Uml Classroom Undergraduate Topics In Computer Science

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. 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. Neo4j is a graph database that allows you to model your data as a graph and find solutions to complex real-world problems that are difficult to solve using any other type of database. This book is designed to help you understand the intricacies of modeling a graph for any domain. The book starts with an example of a graph problem and then introduces you to modeling non-graph problems using Neo4j. Concepts such as the evolution of your database, chains, access control, and recommendations are addressed, along with examples and are modeled in a graph. Throughout the book, you will discover design choices and trade-offs, and understand how and when to use them. By the end of the book, you will be able to effectively use Neo4j to model your database for efficiency and flexibility. 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 Page 3/24

across a variety of application domains. The in-depth coverage and exampledriven 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 guickly 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 title contains standards and guidelines for creating UML diagrams that are concise and easy to understand.

"Building on their classroom teaching experiences over the years, Dr Jeya Mala and Dr Geetha have deployed an innovative approach and student-friendly style to explain Object Oriented Analysis and Design concepts, thereby ensuring that the interest of the readers is maintained. The textbook covers case studies, activity models, and diagrams using the latest version of UML 2. The book

contains adequate span to cover the curriculum requisites and rich pedagogical features to cater to the needs of undergraduate students."--Back cover. 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.

This book includes a set of rigorously reviewed world-class manuscripts addressing and detailing state-of-the-art research projects in the areas of Engineering Education, Instructional Technology, Assessment, and E-learning. The book presents selected papers form the conference proceedings of the International Conference on Engineering Education,

Instructional Technology, Assessment, and E-learning (EIAE 2006). All aspects of the conference were managed on-line.

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. This fifth edition continues to build upon previous issues with it 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.

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

This textbook mainly addresses beginners and readers with a basic knowledge of objectoriented 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.

Summary Gradle in Action is a comprehensive guide to end-to-end project automation with Gradle. Starting with the basics, this practical, easy-to-read book discusses how to build a full-fledged, real-world project. Along the way, it touches on advanced topics like testing, continuous integration, and monitoring code quality. You'll also explore tasks like setting up your target environment and deploying your software. About the Technology Gradle is a general-purpose build automation tool. It extends the usage patterns established by its forerunners, Ant and Maven, and allows builds that are expressive, maintainable, and easy to understand. Using a flexible Groovy-based DSL, Gradle provides declarative and extendable language elements that let you model your project's needs the way you want. About the Book Gradle in Action is a comprehensive guide to end-to-end project automation with Gradle. Starting with the basics, this practical, easy-to-read book discusses how to establish an effective build process for a full-fledged, real-world project. Along the way, it covers advanced topics like testing, continuous integration, and monitoring code quality. You'll also explore tasks

like setting up your target environment and deploying your software. The book assumes a basic background in Java, but no knowledge of Groovy. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. Whats Inside A comprehensive guide to Gradle Practical, real-world examples Transitioning from Ant and Maven In-depth plugin development Continuous delivery with Gradle About the Author Benjamin Muschko is a member of the Gradleware engineering team and the author of several popular Gradle plugins. Table of Contents PART 1 INTRODUCING GRADLE Introduction to project automation Next-generation builds with Gradle Building a Gradle project by example PART 2 MASTERING THE FUNDAMENTALS Build script essentials Dependency management Multiproject builds Testing with Gradle Extending Gradle Integration and migration PART 3 FROM BUILD TO DEPLOYMENT IDE support and tooling Building polyglot projects Code quality management and monitoring Continuous integration Artifact assembly and publishing Infrastructure provisioning and deployment Class-tested and coherent, this textbook teaches classical and web information retrieval, including web search and the related areas of text classification and text clustering from basic concepts. It gives an up-to-date treatment of all aspects of the design and implementation of systems for gathering, indexing, and searching documents; methods for evaluating systems; and an introduction to the use of machine learning methods on text collections. All the important ideas are explained using examples and figures, making it perfect for introductory courses in information retrieval for advanced undergraduates and graduate students in computer science. Based on

feedback from extensive classroom experience, the book has been carefully structured in order to make teaching more natural and effective. Slides and additional exercises (with solutions for lecturers) are also available through the book's supporting website to help course instructors prepare their lectures.

