

Learning Uml 2 0 A Pragmatic Introduction To Uml

Covering the breadth of a large topic, this book provides a thorough grounding in object-oriented concepts, the software development process, UML and multi-tier technologies. After covering some basic ground work underpinning OO software projects, the book follows the steps of a typical development project (Requirements Capture - Design - Specification & Test), showing how an abstract problem is taken through to a concrete solution. The book is programming language agnostic - so code is kept to a minimum to avoid detail and deviation into implementation minutiae. A single case study running through the text provides a realistic example showing development from an initial proposal through to a finished system. Key artifacts such as the requirements document and detailed designs are included. For each aspect of the case study, there is an exercise for the reader to produce similar documents for a different system.

This book presents the revised versions of nine invited lectures presented by leading researchers at the fourth edition of the International School on Formal Methods for the Design of Computer, Communication, and Software Systems, SFT 2004, held in Bertinoro, Italy, September 2004. SFM 2004 is devoted to real-time systems. The lectures presented cover formal models and languages for the specification, modeling, analysis, and verification of time-critical systems, the expressiveness of such models and languages, as well as supporting tools and related applications in different domains. The book offers a unique and comprehensive state-of-the-art survey on real-time systems. Researchers and advanced students will appreciate the book as a valuable source of reference and a systematic guide to the use of formal methods for the specification, analysis, and verification of real-time systems.

The acclaimed beginner's book on object technology now presents UML 2.0, Agile Modeling, and the latest in object development techniques.

"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

Globe-trotting travelers have long resorted to handy, pocket-size dictionaries as an aid to communicating across the language barrier. Dan Pilone's UML 2.0 Pocket Reference is just such an aid for on-the-go developers who need to converse in the Unified Modeling Language (UML). Use this book to decipher the many UML diagrams you'll encounter on the path to delivering a modern software system. Updated to cover the very latest in UML, you'll find coverage of the following UML 2.0 diagram types: Class diagrams Component diagrams* Sequence diagrams* Communication diagrams* Timing diagrams* Interaction Overview diagrams* Package diagrams* Deployment diagrams* Use case diagrams Composite structure diagrams* Activity diagrams* Statechart diagrams* * New or expanded coverage in this edition Also new in this edition is coverage of UML's Object Constraint Language (OCL). Using OCL, you can specify more narrowly the functionality described in a given diagram by recording limits that are the result of business rules and other factors. The UML 2.0 Pocket Reference travels well to meetings and fits nicely into your laptop bag. It's near impossible to memorize all aspects of UML, and with this book along, you won't have to.

This book constitutes the refereed proceedings of the First European Workshop on Software Architecture, EWSA 2004, held in St Andrews, Scotland, UK in May 2004 in conjunction with ICSE 2004. The 9 revised full research papers, 4 revised full experience papers, and 6 revised position papers presented together with 5 invited presentations on ongoing European projects on software architectures were carefully reviewed and selected from 48 submissions. All current aspects of software architectures are addressed ranging from foundational and methodological issues to application issues of practical relevance.

A fast and easy five-step UML approach developed by the author is the basis of this practical introduction to the application of UML in a .NET world.

"Designing Software Product Lines with UML is well-written, informative, and addresses a very important topic. It is a valuable contribution to the literature in this area, and offers practical guidance for software architects and engineers." --Alan Brown Distinguished Engineer, Rational Software, IBM Software Group "Gomaa's process and UML extensions allow development teams to focus on feature-oriented development and provide a basis for improving the level of reuse across multiple software development efforts. This book will be valuable to any software development professional who needs to manage across projects and wants to focus on creating software that is consistent, reusable, and modular in nature." --Jeffrey S Hammond Group Marketing Manager, Rational Software, IBM Software Group "This book brings together a good range of concepts for understanding software product lines and provides an organized method for developing product lines using object-oriented techniques with the UML. Once again, Hassan has done an excellent job in balancing the needs of both experienced and novice software engineers." --Robert G. Pettit IV, Ph.D. Adjunct Professor of Software Engineering, George Mason University "This breakthrough book provides a comprehensive step-by-step approach on how to develop software product lines, which is of great strategic benefit to industry. The development of software product lines enables significant reuse of software architectures. Practitioners will benefit from the well-defined PLUS process and rich case studies." --Hurley V. Blankenship II Program Manager, Justice and Public Safety, Science Applications International

