilled shows how to implement evolutionary design with schema migration: an essential technique for applying NoSQL databases. The book concludes by describing how NoSQL is ushering in a new age of Polyglot Persistence, where multiple data-storage worlds coexist, and architects can choose the technology best optimized for each type of data access.

For courses in Software Engineering, Software Development, or Object-Oriented Design and Analysis at the Junior/Senior or Graduate level. This text can also be utilized in short technical courses or in short, intensive management courses. Shows students how to use both the principles of software engineering and the practices of various object-oriented tools, processes, and products. Using a step-by-step case study to illustrate the concepts and topics in each chapter, Bruegge and Dutoit emphasize learning object-oriented software engineer through practical experience: students can

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apply the techniques learned in class by implementing a real-world software project. The third edition addresses new trends, in particular agile project management (Chapter 14 Project Management) and agile methodologies (Chapter 16 Methodologies).

The Unified Modeling Language has become the industry standard for the expression of software designs. The Java programming language continues to grow in popularity as the language of choice for the serious application developer. Using UML and Java together would appear to be a natural marriage, one that can produce considerable benefit. However, there are nuances that the seasoned developer needs to keep in mind when using UML and Java together. Software expert Robert Martin presents a concise guide, with numerous examples, that will help the programmer leverage the power of both development concepts. The author ignores features of UML that do not apply to java programmers, saving the reader time and effort. He provides direct guidance and points the reader to real-world usage scenarios. The overall practical approach of this book brings key information related to Java to the many presentations. The result is an highly practical guide to using the UML with Java.

The practice of enterprise application development has benefited from the emergence of many new enabling technologies. Multi-tiered object-oriented platforms, such as Java and .NET, have become commonplace. These new tools and technologies are capable of building powerful applications, but they are not easily implemented. Common failures in enterprise applications often occur because their developers do not understand the architectural lessons that experienced object developers have learned. Patterns of Enterprise Application Architecture is written in direct response to the stiff challenges that face enterprise application developers. The author, noted object-oriented designer Martin Fowler, noticed that despite changes in technology--from Smalltalk to CORBA to Java to .NET--the same basic design ideas can be adapted and applied to solve common problems. With the help of an expert group of contributors, Martin distills over forty recurring solutions into patterns. The result is an indispensable handbook of solutions that are applicable to any enterprise application platform. This book is actually two books in one. The first section is a short tutorial on developing enterprise applications, which you can read from start to finish to understand the scope of the book's lessons. The next section, the bulk of the book, is a detailed reference to the patterns themselves. Each pattern provides usage and implementation information, as well as detailed code examples in Java or C#. The entire book is also richly illustrated with UML diagrams to further explain the concepts. Armed with this book, you will have the knowledge necessary to make important architectural decisions about building an enterprise application and the proven patterns for use when building them. The topics covered include

- Dividing an enterprise application into layers
- The major approaches to organizing business logic
- An in-depth treatment of mapping between objects and relational databases
- Using Model-View-Controller to organize a Web presentation
- Handling concurrency for data that spans multiple transactions
- Designing distributed object interfaces

This text provides an accessible and concise introduction to those systems analysis techniques most widely used within the business environment.

The Definitive Refactoring Guide, Fully Revamped for Ruby With refactoring, programmers can transform even the most chaotic software into well-designed

systems that are far easier to evolve and maintain. What's more, they can do it one step at a time, through a series of simple, proven steps. Now, there's an authoritative and extensively updated version of Martin Fowler's classic refactoring book that utilizes Ruby examples and idioms throughout—not code adapted from Java or any other environment. The authors introduce a detailed catalog of more than 70 proven Ruby refactorings, with specific guidance on when to apply each of them, step-by-step instructions for using them, and example code illustrating how they work. Many of the authors' refactorings use powerful Ruby-specific features, and all code samples are available for download. Leveraging Fowler's original concepts, the authors show how to perform refactoring in a controlled, efficient, incremental manner, so you methodically improve your code's structure without introducing new bugs. Whatever your role in writing or maintaining Ruby code, this book will be an indispensable resource. This book will help you

- * Understand the core principles of refactoring and the reasons for doing it
- * Recognize "bad smells" in your Ruby code
- * Rework bad designs into well-designed code, one step at a time
- * Build tests to make sure your refactorings work properly
- * Understand the challenges of refactoring and how they can be overcome
- * Compose methods to package code properly
- * Move features between objects to place responsibilities where they fit best
- * Organize data to make it easier to work with
- * Simplify conditional expressions and make more effective use of polymorphism
- * Create interfaces that are easier to understand and use
- * Generalize more effectively
- * Perform larger refactorings that transform entire software systems and may take months or years
- * Successfully refactor Ruby on Rails code

When carefully selected and used, Domain-Specific Languages (DSLs) may simplify complex code, promote effective communication with customers, improve productivity, and unclog development bottlenecks. In *Domain-Specific Languages*, noted software development expert Martin Fowler first provides the information software professionals need to decide if and when to utilize DSLs. Then, where DSLs prove suitable, Fowler presents effective techniques for building them, and guides software engineers in choosing the right approaches for their applications. This book's techniques may be utilized with most modern object-oriented languages; the author provides numerous examples in Java and C#, as well as selected examples in Ruby. Wherever possible, chapters are organized to be self-standing, and most reference topics are presented in a familiar patterns format. Armed with this wide-ranging book, developers will have the knowledge they need to make important decisions about DSLs—and, where appropriate, gain the significant technical and business benefits they offer. The topics covered include: How DSLs compare to frameworks and libraries, and when those alternatives are sufficient Using parsers and parser generators, and parsing external DSLs Understanding, comparing, and choosing DSL language constructs Determining whether to use code generation, and comparing code generation strategies Previewing new language workbench tools for creating

