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Programming in Two Semesters - Quentin Charatan
2022-10-01

This highly accessible textbook teaches programming from first principles. In common with many programming courses, it uses Python as the introductory programming language before going on to use Java as the vehicle for more advanced programming concepts. The first part, which teaches Python, covers fundamental programming concepts, such as data types and control structures and functions. It introduces more complex data types such as lists and dictionaries and also deals with file handling. It introduces object-oriented concepts and ends with a case study bringing together all the topics of the first semester. The second part uses Java to teach advanced concepts and centres around object-oriented programming, teaching key object-oriented concepts such as inheritance and polymorphism. The semester again ends with an advanced case study bringing together all the topics of the second semester. Topics and features: Assumes no prior knowledge, and makes the transition from Python to Java a smooth process Features numerous exercises and also an illustrative case study for each language Examines procedural and object-oriented methodologies, as well as design principles Covers such advanced topics as interfaces and lambda expressions, exceptions and Collections Includes a chapter on graphics programming in Python using Tkinter Introduces the latest Java technology for graphical interfaces, JavaFX Explains design concepts using UML notation Offering a gentle introduction to the field and assuming no prerequisite background, *Programming in Two Semesters* is the ideal companion to undergraduate modules in software development or programming. In addition, it will serve as a strong primer for professionals looking to strengthen their knowledge of programming with these languages.

UML 2.0 in Action - Patrick Grässle 2005-09-06

A detailed and practical book and eBook walk-through showing how to apply UML to real world development projects
[Future-Proof Software-Systems](#) - Frank J. Furrer 2019-09-25
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.

An Introduction to Self-adaptive Systems - Danny Weyns
2020-10-07

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.

UML Distilled - Martin Fowler 2018-08-30

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.

Design Patterns Explained - Alan Shalloway 2004-10-12

"One of the great things about the book is the way the authors explain concepts very simply using analogies rather than programming examples--this has been very inspiring for a product I'm working on: an audio-only introduction to OOP and software development." --Bruce Eckel "...I would expect that readers with a basic understanding of object-oriented programming and design would find this book useful, before approaching design patterns completely. Design Patterns Explained complements the existing design patterns texts and may perform a very useful role, fitting between introductory texts such as UML Distilled and the more advanced patterns books." --James Noble Leverage the quality and productivity benefits of patterns--without the complexity! Design Patterns Explained, Second Edition is the field's simplest, clearest, most practical introduction to patterns. Using dozens of updated Java examples, it shows programmers and architects exactly how to use patterns to design, develop, and deliver software far more effectively. You'll start with a complete overview of the fundamental principles of patterns, and the role of object-oriented analysis and design in contemporary software development. Then, using easy-to-understand sample code, Alan Shalloway and James Trott illuminate dozens of today's most useful patterns: their underlying concepts, advantages, tradeoffs, implementation techniques, and pitfalls to avoid. Many patterns are accompanied by UML diagrams. Building on their best-selling First Edition, Shalloway and Trott have thoroughly updated this book to reflect new software design trends, patterns, and implementation techniques. Reflecting extensive reader feedback, they have deepened and clarified coverage throughout, and reorganized content for even greater ease of understanding. New and revamped coverage in this edition includes Better ways to start "thinking in patterns" How design patterns can facilitate agile development using eXtreme Programming and other methods How to use commonality and variability analysis to design application architectures The key role of testing into a patterns-driven development process How to use factories to instantiate and manage objects more effectively The Object-Pool Pattern--a new pattern not identified by the "Gang of Four" New study/practice questions at the end of every chapter Gentle yet thorough, this book assumes no patterns experience whatsoever. It's the ideal "first book" on patterns, and a perfect complement to Gamma's classic Design Patterns. If you're a programmer or architect who wants the clearest possible understanding of design patterns--or if you've struggled to make them work for you--read this book.

