

Uml Classroom An Introduction To Object Oriented Modeling Undergraduate Topics In Computer Science

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

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.

UML @ ClassroomAn Introduction to Object-Oriented ModelingSpringer

"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

Database marketing is at the crossroads of technology, business strategy, and customer relationship management. Enabled by sophisticated information and communication systems, today's organizations have the capacity to analyze customer data to inform and enhance every facet of the enterprise—from branding and promotion campaigns to supply chain management to employee training to new product development. Based on decades of collective research, teaching, and application in the field, the authors present the most comprehensive treatment to date of database marketing, integrating theory and practice. Presenting rigorous models, methodologies, and techniques (including data collection, field testing, and predictive modeling), and illustrating them through dozens of examples, the authors cover the full spectrum of principles and topics related to database marketing. "This is an excellent in-depth overview of both well-known and very recent topics in customer management models. It is an absolute must for marketers who want to enrich their knowledge on customer analytics." (Peter C. Verhoef, Professor of Marketing, Faculty of Economics and Business, University of Groningen) "A marvelous combination of relevance and sophisticated yet understandable analytical material. It should be a standard reference in the area for many years." (Don Lehmann, George E. Warren Professor of Business, Columbia Business School) "The title tells a lot about the book's approach—though the cover reads, "database," the content is mostly about customers and that's where the real-world action is. Most enjoyable is the comprehensive story – in case after case – which clearly explains what the analysis and concepts really mean. This is an essential read for those interested in database marketing, customer relationship management and customer optimization." (Richard Hochhauser, President and CEO, Harte-Hanks, Inc.) "In this tour de force of careful scholarship, the authors canvass the ever expanding literature on database marketing. This book will become an invaluable reference or text for anyone practicing, researching, teaching or studying the subject." (Edward C. Malthouse, Theodore R. and Annie Laurie Sills Associate Professor of Integrated Marketing Communications, Northwestern University)

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

Learn how to move to UML for current users of the Booch/OMT/Objectory methods * Provides numerous real-world examples and a complete case study that walks you through the project life cycle-analysis, design, and construction * Includes CD-ROM with Rational Rose(r) 4.0 demo, analysis and design models in UML, and Java(TM) code HANS-ERIK ERIKSSON AND MAGNUS PENKER Quickly acquire the knowledge and skills you need to make the most of this revolutionary visual modeling language With the release of UML, object-oriented developers at last have a common language for modeling and developing software systems. That means less time wasted sorting out conflicting terms and symbols and more time spent modeling better software systems. Now this powerful book/CD package arms you with everything you need to make the most of UML and the rapidly growing suite of UML-based products. The authors walk you through the entire language, providing easy-to-follow guidelines and loads of real-world examples. They also give you detailed explanations of all UML diagrams, a full-length case study showing how UML is used to develop an application, a visual glossary of all UML notations, and step-by-step instructions on how to: * Move to UML from Booch, OMT, and Objectory * Map Java to UML-including many full-blown examples * Define design patterns and how to use patterns in UML * Describe real-time systems in UML * Employ use cases to capture a system's functional requirements On the CD-ROM you'll find: * All UML models from the book * All the Java code from the book * Demo version of Rational Rose(r) 4.0

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.

Object-oriented analysis and design (OOAD) has over the years, become a vast field, encompassing such diverse topics as design process and principles, documentation tools, refactoring, and design and architectural patterns. For most students the learning experience is incomplete without implementation. This new textbook provides a comprehensive introduction to OOAD. The salient points of its coverage are: • A sound footing on object-oriented concepts such as classes, objects, interfaces, inheritance, polymorphism, dynamic linking, etc. • A good introduction to the stage of requirements analysis. • Use of UML to document user requirements and design. • An extensive treatment of the design process. • Coverage of implementation issues. • Appropriate use of design and architectural patterns. • Introduction to the art and craft of refactoring. • Pointers to resources that further the reader's knowledge. All the main case-studies used for this book have been implemented by the authors using Java. The text is liberally peppered with snippets of code, which are short and fairly self-explanatory and easy to read. Familiarity with a Java-like syntax and a broad understanding of the structure of Java would be helpful in using the book to its full potential.