Corporation "The Product Line UML based Software engineering (PLUS) is leading edge. With the author's wide experience and deep knowledge, PLUS is well harmonized with architectural and design pattern technologies." --Michael Shin Assistant Professor, Texas Tech University Long a standard practice in traditional manufacturing, the concept of product lines is quickly earning recognition in the software industry. A software product line is a family of systems that shares a common set of core technical assets with preplanned extensions and variations to address the needs of specific customers or market segments. When skillfully implemented, a product line strategy can yield enormous gains in productivity, quality, and time-to-market. Studies indicate that if three or more systems with a degree of common functionality are to be developed, a product-line approach is significantly more cost-effective. To model and design families of systems, the analysis and design concepts for single product systems need to be extended to support product lines. Designing Software Product Lines with UML shows how to employ the latest version of the industry-standard Unified Modeling Language (UML 2.0) to reuse software requirements and architectures rather than starting the development of each new system from scratch. Through real-world case studies, the book illustrates the fundamental concepts and technologies used in the design and implementation of software product lines. This book describes a new UML-based software design method for product lines called PLUS (Product Line UML-based Software engineering). PLUS provides a set of concepts and techniques to extend UML-based design methods and processes for single systems in a new dimension to address software product lines. Using PLUS, the objective is to explicitly model the commonality and variability in a software product line. Hassan Gomaa explores how each of the UML modeling views--use case, static, state machine, and interaction modeling--can be extended to address software product families. He also discusses how software architectural patterns can be used to develop a reusable component-based architecture for a product line and how to express this architecture as a UML platform-independent model that can then be mapped to a platform-specific model. Key topics include: Software product line engineering process, which extends the Unified Development Software Process to address software product lines Use case modeling, including modeling the common and variable functionality of a product line Incorporating feature modeling into UML for modeling common, optional, and alternative product line features Static modeling, including modeling the boundary of the product line and information-intensive entity classes Dynamic modeling, including using interaction modeling to address use-case variability State machines for modeling state-dependent variability Modeling class variability using inheritance and parameterization Software architectural patterns for product lines Component-based distributed design using the new UML 2.0 capability for modeling components, connectors, ports, and provided and required interfaces Detailed case studies giving a step-by-step solution to real-world product line problems Designing Software Product Lines with UML is an invaluable resource for all designers and developers in this growing field. The information, technology, and case studies presented here show how to harness the promise of software product lines and the practicality of the UML to take software design, quality, and efficiency to the next level. An enhanced online index allows readers to quickly and easily search the entire text for specific topics.

* Examples are easy to understand; diagrams aren't overly busy. * Written in user-friendly style author is known for. * Condensed, distilled presentation of the UML Superstructure document will get you up to speed with UML 2.0.

Presents instructions on using MySQL, covering such topics as installation, querying, user management, security, and backups and recovery.

Learning UML 2.0"O'Reilly Media, Inc."

"Since its original introduction in 1997, the Unified Modeling Language has revolutionized software development. Every integrated software development environment in the world--open-source, standards-based, and proprietary--now supports UML and, more importantly, the model-driven approach to software development. This makes learning the newest UML standard, UML 2.0, critical for all software developers--and there isn't a better choice than this clear, step-by-step guide to learning the language." --Richard Mark Soley, Chairman and CEO, OMG If you're like most software developers, you're building systems that are increasingly complex. Whether you're creating a desktop application or an enterprise system, complexity is the big hairy monster you must manage. The Unified Modeling Language (UML) helps you manage this complexity. Whether you're looking to use UML as a blueprint language, a sketch tool, or as a programming language, this book will give you the need-to-know information on how to apply UML to your project. While there are plenty of books available that describe UML, Learning UML 2.0 will show you how to use it. Topics covered include: Capturing your system's requirements in your model to help you ensure that your designs meet your users' needs Modeling the parts of your system and their relationships Modeling how the parts of your system work together to meet your system's requirements Modeling how your system moves into the real world, capturing how your system will be deployed Engaging and accessible, this book shows you how to use UML to craft and communicate your project's design. Russ Miles and Kim Hamilton have written a pragmatic introduction to UML based on hard-earned practice, not theory. Regardless of the software process or methodology you use, this book is the one source you need to get up and running with UML 2.0. Russ Miles is a software engineer for General Dynamics UK, where he works with Java and Distributed Systems, although his passion at the moment is Aspect Orientation and, in particular, AspectJ. Kim Hamilton is a senior software engineer at Northrop Grumman, where she's designed and implemented a variety of systems including web applications and distributed systems, with frequent detours into algorithms development.