Modeling with UML - Bernhard Rumpe 2016-09-16

This book presents a variant of UML that is especially suitable for agile development of high-quality software. It adjusts the language UML profile, called UML/P, for optimal assistance for the design, implementation, and agile evolution to facilitate its use especially in agile, yet model based development methods for data intensive or control driven systems. After a general introduction to UML and the choices made in the development of UML/P in Chapter 1, Chapter 2 includes a definition of the language elements of class diagrams and their forms of use as views and representations. Next, Chapter 3 introduces the design and semantic facets of the Object Constraint Language (OCL), which is conceptually improved and syntactically adjusted to Java for better comfort. Subsequently, Chapter 4 introduces object diagrams as an independent, exemplary notation in UML/P, and Chapter 5 offers a detailed introduction to UML/P Statecharts. Lastly, Chapter 6 presents a simplified form of sequence diagrams for exemplary descriptions of object interactions. For completeness, appendixes A-C describe the full syntax of UML/P, and appendix D explains a sample application from the E-commerce domain, which is used in all chapters. This book is ideal for introductory courses for students and practitioners alike.

Ebook: Object-Oriented Systems Analysis and Design Using UML - BENNETT 2010-04-16

Ebook: Object-Oriented Systems Analysis and Design Using UML Requirements in Engineering Projects - João M. Fernandes 2015-07-18

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.

UML for Java Programmers - Robert C. Martin 2003

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

Object-oriented Technology - Curtis H. K. Tsang 2005

This book is written for students and developers who wish to master the essential skills and techniques in applying the UML for software development. The reader will learn object-oriented analysis, design and implementation using appropriate UML models, process, techniques and tool. Accompanying the book is the Community Edition of Visual Paradigm for UML (VP-UML), an award-winning CASE tool, which allows the reader to put the theories learned into practice immediately. The authors propose a novel framework for modeling and analysis called the ViewAlignment Techniques (VAT) that helps software developers create development methods. The Activity Analysis Approach (A3), which is particularly suited for the development of interaction-intensive systems, is described. These concepts have been well proven, as they were followed closely in the development of the VP-UML CASE tool. Three chapters in this book describe structural, use case and dynamic modeling and analysis techniques, together with practical tricks and tips that have been gained by the authors from many years of experience. Each of these three chapters includes a mini-case study which illustrates the unique "from diagram to code" concept in software development. In the final chapter, a major case study is included to help the reader reinforce the theories learned in previous chapters using VP-UML. The key areas in object-oriented technology covered in the book include: Requirements modeling using cases: Identifying, capturing and elaborating requirements. Domain analysis for object identification: Building structural models for objects and their attributes and relationships. Dynamic analysis and design: Building dynamic models, refining structural models and making design decisions. Implementation: Translating UML models into codes and implementations. Method creation and the framework of ViewAlignment Techniques: Choosing the right UML models and customizing the analysis and design process. A case study: Showing how the Activity Analysis Approach is put into practice, using VP-

UML. Additional material can be found at <http://www.mcgraw-hill.com.sg/olc/tsang>. Instructors will benefit from useful tools such as PowerPoint slides (password protected) and answers to exercises (password protected), while students can obtain source code and additional exercises and test questions. Visual Paradigm for UML, the CASE tool used extensively in this book, was honored in the 15th Annual Software Development Magazine Jolt Productivity Award in the Design and Analysis Tools category in March 2004. It has also recently won two more accolades: Oracle JDeveloper Extensions Developer of the Year 2004 and Hong Kong Computer Society 6th IT Excellence Silver Award 2004. The Community Edition of this CASE tool is included in this book to enable the reader to use its powerful and easy-to-use features for system modeling, analysis and implementation.

Object-oriented Database Design Clearly Explained - Jan L. Harrington 2000

This book will help you make sense of the conflicting theories and vendor claims about object-oriented database systems."--BOOK JACKET.

Design Patterns Explained - Alan Shalloway 2002

This book introduces the programmer to patterns: how to understand them, how to use them, and then how to implement them into their programs. This book focuses on teaching design patterns instead of giving more specialized patterns to the relatively few.

Object-oriented Software Engineering - Timothy Christian Lethbridge 2004

This book covers the essential knowledge and skills needed by a student who is specializing in software engineering. Readers will learn principles of object orientation, software development, software modeling, software design, requirements analysis, and testing. The use of the Unified Modelling Language to develop software is taught in depth. Many concepts are illustrated using complete examples, with code written in Java.

