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KEY=PRINCIPLES - ALEENA LEON

INTRODUCTION TO SOFTWARE ENGINEERING DESIGN

PROCESSES, PRINCIPLES, AND PATTERNS WITH UML2

Pearson The focus of Introduction to Software Engineering Design is the processes, principles and practices used to design software products. **KEY TOPICS:** The discipline of design, generic design processes, and managing design are introduced in Part I. Part II covers software product design, use case modeling, and user interface design. Part III of the book is its core and covers engineering data analysis, including conceptual modeling, and both architectural and detailed engineering design. **MARKET:** This book is for anyone interested in learning software design.

UML 2 AND THE UNIFIED PROCESS

PRACTICAL OBJECT-ORIENTED ANALYSIS AND DESIGN

Pearson Education "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

UML 2. 0 IN ACTION

A PROJECT-BASED TUTORIAL

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

SOFTWARE ENGINEERING DESIGN

THEORY AND PRACTICE

CRC Press Taking a learn-by-doing approach, Software Engineering Design: Theory and Practice uses examples, review questions, chapter exercises, and case study assignments to provide students and practitioners with the understanding required to design complex software systems. Explaining the concepts that are immediately relevant to software designers, it be

APPLYING UML & PATTERNS 3RD EDITION

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

included

UML 2 TOOLKIT

John Wiley & Sons Gain the skills to effectively plan software applications and systems using the latest version of UML. UML 2 represents a significant update to the UML specification, from providing more robust mechanisms for modeling workflow and actions to making the modeling language more executable. Now in its second edition, this bestselling book provides you with all the tools you'll need for effective modeling with UML 2. The authors get you up to speed by presenting an overview of UML and its main features. You'll then learn how to apply UML to produce effective diagrams as you progress through more advanced topics such as use-case diagrams, classes and their relationships, dynamic diagrams, system architecture, and extending UML. The authors take you through the process of modeling with UML so that you can successfully deliver a software product or information management system. With the help of numerous examples and an extensive case study, this book teaches you how to:

- * Organize, describe, assess, test, and realize use cases
- * Gain substantial information about a system by using classes
- * Utilize activity diagrams, state machines, and interaction diagrams to handle common issues
- * Extend UML features for specific environment or domains
- * Use UML as part of a Model Driven Architecture initiative
- * Apply an effective process for using UML

The CD-ROM contains all of the UML models and Java™ code for a complete application, Java™ 2 Platform, Standard Edition, Version 1.4.1, and links to the Web sites for vendors of UML 2 tools.

APPLYING UML AND PATTERNS

AN INTRODUCTION TO OBJECT-ORIENTED ANALYSIS AND DESIGN AND ITERATIVE DEVELOPMENT

Pearson Presents a step-by-step process to master object-oriented analysis and design, from requirements gathering all the way to code generation, using the latest version of the industry standard modeling language. Original. (Advanced)

LEARNING UML 2.0

"O'Reilly Media, Inc." 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.

MODERN PRINCIPLES, PRACTICES, AND ALGORITHMS FOR CLOUD SECURITY

IGI Global In today's modern age of information, new technologies are quickly emerging and being deployed into the field of information technology. Cloud computing is a tool that has proven to be a versatile piece of software within IT. Unfortunately, the high usage of Cloud has raised many concerns related to privacy, security, and data protection that have prevented cloud computing solutions from becoming the prevalent alternative for mission critical systems. Up-to-date research and current techniques are needed to help solve these vulnerabilities in cloud computing. Modern Principles, Practices, and Algorithms for Cloud Security is a pivotal reference source that provides vital research on the application of privacy and security in cloud computing. While highlighting topics such as chaos theory, soft computing, and cloud forensics, this publication explores present techniques and methodologies, as well as current trends in cloud protection. This book is ideally designed for IT specialists, scientists, software developers, security analysts, computer engineers, academicians, researchers, and students seeking current research on the defense of cloud services.