"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 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.

UML has established itself as the industry standard for modeling software systems. Schaum's Outline of UML, Second Edition, provides you with a step-by-step guide to the notation and use of UML, with a focus on the new UML 2.0 software. The book features: Complete explanations of UML modeling technique An exploration of the new UML 2.0 infrastructure Examples and exercises Two extended cases studies New review questions And more

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 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

This fifth edition continues to build upon previous issues with its hands-on approach to systems analysis and design with an even more in-depth focus on the core set of skills that all analysts must possess. Dennis continues to capture the experience of developing and analysing systems in a way that readers can understand and apply and develop a rich foundation of skills as a systems analyst.

Offers comprehensive coverage of all major modeling viewpoints Provides details of collaboration and class diagrams for filling in the design-level models

This new book is the definitive primer for UML, and starts with the foundational concepts of object-orientation in order to provide the proper context for explaining UML.

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 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.

Essential skills for first-time programmers! This easy-to-use book explains the fundamentals of UML. You'll learn to read, draw, and use this visual modeling language to create clear and effective blueprints for software development projects. The modular approach of this series—including drills, sample projects, and mastery checks—makes it easy to learn to use this powerful programming language at your own pace.

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

Real-time and embedded systems must make the most of very limited processor and memory sources, and UML is an invaluable tool for achieving these goals. Key topics include information on tradeoffs associated with each object design approach, design patterns and identification strategies, detailed appendix on OMG, and more.

Introduces machine learning and its algorithmic paradigms, explaining the principles behind automated learning approaches and the considerations underlying their usage.

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

Thoroughly reviewed and eagerly anticipated by the agile community, User Stories Applied offers a requirements process that saves time, eliminates rework, and leads directly to better software. The best way to build software that meets users' needs is to begin with "user stories": simple, clear, brief descriptions of functionality that will be valuable to real users. In User Stories Applied, Mike Cohn provides you with a front-to-back blueprint for writing these user stories and weaving them into your development lifecycle. You'll learn what makes a great user story, and what makes a bad one. You'll discover practical ways to gather user stories, even when you can't speak with your users. Then, once you've compiled your user stories, Cohn shows how to organize them, prioritize them, and use them for planning, management, and testing. User role modeling: understanding what users have in common, and where they differ Gathering

stories: user interviewing, questionnaires, observation, and workshops Working with managers, trainers, salespeople and other "proxies" Writing user stories for acceptance testing Using stories to prioritize, set schedules, and estimate release costs Includes end-of-chapter practice questions and exercises User Stories Applied will be invaluable to every software developer, tester, analyst, and manager working with any agile method: XP, Scrum... or even your own home-grown approach.

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.

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.

"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.

A detailed and practical book and eBook walk-through showing how to apply UML to real world development projects

Presents a collection of detailed code recipes that breaks down everyday XSLT problems into manageable chunks. This work enables you learn how to transform XML documents into PDF files, SVG files, and HTML documents.