Developments and Advances in Defense and Security - Álvaro Rocha 2023-04-03

This book gathers the proceedings of the Multidisciplinary International Conference of Research Applied to Defense and Security (MICRADS 2022), held at Escuela Naval de Suboficiales ARC "Barranquilla," in Barranquilla, Colombia, during July 11-13, 2022. It covers a broad range of topics in systems, communication, and defense; strategy and political-administrative vision in defense; and engineering and technologies applied to defense. Given its scope, it offers a valuable resource for practitioners, researchers, and students alike.

Agile Modeling with UML - Bernhard Rumpe 2017-04-26

This book focuses on the methodological treatment of UML/P and addresses three core topics of model-based software development: code generation, the systematic testing of programs using a model-based definition of test cases, and the evolutionary refactoring and transformation of models. For each of these topics, it first details the foundational concepts and techniques, and then presents their application with UML/P. This separation between basic principles and applications makes the content more accessible and allows the reader to transfer this knowledge directly to other model-based approaches and languages. After an introduction to the book and its primary goals in Chapter 1, Chapter 2 outlines an agile UML-based approach using UML/P as the primary development language for creating executable models, generating code from the models, designing test cases, and planning iterative evolution through refactoring. In the interest of completeness, Chapter 3 provides a brief summary of UML/P, which is used throughout the book. Next, Chapters 4 and 5 discuss core techniques for code generation, addressing the architecture of a code generator and methods for controlling it, as well as the suitability of UML/P notations for test or product code. Chapters 6 and 7 then discuss general concepts for testing software as well as the special features which arise due to the use of UML/P. Chapter 8 details test patterns to show how to use UML/P diagrams to define test cases and emphasizes in particular the use of functional tests for distributed and concurrent software systems. In closing, Chapters 9 and 10 examine techniques for transforming models and code and thus provide a solid foundation for refactoring as a type of transformation that preserves

semantics. Overall, this book will be of great benefit for practical software development, for academic training in the field of Software Engineering, and for research in the area of model-based software development. Practitioners will learn how to use modern model-based techniques to improve the production of code and thus significantly increase quality. Students will find both important scientific basics as well as direct applications of the techniques presented. And last but not least, the book will offer scientists a comprehensive overview of the current state of development in the three core topics it covers.

Object-Oriented Analysis and Design - Mike O'Docherty 2005-05-20

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

Learning UML 2.0 - Russ Miles 2006-04-25

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.

Proceedings of Fifth International Congress on Information and Communication Technology - Xin-She Yang 2020-10-21

This book gathers selected high-quality research papers presented at the Fifth International Congress on Information and Communication Technology, held at Brunel University, London, on February 20-21, 2020. It discusses emerging topics pertaining to information and communication technology (ICT) for managerial applications, e-governance, e-agriculture, e-education and computing technologies, the Internet of Things (IoT) and e-mining. Written by respected experts and researchers working on ICT, the book offers a valuable asset for young researchers involved in advanced studies.

Object-Oriented Design Using Java - Dale John Skrien 2008-03-01

The primary strength of *Object-Oriented Design Using Java* is that it has one of the best presentations of problem solving using patterns available. It has received rave reviews from instructors and has been class tested at a number of schools where the response from both professors and students has been extremely positive. This book is intended for the object-oriented programming design course where UML is used extensively for design and notation. It has been especially designed to be accessible to students and is full of real-world examples, case studies, and other aids to assist student understanding.

Object Oriented Simulation - José M. Garrido 2009-05-28

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.

SysML Distilled - Lenny Delligatti 2014

SysML Distilled is a go-to reference for everyone who wants to start creating accurate and useful system models with SysML. Drawing on his pioneering experience creating models for Lockheed Martin and NASA, Lenny Delligatti illuminates SysML's core components, and shows how to use them even under tight deadlines and other constraints. The reader needn't know all of SysML to create effective models: *SysML Distilled* quickly teaches what does need to be known, and helps deepen the reader's knowledge incrementally as the need arises.