UML 2 UND PATTERNS ANGEWENDET - OBJEKTORIENTIERTE SOFTWAREENTWICKLUNG

mitp Verlags GmbH & Co. KG Dieses Lehrbuch des international bekannten Autors und Software-Entwicklers Craig Larman ist ein Standardwerk zur objektorientierten Analyse und Design unter Verwendung von UML 2.0 und Patterns. Das Buch zeichnet sich insbesondere durch die Fähigkeit des Autors aus, komplexe Sachverhalte anschaulich und praxisnah darzustellen. Es vermittelt grundlegende OOA/D-Fertigkeiten und bietet umfassende Erläuterungen zur iterativen Entwicklung und zum Unified Process (UP). Anschliessend werden zwei Fallstudien vorgestellt, anhand derer die einzelnen Analyse- und Designprozesse des UP in Form einer Inception-, Elaboration- und Construction-Phase durchgespielt werden

DESIGNING SOFTWARE-INTENSIVE SYSTEMS: METHODS AND PRINCIPLES

METHODS AND PRINCIPLES

IGI Global "This book addresses the complex issues associated with software engineering environment capabilities for designing real-time embedded software systems"--Provided by publisher.

UML 2 FOR DUMMIES

John Wiley & Sons 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

REFACTORING

IMPROVING THE DESIGN OF EXISTING CODE

Addison-Wesley As the application of object technology--particularly the Java programming language--has become commonplace, a new problem has emerged to confront the software development community. Significant numbers of poorly designed programs have been created by less-experienced developers, resulting in applications that are inefficient and hard to maintain and extend. Increasingly, software system professionals are discovering just how difficult it is to work with these inherited, "non-optimal" applications. For several years, expert-level object programmers have employed a growing collection of techniques to improve the structural integrity and performance of such existing software programs. Referred to as "refactoring," these practices have remained in the domain of experts because no attempt has been made to transcribe the lore into a form that all developers could use. . .until now. In *Refactoring: Improving the Design of Existing Code*, renowned object technology mentor Martin Fowler breaks new ground, demystifying these master practices and demonstrating how software practitioners can realize the significant benefits of this new process. With proper training a skilled system designer can take a bad design and rework it into well-designed, robust code. In this book, Martin Fowler shows you where opportunities for refactoring typically can be found, and how to go about reworking a bad design into a good one. Each refactoring step is simple--seemingly too simple to be worth doing. Refactoring may involve moving a field from one class to another, or pulling some code out of a method to turn it into its own method, or even pushing some code up or down a hierarchy. While these individual steps may seem elementary, the cumulative effect of such small changes can radically improve the design. Refactoring is a proven way to prevent software decay. In addition to discussing the various techniques of refactoring, the author provides a detailed catalog of more than seventy proven refactorings with helpful pointers that teach you when to apply them; step-by-step instructions for applying each refactoring; and an example illustrating how the refactoring works. The illustrative examples are written in Java, but the ideas are applicable to any object-oriented programming language.

REFACTORING

IMPROVING THE DESIGN OF EXISTING CODE

Addison-Wesley Professional 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.

MANAGING SYSTEMS AND IT PROJECTS

Jones & Bartlett Learning Part of the new Digital Filmmaker Series! *Digital Filmmaking: An Introduction* is the first book in the new Digital Filmmaker Series. Designed for an introductory level course in digital filmmaking, it is intended for anyone who has an interest in telling stories with pictures and sound and won't assume any familiarity with equipment or concepts on the part of the student. In addition to the basics of shooting and editing, different story forms are introduced from documentary and live events through fictional narratives. Each of the topics is covered in enough depth to allow anyone with a camera and a computer to begin creating visual projects of quality.

ARCHITECTURE PRINCIPLES

THE CORNERSTONES OF ENTERPRISE ARCHITECTURE

Springer Science & Business Media Enterprises, from small to large, evolve continuously. As a result, their structures are transformed and extended continuously. Without some means of control, such changes are bound to lead to an overly complex, uncoordinated and heterogeneous environment that is hard to manage and hard to adapt to future changes. Enterprise architecture principles provide a means to direct transformations of enterprises. As a consequence, architecture principles should be seen as the cornerstones of any architecture. In this book, Greefhorst and Proper focus on the role of architecture principles. They provide both a theoretical and a practical perspective on architecture principles. The theoretical perspective involves a brief survey of the general concept of principle as well as an analysis of different flavors of principles. Architecture principles are regarded as a specific class of normative principles that direct the design of an enterprise, from the definition of its business to its supporting IT. The practical perspective on architecture principles is concerned with an approach to the formulation of architecture principles, as well as their actual use in organizations. To illustrate their use in practice, several real-life cases are discussed, an application of architecture principles in TOGAF is included, and a catalogue of example architecture principles is provided. With this broad coverage, the authors target students and researchers specializing in enterprise architecture or business information systems, as well as practitioners who want to understand the foundations underlying their practical daily work.