This book focuses on various topics related to engineering and management of requirements, in particular elicitation, negotiation, prioritisation, and documentation (whether with natural languages or with graphical models). The book provides methods and techniques that help to characterise, in a systematic manner, the requirements of the intended engineering system. It was written with the goal of being adopted as the main text for courses on requirements engineering, or as a strong reference to the topics of requirements in courses with a broader scope. It can also be used in vocational courses, for professionals interested in the software and information systems domain. Readers who have finished this book will be able to: - establish and plan a requirements engineering process within the development of complex engineering systems; - define and identify the types of relevant requirements in engineering projects; - choose and apply the most appropriate techniques to elicit the requirements of a given system; - conduct and manage negotiation and prioritisation processes for the requirements of a given engineering system; - document the requirements of the system under development, either in natural language or with graphical and formal models. Each chapter includes a set of exercises.

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.

Diagramming and process are important topics in today's software development world, as the UML diagramming language has come to be almost universally accepted. Yet process is necessary; by themselves, diagrams are of little use. Use Case Driven Object Modeling with UML - Theory and Practice combines the notation of UML with a lightweight but effective process - the ICONIX process - for designing and developing software systems. ICONIX has developed a growing following over the years. Sitting between the free-for-all of Extreme Programming and overly rigid processes such as RUP, ICONIX offers just enough structure to be successful.

Introduction to Credit Risk focuses on analysis of credit risk, derivatives, equity investments, portfolio management, quantitative methods, and risk management. In terms of application, this book can be used as an important tool to explain how to generate data rows of expected exposure to counterparty credit risk. The book also directs the reader on

how to visualize, in real time, the results of this data, generated with a Java tool. Features Uses an in-depth case study to illustrate multiple factors in counterparty credit risk exposures Suitable for quantitative risk managers at banks, as well as students of finance, financial mathematics, and software engineering Provides the reader with numerous examples and applications Giulio Carlone has an MBA, a PhD, and a Master's degree in Computer Science from the University of Italy. He is a member of the software system engineering staff of the Department of Computer Science at University College London. He has 20 years of practical experience in technical software engineering and quantitative finance engineering in the commercial sector. His research interests include the use of communication strategies and the implementation of plans and projects using financial software for requirement specifications, requirements analysis, and architectural design.

This book describes the concepts and application of model-based development (MBD), model transformations, and Agile MBD to a wide range of software systems. It covers systems requirements engineering, system specification and design, verification, reuse, and system composition in the context of Agile MBD. Examples of applications in finance, system migration, internet systems and software refactoring are given. An established open-source MBD technology, UML-RSDS, is used throughout to illustrate the concepts. The book is suitable for industrial practitioners who need training in Agile MBD, and those who need to understand the issues to be considered when introducing MBD in an industrial context. It is also suitable for academic researchers, and for use as text for undergraduate or postgraduate courses in MBD. Examples for educational use of UML-RSDS are included in the book.

Overview: This text will be the first to present an object-oriented methodology from the outset for beginning Systems Analysis and Design students. It is the first book to introduce object-oriented methods without relying on classical methods to introduce key concepts or without requiring students to know Java or C++. It will presume no knowledge whatsoever about process modeling or data modeling. The widely used UML notation (unified modeling language) will be used throughout the book for all diagrams and model renderings. The key benefit to this approach is that it makes the course easier to teach and learn since many students come to this course with limited backgrounds having only taken one introductory MIS course. Also, this approach is appealing because object-oriented methodology is widely used in industry.

This book presents the analysis, design, documentation, and quality of software solutions based on the OMG UML v2.5. Notably it covers 14 different modelling constructs including use case diagrams, activity diagrams, business-level class diagrams, corresponding interaction diagrams and state machine diagrams. It presents the use of UML in creating a Model of the Problem Space (MOPS), Model of the Solution Space (MOSS) and Model of the Architectural Space (MOAS). The book touches important areas of contemporary software engineering ranging from how a software engineer needs to invariably work in an Agile development environment through to the techniques to model a Cloud-based solution.