The Object-Oriented Thought Process Third Edition Matt Weisfeld An introduction to object-oriented concepts for developers looking to master modern application practices. Object-oriented programming (OOP) is the foundation of modern programming languages, including C++, Java, C#, and Visual Basic .NET. By designing with objects rather than treating the code and data as separate entities, OOP allows objects to fully utilize other objects' services as well as inherit their functionality. OOP promotes code portability and reuse, but requires a shift in thinking to be fully understood. Before jumping into the world of object-oriented programming languages, you must first master The Object-Oriented Thought Process. Written by a developer for developers who want to make the leap to object-oriented technologies as well as managers who simply want to understand what they are managing, The Object-Oriented Thought Process provides a solution-oriented approach to object-oriented programming. Readers will learn to understand object-oriented design with inheritance or composition, object aggregation and association, and the difference between interfaces and implementations. Readers will also become more efficient and better thinkers in terms of object-oriented development. This revised edition focuses on interoperability across various technologies, primarily using XML as the communication mechanism. A more detailed focus is placed on how business objects operate over networks, including client/server architectures and web services. "Programmers who aim to create high quality software—as all programmers should—must learn the varied subtleties of the familiar yet not so familiar beasts called objects and classes. Doing so entails careful study of books such as Matt Weisfeld's The Object-Oriented Thought Process." —Bill McCarty, author of Java Distributed Objects, and Object-Oriented Design in Java Matt Weisfeld is an associate professor in business and technology at Cuyahoga Community College in Cleveland, Ohio. He has more than 20 years of experience as a professional software developer, project manager, and corporate trainer using C++, Smalltalk, .NET, and Java. He holds a BS in systems analysis, an MS in computer science, and an MBA in project management. Weisfeld has published many articles in major computer trade magazines and professional journals.

Learn UML, the Unified Modeling Language, to create diagrams describing the various aspects and uses of your application before you start coding, to ensure that you have everything covered. Millions of programmers in all languages have found UML to be an invaluable asset to their craft. More than 50,000 previous readers have learned UML with Sams Teach Yourself UML in 24 Hours. Expert author Joe Schmuller takes you through 24 step-by-step lessons designed to ensure your understanding of UML diagrams and syntax. This updated edition includes the new features of UML 2.0 designed to make UML an even better modeling tool for modern object-oriented and component-based programming. The CD-ROM includes an electronic version

of the book, and Poseidon for UML, Community Edition 2.2, a popular UML modeling tool you can use with the lessons in this book to create UML diagrams immediately.

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.

The complexity of most real-time and embedded systems often exceeds that of other types of systems since, in addition to the usual spectrum of problems inherent in software, they need to deal with the complexities of the physical world. That world—as the proverbial Mr. Murphy tells us—is an unpredictable and often unfriendly place. Consequently, there is a very strong motivation to investigate and apply advanced design methods and technologies that could simplify and improve the reliability of real-time software design and implementation. As a result, from the first versions of UML issued in the mid 1990's, designers of embedded and real-time systems have taken to UML with vigour and enthusiasm. However, the dream of a complete, model-driven design flow from specification through automated, optimised code generation, has been difficult to realise without some key improvements in UML semantics and syntax, specifically targeted to the real-time systems problem. With the enhancements in UML that have been proposed and are near standardisation with UML 2. 0, many of these improvements have been made. In the Spring of 2003, adoption of a formalised UML 2. 0 specification by the members of the Object Management Group (OMG) seems very close. It is therefore very appropriate to review the status of UML as a set of notations for embedded real-time systems - both the state of the art and best practices achieved up to this time with UML of previous generations - and where the changes embodied in the 2.

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

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.

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 by two authors known for their skill as trainers, consultants, and developers Developed systematically to enable you to master all exam topics—without exception Covers the use of UML for applications, as required by the exams, both inside and outside of the realm of software development Includes a practice exam, glossary, list of books, and website information

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

A catalog of solutions to commonly occurring design problems, presenting 23 patterns that allow designers to create flexible and reusable designs for object-oriented software. Describes the circumstances in which each pattern is applicable, and discusses the consequences and trade-offs of using the pattern within a larger design. Patterns are compiled from real systems, and include code for implementation in object-oriented programming languages like C++ and Smalltalk. Includes a bibliography. Annotation copyright by Book News, Inc., Portland, OR

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