DESIGN PATTERNS

ELEMENTS OF REUSABLE OBJECT-ORIENTED SOFTWARE

Pearson Deutschland GmbH Software -- Software Engineering.

OBJECT - ORIENTED MODELING AND DESIGN WITH UML, 2/E

Pearson Education India The revision offers a crisp, clear explanation of the basics of object-oriented thinking via UML models, then presents a process for applying these principles to software development, including C++, Java, and relational databases. An integrated case study threads throughout the book, illustrating key ideas as well as their application.

APPLYING UML AND PATTERNS TRAINING COURSE

A DESKTOP SEMINAR FROM CRAIG LARMAN

Prentice Hall 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.

SOFTWARE MODELING AND DESIGN

UML, USE CASES, PATTERNS, AND SOFTWARE ARCHITECTURES

Cambridge University Press This book covers all you need to know to model and design software applications from use cases to software architectures in UML and shows how to apply the COMET UML-based modeling and design method to real-world problems. The author describes architectural patterns for various architectures, such as broker, discovery, and transaction patterns for service-oriented architectures, and addresses software quality attributes including maintainability, modifiability, testability, traceability, scalability, reusability, performance, availability, and security. Complete case studies illustrate design issues for different software architectures: a banking system for client/server architecture, an online shopping system for service-oriented architecture, an emergency monitoring system for component-based software architecture, and an automated guided vehicle for real-time software architecture. Organized as an introduction followed by several short, self-contained chapters, the book is perfect for senior undergraduate or graduate courses in software engineering and design, and for experienced software engineers wanting a quick reference at each stage of the analysis, design, and development of large-scale software systems.

ENCYCLOPEDIA OF INFORMATION SCIENCE AND TECHNOLOGY

IGI Global Snippet "This set of books represents a detailed compendium of authoritative, research-based entries that define the contemporary state of knowledge on technology"--Provided by publisher.

DECISION SUPPORT SYSTEMS

BoD - Books on Demand Pacing through second decade of the 21th century, more computer users are widely adopting technology-based tools and information-enriched databases to focus on supporting managerial decision making, reducing preventable faults and improving outcome forecasting. The goal of decision support systems (DSS) is to develop and deploy information technology-based systems in supporting efficient practice in multidiscipline domains. This book aims to portray a pragmatic perspective of applying DSS in the 21th century. It covers diverse applications of DSS, primarily focusing on the resource management and outcome forecast. Our goal was to provide the broad understanding of DSS and illustrate their practical applications in a variety of fields related to real life.

SYSTEMS ANALYSIS AND DESIGN IN A CHANGING WORLD

Cengage Learning Refined and streamlined, SYSTEMS ANALYSIS AND DESIGN IN A CHANGING WORLD, 7E helps students develop the conceptual, technical, and managerial foundations for systems analysis design and implementation as well as project management principles for systems development. Using case driven techniques, the succinct 14-chapter text focuses on content that is key for success in today's market. The authors' highly effective presentation teaches both traditional (structured) and object-oriented (OO) approaches to systems analysis and design. The book highlights use cases, use diagrams, and use case descriptions required for a modeling approach, while demonstrating their application to traditional, web development, object-oriented, and service-oriented architecture approaches. The Seventh Edition's refined sequence of topics makes it easier to read and understand than ever. Regrouped analysis and design chapters provide more flexibility in course organization. Additionally, the text's running cases have been completely updated and now include a stronger focus on connectivity in applications. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

PROCEEDINGS OF THE 2015 FEDERATED CONFERENCE ON SOFTWARE DEVELOPMENT AND OBJECT TECHNOLOGIES

Springer This book presents the proceedings of the International Conference SDOT which was organized at the University in Žilina, Faculty of Management Sciences and Informatics, Slovak Republic in November 19, 2015. The conference was truly international both in terms of the amount of foreign contributions and in terms of composition of steering and scientific committees. The book and the conference serves as a platform of professional exchange of knowledge and experience for the latest trends in software development and object-oriented technologies (theory and practice). This proceedings present information on the latest developments and mediate the exchange of experience between practitioners and academia.

MINE PLANNING AND EQUIPMENT SELECTION

PROCEEDINGS OF THE 22ND MPES CONFERENCE, DRESDEN, GERMANY, 14TH - 19TH OCTOBER 2013

Springer Science & Business Media This edited volume includes all papers presented at the 22nd International Conference on Mine Planning and Equipment Selection (MPES), Dresden, Germany, 2013. Mineral Resources are needed for almost all processes of modern life, whilst the mining industry is facing strict requirements regarding efficiency and sustainability. The research papers in this volume deal with the latest developments and research results in the fields of mining, machinery, automatization and environment protection.