This book attempts to capture the spirit of the "Bronze Age" of video games, when video games were designed as circuits, not as software. We'll delve into these circuits as they morph from Pong into programmable personal computers and game consoles. Instead of wire-wrap and breadboards, we'll use modern tools to approximate these old designs in a simulated environment from the comfort of our keyboards. At the end of this adventure, you should be well-equipped to begin exploring the world of FPGAs, and maybe even design your own game console. You'll use the 8bitworkshop.com IDE to write Verilog programs that represent digital circuits, and see your code run instantly in the browser.

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.

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 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).

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.

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.

UML for Developing Knowledge Management Systems provides knowledge engineers the framework in which to identify types of knowledge and where this knowledge exists in an organization. It also shows ways in which to use a standard recognized notation to capture, or model, knowledge to be used in a knowledge management system (KMS). This volume

The First Complete Guide to DevOps for Software Architects DevOps promises to accelerate the release of new software features and improve monitoring of systems in production, but its crucial implications for software architects and architecture are often ignored. In *DevOps: A Software Architect's Perspective*, three leading architects address these issues head-on. The authors review decisions software architects must make in order to achieve DevOps' goals and clarify how other DevOps participants are likely to impact the architect's work. They also provide the organizational, technical, and operational context needed to deploy DevOps more efficiently, and review DevOps' impact on each development phase. The authors address cross-cutting concerns that link multiple functions, offering practical insights into compliance, performance, reliability, repeatability, and security. This guide demonstrates the authors' ideas in action with three real-world case studies: datacenter replication for business continuity, management of a continuous deployment pipeline, and migration to a microservice architecture. Comprehensive coverage includes

- Why DevOps can require major changes in both system architecture and IT roles
- How virtualization and the cloud can enable DevOps practices
- Integrating operations and its service lifecycle into DevOps
- Designing new systems to work well with DevOps practices
- Integrating DevOps with agile methods and TDD
- Handling failure detection, upgrade planning, and other key issues
- Managing consistency issues arising from DevOps' independent deployment models
- Integrating security controls, roles, and audits into DevOps
- Preparing a business plan for DevOps adoption, rollout, and measurement

The easy way to learn programming fundamentals with Python Python is a remarkably powerful and dynamic programming language that's used in a wide variety of application domains. Some of its key distinguishing features include a very clear, readable syntax, strong introspection capabilities, intuitive object orientation, and natural expression of procedural code. Plus, Python features full modularity, supporting hierarchical packages, exception-based error handling, and modules easily written in C, C++, Java, R, or .NET languages, such as C#. In addition, Python supports a number of coding styles that include: functional, imperative, object-oriented, and procedural. Due to its ease of use and flexibility, Python is constantly growing in popularity—and now you can wear your programming hat with pride and join the ranks of the pros with the help of this guide. Inside, expert author John Paul Mueller gives a complete step-by-step overview of all there is to know about Python. From performing common and advanced tasks, to collecting data, to interacting with package—this book covers it all! Use Python to create and run your first application Find out how to troubleshoot and fix errors Learn to work with Anaconda and use Magic Functions Benefit from completely updated and revised information since the last edition If you've never used Python or are new to programming in general, *Beginning Programming with Python For Dummies* is a helpful resource that will set you up for success.

This book focuses on software architecture and the value of architecture in the development of long-lived, mission-critical, trustworthy software-systems. The author introduces and demonstrates the powerful strategy of “Managed Evolution,” along with the engineering best practice known as “Principle-based Architecting.” The book examines in detail architecture principles for e.g., Business Value, Changeability, Resilience, and Dependability. The author argues that the software development community has a strong responsibility to produce and operate useful, dependable, and trustworthy software. Software should at the same time provide business value and guarantee many quality-of-service properties, including security, safety, performance, and integrity. As Dr. Furrer states, “Producing dependable software is a balancing act between investing in the implementation of business functionality and investing in the quality-of-service properties of the software-systems.” The book presents extensive coverage of such concepts as: Principle-Based Architecting Managed Evolution Strategy The Future Principles for Business Value Legacy Software Modernization/Migration Architecture Principles for Changeability Architecture Principles for Resilience Architecture Principles for Dependability The text is supplemented with numerous figures, tables, examples and illustrative quotations. *Future-Proof Software-Systems* provides a set of good engineering practices, devised for integration into most software development processes dedicated to the creation of software-systems that incorporate Managed Evolution.