Quantum Software Engineering - Manuel A. Serrano
2022-11-13

This book presents a set of software engineering techniques and tools to improve the productivity and assure the quality in quantum software development. Through the collaboration of the software engineering community with the quantum computing community new architectural paradigms for quantum-enabled computing systems will be anticipated and developed. The book starts with a chapter that introduces the main concepts and general foundations related to quantum computing. This is followed by a number of chapters dealing with the quantum software engineering methods and techniques. Topics like the Talavera Manifesto for quantum software engineering, frameworks for hybrid systems, formal methods for quantum software engineering, quantum software modelling languages, and reengineering for quantum software are covered in this part. A second set of chapters then deals with quantum software environments and tools, detailing platforms like QuantumPath®, Classiq as well as quantum software frameworks for deep learning. Overall, the book aims at academic researchers and practitioners involved in the creation of quantum information systems and software platforms. It is assumed that readers have a background in traditional software engineering and information systems.

Systems Analysis and Design - Alan Dennis 2020-11-26

Systems Analysis and Design: An Object-Oriented Approach with UML, Sixth Edition helps students develop the core skills required to plan, design, analyze, and implement information systems. Offering a practical hands-on approach to the subject, this textbook is designed to keep students focused on doing SAD, rather than simply reading about it. Each chapter describes a specific part of the SAD process, providing clear instructions, a detailed example, and practice exercises. Students are guided through the topics in the same order as professional analysts working on a typical real-world project. Now in its sixth edition, this edition has been carefully updated to reflect current methods and practices in SAD and prepare students for their future roles as systems analysts. Every essential area of systems analysis and design is clearly and thoroughly covered, from project management, to analysis and design modeling, to construction, installation, and operations. The textbook includes access to a range of teaching and learning resources, and a running case study of a fictitious healthcare company that shows students how SAD concepts are applied in real-life scenarios.

Java and Eclipse for Computer Science - Sean D. Liming
2018-07

Almost every job today has some interaction with a computer or a computing device. Computers come in all shapes and sizes such as smartphones, ATM machines, thermostats, test equipment, robotics, point-of-sale systems, cloud servers, projection systems, and, oh yes, personal computers. All of them need to be designed, built, and programmed. Having a good understanding of computer programming and Computer Science can provide a good foundation for one's career. The Java programming language is one of the most popular programming languages used today. By learning Java, you will have a good understanding of structured programming, and Java is a good vehicle to learn the basics of Computer Science. Employers are always looking for new-hires to have practical experience. The best way to stand out during the interview process is to demonstrate that you have a familiarity with the tools used by professional programmers. There are many Java development tools available, but when it comes to Java programming, Eclipse is the tool frequently used in the industry. Eclipse is a popular Integrated Development Environment (IDE) that supports Java, C/C++, and web development. This textbook combines Java programming, Computer Science, and a popular development tool that not only prepares you for the Computer Science curriculum but also beyond the classroom into your professional career. The 14 chapters start with the basics of how Algebra flows into computer programming, moves on to logical program flow, and then to Object Oriented Programming. After these fundamentals come the advanced topics of recursion, search, sort, and Big-O notation. Going beyond the basic curriculum material, the later chapters cover graphical programming with JavaFX, File I/O, an introduction to data structures, and finishes with JavaFX 2-D Game development. There

are many computer activities to provide a hands-on experience and keep you involved during the reading of this book.

Data-Driven Process Discovery and Analysis - Paolo Ceravolo
2018-01-25

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.

Java in Two Semesters - Quentin Charatan 2019-01-08

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.

UML 2 and the Unified Process - Jim Arlow 2005-06-27

"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

Labelling-Based Information Management Systems in Disasters and Emergencies - Mehmet Sinan Başar 2022-03-11

This volume provides a theoretical background for studies on the labelling of disaster victims in disasters and emergencies and to protect the information revealed during the entire response process. It will be of interest to researchers working on disaster management and emergency management, especially in data and information management. In addition to storing and transmitting information to be obtained in all processes related to disaster victims, information processing, and artificial intelligence techniques that will assist in obtaining more information about disaster victims are also discussed here.

Object-Oriented Analysis and Design - Sarnath Ramnath 2010-12-06

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.

The Elements of UML(TM) 2.0 Style - Scott W. Ambler 2005-05-09
Concise and easy-to-understand guidelines and standards for creating UML 2.0 diagrams.

Object-Oriented Software Engineering Using UML, Patterns, and Java - Bernd Bruegge 2013-08-29

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).

Object - Oriented Modeling And Design With Uml, 2/E - Blaha 2007-09

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.