UML DISTILLED

A BRIEF GUIDE TO THE STANDARD OBJECT MODELING LANGUAGE

Addison-Wesley Professional 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 OBJECT PRIMER

AGILE MODEL-DRIVEN DEVELOPMENT WITH UML 2.0

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

OBJECT-ORIENTED ANALYSIS AND DESIGN

Springer Science & Business Media 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.

SOFTWARE ENGINEERING TECHNIQUES

THIRD IFIP TC 2 CENTRAL AND EAST-EUROPEAN CONFERENCE, CEE-SET 2008, BRNO, CZECH REPUBLIC, OCTOBER 13-15, 2008, REVISED SELECTED PAPERS

Springer This book constitutes the thoroughly refereed post-conference proceedings of the Second IFIP TC 2 Central and East-European Conference on Software Engineering Techniques, CEE-SET 2008, held in Brno, Czech Republic, in October 2008. The 20 revised full papers presented together with a keynote speech were carefully reviewed and selected from 69 initial submissions. The papers are organized in topical sections on requirements specification, design, modeling, software product lines, code generation, project management, and quality.

ANALYSIS PATTERNS

REUSABLE OBJECT MODELS

Addison-Wesley Professional 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.

DR. DOBB'S JOURNAL

SOFTWARE TOOLS FOR THE PROFESSIONAL PROGRAMMER

EFFECTIVE MODEL-BASED SYSTEMS ENGINEERING

Springer This textbook presents a proven, mature Model-Based Systems Engineering (MBSE) methodology that has delivered success in a wide range of system and enterprise programs. The authors introduce MBSE as the state of the practice in the vital Systems Engineering discipline that manages complexity and integrates technologies and design approaches to achieve effective, affordable, and balanced system solutions to the needs of a customer organization and its personnel. The book begins with a summary of the background and nature of MBSE. It summarizes the theory behind Object-Oriented Design applied to complex system architectures. It then walks through the phases of the MBSE methodology, using system examples to illustrate key points. Subsequent chapters broaden the application of MBSE in Service-Oriented Architectures (SOA), real-time systems, cybersecurity, networked enterprises, system simulations, and prototyping. The vital subject of system and architecture governance completes the discussion. The book features exercises at the end of each chapter intended to help readers/students focus on key points, as well as extensive appendices that furnish additional detail in particular areas. The self-contained text is ideal for students in a range of courses in systems architecture and MBSE as well as for practitioners seeking a highly practical presentation of MBSE principles and techniques.

MANAGEMENT OF THE OBJECT-ORIENTED DEVELOPMENT PROCESS

IGI Global "This book consists of a series of high-level discussions on technical and managerial issues related to object-oriented development"--Provided by publisher.

MODEL-DRIVEN DOMAIN ANALYSIS AND SOFTWARE DEVELOPMENT: ARCHITECTURES AND FUNCTIONS

ARCHITECTURES AND FUNCTIONS

IGI Global "This book displays how to effectively map and respond to the real-world challenges and purposes which software must solve, covering domains such as mechatronic, embedded and high risk systems, where failure could cost human lives"--Provided by publisher.

THE BRITISH NATIONAL BIBLIOGRAPHY

CONCURRENCY, GRAPHS AND MODELS

ESSAYS DEDICATED TO UGO MONTANARI ON THE OCCASION OF HIS 65TH BIRTHDAY

Springer Science & Business Media This Festschrift volume, published in honor of Ugo Montanari on the occasion of his 65th birthday, contains 43 papers, written by friends and colleagues, all leading scientists in their own right, who congregated at a celebratory symposium held on June 12, 2008, in Pisa. The volume consists of seven sections, six of which are dedicated to the main research areas to which Ugo Montanari has contributed: Graph Transformation; Constraint and Logic Programming; Software Engineering; Concurrency; Models of Computation; and Software Verification. Each of these six sections starts with an introductory paper giving an account of Ugo Montanari's contribution to the area and describing the papers in the section. The final section consists of a number of papers giving a laudation of Ugo Montanari's numerous achievements.