Project-Based Software Engineering is the first book to provide hands-on process and practice in software engineering essentials for the beginner. The book presents steps through the software development life cycle and two running case studies that develop as the steps are presented. Running parallel to the process presentation and case studies, the book supports a semester-long software development project. This book focuses on object-oriented software development, and supports the conceptualization, analysis, design and implementation of an object-oriented project. It is mostly languageindependent, with necessary code examples in Java. A subset of UML is used, with the notation explained as needed to support the readers' work. Two running case studies a video game and a library check out system show the development of a software project. Both have sample deliverables and thus provide the reader with examples of the type of work readers are to create. This book is appropriate for readers looking to gain experience in project analysis, design implementation, and testing. When I started to write this book, I was 19 years old. I was finishing my sophomore year at UMass Lowell. Even though I had not reached my 20s yet, I had experienced a

lot in my college career. I had just finished a Fall Semester of 24 credits (8 classes)

while on the Division 1 Track & Field team. I was finishing up the Spring Semester of 27 credits (9 classes) while working full-time at an internship. Flash forward about a year, I am 20 years old and finished my college classes, debt-free, and have been working a full-time upper level role for the past 9 months at one of the top companies in my field. Why am I telling you this? I tell my story to you because I was not the top of my class in high school. I didn't get a perfect score of the SAT. I failed 5 out of the 7 AP tests I took in high school. I'm here to tell you that as soon as you walk off that stage at high school graduation, you are in control. No matter what cards you have been dealt, you have the chance to create your own future. As you read through this book you will get a look into the experiences I had during my college years and how you can change the course of your life using the tips written for you. I wrote this book for you. It does not matter what has happened in the past, your story begins here and now. I wrote this book so that you can take what I have learned and use it to build the life that you want. There are fundamental tasks common to every society: children have to be raised, homes need to be cleaned, meals need to be prepared, and people who are elderly, ill, or disabled need care. Day in, day out, these responsibilities can involve both monotonous drudgery and untold rewards for those performing them, whether they are family members, friends, or paid workers. These are jobs that cannot be outsourced, because they involve the most intimate spaces of our everyday lives--our homes, our bodies, and our families. Mignon Duffy uses a historical and comparative approach to

examine and critique the entire twentieth-century history of paid care work--including health care, education and child care, and social services--drawing on an in-depth analysis of U.S. Census data as well as a range of occupational histories. Making Care Count focuses on change and continuity in the social organization along with cultural construction of the labor of care and its relationship to gender, racial-ethnic, and class inequalities. Debunking popular understandings of how we came to be in a "care crisis," this book stands apart as an historical quantitative study in a literature crowded with contemporary, qualitative studies, proposing well-developed policy approaches that grow out of the theoretical and empirical arguments.

"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 guickly 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.

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.

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 guickly 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

This engaging text presents the fundamental mathematics and modelling techniques for computing systems in a novel and light-hearted way, which can be easily followed by students at the very beginning of their university education. Key concepts are taught through a large collection of challenging yet fun mathematical games and logical puzzles that require no prior knowledge about computers. The text begins with intuition and examples as a basis from which precise concepts are then developed; demonstrating how, by working within the confines of a precise structured method, the occurrence of errors in the system can be drastically reduced. Features: demonstrates how game theory provides a paradigm for an intuitive understanding of the nature of computation; contains more than 400 exercises throughout the text, with detailed solutions to half of

these presented at the end of the book, together with numerous theorems, definitions and examples; describes a modelling approach based on state transition systems.

This book constitutes the refereed proceedings of the 39th International Conference on Conceptual Modeling, ER 2020, which was supposed to be held in Vienna, Austria, in November 2020, but the conference was held virtually due to the COVID-19 pandemic. The 28 full and 16 short papers were carefully reviewed and selected from 143 submissions. This events covers a wide range of topics, and the papers are organized in the following sessions: foundations of conceptual modeling; process mining and conceptual modeling; conceptual modeling of business rules and processes; modeling chatbots, narratives and natural language; ontology and conceptual modeling; applications of conceptual modeling; schema design, evolution, NoSQL; empirical studies of conceptual modeling; networks, graphs and conceptual modeling; and conceptual modeling of complex and data-rich systems.

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 Page 17/24

dog owner. Includes dozens of full color illustrations.

UML @ ClassroomAn Introduction to Object-Oriented ModelingSpringer Educational pedagogy is a diverse field of study, one that all educators should be aware of and fluent in so that their classrooms may succeed. Curriculum Design and Classroom Management: Concepts, Methodologies, Tools, and Applications presents cutting-edge research on the development and implementation of various tools used to maintain the learning environment and present information to pupils as effectively as possible. In addition to educators and students of education, this multi-volume reference is intended for educational theorists, administrators, and industry professionals at all levels.