Guide to Efficient Software Design - David P. Voorhees 2020-01-01

This classroom-tested textbook presents an active-learning approach to the foundational concepts of software design. These concepts are then applied to a case study, and reinforced through practice exercises, with the option to follow either a structured design or object-oriented design paradigm. The text applies an incremental and iterative software development approach, emphasizing the use of design characteristics and modeling techniques as a way to represent higher levels of design abstraction, and promoting the model-view-controller (MVC) architecture. Topics and features: provides a case study to illustrate the various concepts discussed throughout the book, offering an in-depth look at the pros and cons of different software

designs; includes discussion questions and hands-on exercises that extend the case study and apply the concepts to other problem domains; presents a review of program design fundamentals to reinforce understanding of the basic concepts; focuses on a bottom-up approach to describing software design concepts; introduces the characteristics of a good software design, emphasizing the model-view-controller as an underlying architectural principle; describes software design from both object-oriented and structured perspectives; examines additional topics on human-computer interaction design, quality assurance, secure design, design patterns, and persistent data storage design; discusses design concepts that may be applied to many types of software development projects; suggests a template for a software design document, and offers ideas for further learning. Students of computer science and software engineering will find this textbook to be indispensable for advanced undergraduate courses on programming and software design. Prior background knowledge and experience of programming is required, but familiarity in software design is not assumed.

Applying UML and Patterns Training Course - Craig Larman 2002-07-01

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.

UML @ Classroom - Martina Seidl 2015-02-21

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.

Systems Analysis and Design in a Changing World - John W. Satzinger 2015-02-01

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.

Object Models - Peter Coad 1997

This is a new edition of this pack which covers the three leading object modelling notations, Coad, OMT and the new Unified (Booch-Rumbaugh) methodology. It presents 177 state-of-the-art strategies and 31 patterns for object model development. The new

edition includes 29 new strategies which include: using feature milestones to deliver results more quickly; extracting useful content from data models; using patterns to discover new features, separating definition from usage; when to use, or not use, inheritance; how to decide whether you need an attribute or something more; and why you should nearly always ask for more than a data value.

Use Case Driven Object Modeling with UML Theory and Practice - Don Rosenberg 2008-06-28

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.

UML Weekend Crash Course - Tom Pender 2002-11-01

ABOUT THE TECHNOLOGY What it is: UML (Unified Modeling Language) is a graphical modeling language used to specify, visualize, construct, and document applications and software systems, which are implemented with components and object-oriented programming languages, such as Java, C++, and Visual Basic. UML incorporates the object-oriented community's consensus on core modeling concepts and provides a standard way for developers to communicate the details of system design and development. In addition to object-oriented modeling of applications, UML is also used for business-process modeling, data modeling, and XML modeling. Purpose of modeling: Models for

software systems are as important as having a blueprint for a large building, or an outline for a book. Good models enhance communication among project teams and assure architectural soundness. The more complex the software system, the more important it is to have models that accurately describe the system and can be understood by everyone. UML helps provide this via a standard for graphical diagrams. Just like an architect can understand the notations on any blueprint, UML enables software engineers and business managers to understand the design of any software system, even if the original designers have long left the company. Organization behind it: Object Management Group (OMG) (www.omg.org). (UML Resource Page at OMG Web site is www.omg.org/uml.) The OMG produces and maintains the UML standard, an internationally recognized standard. The OMG is an open membership, not-for-profit consortium that produces and maintains computer industry specifications for interoperable enterprise applications. Its membership roster (about 800) includes just about every large company in the computer industry and hundreds of smaller ones. Most of the companies that shape enterprise and Internet computing are represented on the OMG's Board of Directors. Companies that contributed to the UML Standard: Realizing that UML would be strategic to their business, the following companies contributed their ideas to the first UML standard: Digital Equipment Corp, HP, i-Logix, IntelliCorp, IBM, ICON Computing, MCI, Microsoft, Oracle, Rational Rose, TI, and Unisys. Companies that use UML: It is safe to say that all Fortune 1000 companies are currently using UML, or are moving toward UML to model and design their applications and systems. This includes companies from all vertical industries, from Coca Cola to Warner Brothers, from CVS Pharmacy to Lockheed Martin Aerospace. You name the company - if they have an IT department, they are using UML.