DSLs

The Systems Modeling Language (SysML) extends UML with powerful systems engineering capabilities for modeling a wider spectrum of systems and capturing all aspects of a system's design. SysML Distilled is the first clear, concise guide for everyone who wants to start creating effective SysML models. (Drawing on his pioneering experience at Lockheed Martin and NASA, Lenny Delligatti illuminates SysML's core components and provides practical advice to help you create good models and good designs. Delligatti begins with an easy-to-understand overview of Model-Based Systems Engineering (MBSE) and an explanation of how SysML enables effective system specification, analysis, design, optimization, verification, and validation. Next, he shows how to use all nine types of SysML diagrams, even if you have no previous experience with modeling languages. A case study running through the text demonstrates the use of SysML in modeling a complex, real-world sociotechnical system. Modeled after Martin Fowler's classic UML Distilled, Delligatti's indispensable guide quickly teaches you what you need to know to get started and helps you deepen your knowledge incrementally as the need arises. Like SysML itself, the book is method independent and is designed to support whatever processes, procedures, and tools you already use. Coverage Includes Why SysML was created and the business case for using it Quickly putting SysML to practical use What to know before you start a SysML modeling project Essential concepts that apply to all SysML diagrams SysML diagram elements and relationships Diagramming block definitions, internal structures, use cases, activities, interactions, state machines, constraints, requirements, and packages Using allocations to define mappings among elements across a model SysML notation tables, version changes, and sources for more information

Would you like to understand the most important elements of Class diagrams? (See page 35.) Do you want to see the new UML 2.0 interaction frame notation for adding control flow to sequence diagrams (see page 58) and the unofficial notation that many prefer? (See page 60.) Do you want to know what changes have been made to all versions of the UML? (See page 151.) Do you want a quick reference to the most useful parts of the UML notation? (See the inside covers.) Do you want to find out what diagram types were added to the UML 2.0 without wading through the spec? (See page 11.) More than 300,000 developers have benefited from past editions of UML Distilled . This third edition is the best resource for quick, no-nonsense insights into understanding and using UML 2.0 and prior versions of the UML. Some readers will want to quickly get up to speed with the UML 2.0 and learn the essentials of the UML. Others will use this book as a handy, quick reference to the most common parts of the UML. The author delivers on both of these promises in a short, concise, and focused presentation. This book describes all the major UML diagram types, what they're used for, and the basic notation involved in creating and deciphering them. These diagrams include class, sequence, object, package, deployment, use case, state machine,

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activity, communication, composite structure, component, interaction overview, and timing diagrams. The examples are clear and the explanations cut to the fundamental design logic. If you are like most developers, you don't have time to keep up with all the new innovations in software engineering. This new edition of Fowler's classic work gets you acquainted with some of the best thinking about efficient object-oriented software design using the UML--in a convenient format that will be essential to anyone who designs software professionally.

UML, the Universal Modeling Language, was the first programming language designed to fulfill the requirement for "universality." However, it is a software-specific language, and does not support the needs of engineers designing from the broader systems-based perspective. Therefore, SysML was created. It has been steadily gaining popularity, and many companies, especially in the heavily-regulated Defense, Automotive, Aerospace, Medical Device and Telecomms industries, are already using SysML, or are planning to switch over to it in the near future. However, little information is currently available on the market regarding SysML. Its use is just on the crest of becoming a widespread phenomenon, and so thousands of software engineers are now beginning to look for training and resources. This book will serve as the one-stop, definitive guide that provide an introduction to SysML, and instruction on how to implement it, for all these new users. *SysML is the latest emerging programming language--250,000 estimated software systems engineers are using it in the US alone! *The first available book on SysML in English *Insider information! The author is a member of the SysML working group and has written sections of the specification *Special focus comparing SysML and UML, and explaining how both can work together

The popular Unified Modeling Language (UML) is both a language and notation developed by the Object Management Group (OMG) used to design and create specifications for software systems. With the recent release of version 2.0 UML, the OMG has started the OMG-Certified UML Professional Program to provide an objective measure of UML knowledge. As a certified UML professional a developer has an important credential to present to employers and clients. Certification also benefits companies looking for skilled UML practitioners by giving them a basis for making hiring and promotion decisions. UML 2 Certification Guide is the only official study guide to passing the new UML exams. This book systematically covers all of the topics covered in the exams, and has been carefully reviewed by the OMG. The book begins by assuming only a basic knowledge of UML and then progresses far enough to allow a reader to pass both the fundamental and the intermediate level exams. Along the way the book also covers topics that are not in introductory books on UML but that are necessary to pass the exams. Tim Weilkiens is considered one of the top ten experts on UML, and both authors have extensive experience training developers to successfully take the exams. The official certification resource Assumes a basic knowledge of UML so that you can focus immediately on the exams Written

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both inside and outside of the realm of software development Includes a practice
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