BEHAVIORAL MODELING FOR EMBEDDED SYSTEMS AND TECHNOLOGIES: APPLICATIONS FOR DESIGN AND IMPLEMENTATION

APPLICATIONS FOR DESIGN AND IMPLEMENTATION

IGI Global "This book provides innovative behavior models currently used for developing embedded systems, accentuating on graphical and visual notations"--Provided by publisher.

METHODS, MODELS AND TOOLS FOR FAULT TOLERANCE

Springer The growing complexity of modern software systems increases the difficulty of ensuring the overall dependability of software-intensive systems. Complexity of environments, in which systems operate, high dependability requirements that systems have to meet, as well as the complexity of infrastructures on which they rely make system design a true engineering challenge. Mastering system complexity requires design techniques that support clear thinking and rigorous validation and verification. Formal design methods help to achieve this. Coping with complexity also requires architectures that are tolerant of faults and of unpredictable changes in environment.

This issue can be addressed by fault-tolerant design techniques. Therefore, there is a clear need of methods enabling rigorous modelling and development of complex fault-tolerant systems. This book addresses such acute issues in developing fault-tolerant systems as: - Verification and refinement of fault-tolerant systems - Integrated approaches to developing fault-tolerant systems - Formal foundations for error detection, error recovery, exception and fault handling - Abstractions, styles and patterns for rigorous development of fault tolerance - Fault-tolerant software architectures - Development and application of tools supporting rigorous design of dependable systems - Integrated platforms for developing dependable systems - Rigorous approaches to specification and design of fault tolerance in novel computing systems The editors of this book were involved in the EU (FP-6) project RODIN (Rigorous Open Development Environment for Complex Systems), which brought together researchers from the fault tolerance and formal methods communities. In 2007 RODIN organized the MeMoT workshop held in conjunction with the Integrated Formal Methods 2007 Conference at Oxford University.

DATABASE DESIGN FOR SMARTIES

USING UML FOR DATA MODELING

Morgan Kaufmann Craft the Right Design Using UML Whether building a relational, object-relational, or object-oriented database, database developers are increasingly relying on an object-oriented design approach as the best way to meet user needs and performance criteria. This book teaches you how to use the Unified Modeling Language—the official standard of the Object Management Group—to develop and implement the best possible design for your database. Inside, the author leads you step by step through the design process, from requirements analysis to schema generation. You'll learn to express stakeholder needs in UML use cases and actor diagrams, to translate UML entities into database components, and to transform the resulting design into relational, object-relational, and object-oriented schemas for all major DBMS products. Features Teaches you everything you need to know to design, build, and test databases using an OO model. Shows you how to use UML, the accepted standard for database design according to OO principles. Explains how to transform your design into a conceptual schema for relational, object-relational, and object-oriented DBMSs. Offers practical examples of design for Oracle, SQL Server, Sybase, Informix, Object Design, POET, and other database management systems. Focuses heavily on re-using design patterns for maximum productivity and teaches you how to certify completed designs for re-use.

REAL-TIME SIMULATION TECHNOLOGIES: PRINCIPLES, METHODOLOGIES, AND APPLICATIONS

CRC Press Real-Time Simulation Technologies: Principles, Methodologies, and Applications is an edited compilation of work that explores fundamental concepts and basic techniques of real-time simulation for complex and diverse systems across a broad spectrum. Useful for both new entrants and experienced experts in the field, this book integrates coverage of detailed theory, acclaimed methodological approaches, entrenched technologies, and high-value applications of real-time simulation—all from the unique perspectives of renowned international contributors. Because it offers an accurate and otherwise unattainable assessment of how a system will behave over a particular time frame, real-time simulation is increasingly critical to the optimization of dynamic processes and adaptive systems in a variety of enterprises. These range in scope from the maintenance of the national power grid, to space exploration, to the development of virtual reality programs and cyber-physical systems. This book outlines how, for these and other undertakings, engineers must assimilate real-time data with computational tools for rapid decision making under uncertainty. Clarifying the central concepts behind real-time simulation tools and techniques, this one-of-a-kind resource: Discusses the state of the art, important challenges, and high-impact developments in simulation technologies Provides a basis for the study of real-time simulation as a fundamental and foundational technology Helps readers develop and refine principles that are applicable across a wide variety of application domains As science moves toward more advanced technologies, unconventional design approaches, and unproven regions of the design space, simulation tools are increasingly critical to successful design and operation of technical systems in a growing number of application domains. This must-have resource presents detailed coverage of real-time simulation for system design, parallel and distributed simulations, industry tools, and a large set of applications.