Object-Oriented Software Engineering: An Agile Unified Methodology by David Kung presents a step-by-step methodology that integrates modeling and design, UML, patterns, test-driven development, quality assurance, configuration management, and agile principles throughout the life cycle. The overall approach is casual and easy to follow, with many practical examples that show the theory at work. The author uses his experiences as well as real-world stories to help the reader understand software design principles, patterns, and other software engineering concepts. The book also provides stimulating exercises that go far beyond the type of question that can be answered by simply copying portions of Page 18/24

the text.

Summary Groovy in Action, Second Edition is a thoroughly revised, comprehensive guide to Groovy programming. It introduces Java developers to the dynamic features that Groovy provides, and shows how to apply Groovy to a range of tasks including building new apps, integration with existing code, and DSL development. Covers Groovy 2.4. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology In the last ten years, Groovy has become an integral part of a Java developer's toolbox. Its comfortable, common-sense design, seamless integration with Java, and rich ecosystem that includes the Grails web framework, the Gradle build system, and Spock testing platform have created a large Groovy community About the Book Groovy in Action, Second Edition is the undisputed definitive reference on the Groovy language. Written by core members of the Groovy language team, this book presents Groovy like no other can-from the inside out. With relevant examples, careful explanations of Groovy's key concepts and features, and insightful coverage of how to use Groovy inproduction tasks, including building new applications, integration with existing code, and DSL development, this is the only book you'll need. Updated for Groovy 2.4. Some experience with Java or another programming language is

helpful. No Groovy experience is assumed. What's Inside Comprehensive coverage of Groovy 2.4 including language features, libraries, and AST transformations Dynamic, static, and extensible typing Concurrency: actors, data parallelism, and dataflow Applying Groovy: Java integration, XML, SQL, testing, and domain-specific language support Hundreds of reusable examples About the Authors Authors Dierk König, Paul King, Guillaume Laforge, Hamlet D'Arcy, Cédric Champeau, Erik Pragt, and Jon Skeet are intimately involved in the creation and ongoing development of the Groovy language and its ecosystem. Table of Contents PART 1 THE GROOVY LANGUAGE Your way to Groovy Overture: Groovy basics Simple Groovy datatypes Collective Groovy datatypes Working with closures Groovy control structures Object orientation, Groovy style Dynamic programming with Groovy Compile-time metaprogramming and AST transformations Groovy as a static language PART 2 AROUND THE GROOVY LIBRARY Working with builders Working with the GDK Database programming with Groovy Working with XML and JSON Interacting with Web Services Integrating Groovy PART 3 APPLIED GROOVY Unit testing with Groovy Concurrent Groovy with GPars Domain-specific languages The Groovy ecosystem

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, guick 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.

Uses friendly, easy-to-understand For Dummies style to helpreaders learn to Page 21/24

model systems with the latest version of UML, themodeling language used by companies throughout the world to developblue prints for complex computer systems Guides programmers, architects, and business analysts throughapplying 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 objectmodeling, case modeling, advanced dynamic and functional modeling, and component and deployment modeling The University of Massachusetts Lowell owes its origins to two institutions founded in the 1890s. In 1894, the state authorized the founding of the Lowell Normal School, an institution that trained teachers for the state's public school system. In 1895, the state also authorized the founding of Lowell Textile School to encourage research in new technologies related to textile manufacture. Over the decades, the two schools on opposite sides of the Merrimack River grew. Lowell Normal became Lowell Teacher's College in 1932 and then Lowell State College in 1960, and Lowell Textile became Lowell Technological Institute in 1953. In 1975, the state merged the two institutions to form the University of Lowell, which, in 1991, became part of the UMass system. University of Massachusetts Lowell: 125 Years draws from a rich array of historical images to

honor the school's past and present and preserve the memory of students, faculty, staff, buildings, and events.

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 elearning material.

This book presents current knowledge about teaching culturally diverse populations, traditionally underserved in the nation's public schools. It approaches the challenge of improving public school education for these students in a variety of ways including relating of cultural and experiential knowledge to classroom instruction, examining the behaviors of teachers who are effective with culturally diverse populations, analyzing effective school models, reviewing models of effective instruction, and exploring ethnic identity as a variable in the formula for school success. The discussions reveal significant insights about the implications and shortcomings of existing knowledge and its application, and offer directions for future research. Copyright: 8b05ea6b88698f9c9b96af50475126a2