A concise and practical introduction to the foundations and engineering principles of self-adaptation Though it has recently gained significant momentum, the topic of self-adaptation remains largely under-addressed in academic and technical literature. This book changes that. Using a systematic and holistic approach, *An Introduction to Self-adaptive Systems: A Contemporary Software Engineering Perspective* provides readers with an accessible set of basic principles, engineering foundations, and applications of self-adaptation in software-intensive systems. It places self-adaptation in the context of techniques like uncertainty management, feedback control, online reasoning, and machine learning while acknowledging the growing consensus in the software engineering community that self-adaptation will be a crucial enabling feature in tackling the challenges of new, emerging, and future systems. The author combines cutting-edge technical research with basic principles and real-world insights to create a practical and strategically effective guide to self-adaptation. He includes features such as: An analysis of the foundational engineering principles and applications of self-adaptation in different domains, including the Internet-of-Things, cloud computing, and cyber-physical systems End-of-chapter exercises at four different levels of complexity and difficulty An accompanying author-hosted website with slides, selected exercises and solutions, models, and code Perfect for researchers, students, teachers, industry leaders, and practitioners in fields that directly or peripherally involve software engineering, as well as those in academia involved in a class on self-adaptivity, this book belongs on the shelves of anyone with an interest in the future of software and its engineering.

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.

This easy-to-follow textbook teaches Java programming from first principles, as well as covering design and testing methodologies. The text is divided into two parts. Each part supports a one-semester module, the first part addressing fundamental programming concepts, and the second part building on this foundation, teaching the skills required to develop more advanced applications. This fully updated and greatly enhanced fourth edition covers the key developments introduced in Java 8, including material on JavaFX, lambda expressions and the Stream API. Topics and features: begins by introducing fundamental programming concepts such as declaration of variables, control structures, methods and arrays; goes on to cover the fundamental object-oriented concepts of classes and objects, inheritance and polymorphism; uses JavaFX throughout for constructing event-driven graphical interfaces; includes advanced topics such as interfaces and lambda expressions, generics, collection classes and exceptions; explains file-handling techniques, packages, multi-threaded programs, socket programming, remote database access and processing collections using streams; includes self-test questions and programming exercises at the end of each chapter, as well as two illuminating case studies; provides additional resources at its associated website (simply go to springer.com and search for "Java in Two Semesters"), including a guide on how to install and use the NetBeans™ Java IDE. Offering a gentle introduction to the field, assuming no prior knowledge of the subject, Java in Two Semesters is the ideal companion to undergraduate modules in software development or programming.

Human medicine has long recognized the health implications of stress on our physical and mental health. Dogs feel stress too. Learn how to identify and resolve more than 30 signs of stress in dogs and help your dog live a longer, happier life. Simple, sensible solutions for both the professional and concerned dog owner. Includes dozens of full color illustrations.

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.

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 book constitutes the revised selected papers from the 6th IFIP WG 2.6 International Symposium on Data-Driven Process Discovery and Analysis, SIMPDA 2016, held in Graz, Austria in December 2016. The 5 papers presented in this volume were carefully reviewed and selected from 18 submissions. In this edition, the presentations focused on the adoption of process mining algorithms for continuous monitoring of business process. They underline the most relevant challenges identified and propose novel solutions for their resolution.

"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.

Object Oriented Simulation will qualify as a valuable resource to students and accomplished professionals and researchers alike, as it provides an extensive, yet comprehensible introduction to the basic principles of object-oriented modeling, design and implementation of simulation models. Key features include an introduction to modern commercial graphical simulation and animation software, accessible breakdown of OOSimL language constructs through various programming principles, and extensive tutorial materials ideal for undergraduate classroom use.

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.

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

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