

Database Design Application Development And Administration 5th Edition

The need to handle increasingly larger data volumes is one factor driving the adoption of a new class of nonrelational “NoSQL” databases. Advocates of NoSQL databases claim they can be used to build systems that are more performant, scale better, and are easier to program. NoSQL Distilled is a concise but thorough introduction to this rapidly emerging technology. Pramod J. Sadalage and Martin Fowler explain how NoSQL databases work and the ways that they may be a superior alternative to a traditional RDBMS. The authors provide a fast-paced guide to the concepts you need to know in order to evaluate whether NoSQL databases are right for your needs and, if so, which technologies you should explore further. The first part of the book concentrates on core concepts, including schemaless data models, aggregates, new distribution models, the CAP theorem, and map-reduce. In the second part, the authors explore architectural and design issues associated with implementing NoSQL. They also present realistic use cases that demonstrate NoSQL databases at work and feature representative examples using Riak, MongoDB, Cassandra, and Neo4j. In addition, by drawing on Pramod Sadalage's pioneering work, NoSQL Distilled shows how to implement evolutionary design with schema migration: an essential technique for applying NoSQL databases. The book concludes by describing how NoSQL is ushering in a new age of Polyglot Persistence, where multiple data-storage worlds coexist, and architects can choose the technology best optimized for each type of data access.

The first and only database primer for today's global economy Today's businesses depend on their databases to provide information essential for their day-to-day operations and to help them take advantage of today's rapidly growing and maturing electronic commerce opportunities. The primary responsibility for the design and maintenance of these databases rests with a company's information technology department. Unlike other IT resources currently available that tend to focus on a particular product, Database Design and Development: An Essential Guide for IT Professionals was created to give today's IT directors and other IT staff a solid basic knowledge of database design and development to help them make educated decisions about the right database environment for their companies. Today's IT professionals must understand the fundamentals in order to determine their next steps for specializing in the vast field of database technology. Database Design and Development: An Essential Guide for IT Professionals answers such common questions as: What is the purpose of a database system? What are the components of a database system? What type of data does your company need to capture? How do you design a database for a particular goal? How do you capture information through data modeling? How do you determine which database will best meet your business objectives? What's involved in effective database management and maintenance? How are database systems used to interface with the Internet? With more than twenty-five years of experience teaching IT courses and designing databases for some of America's top institutions, the author has succeeded in creating an essential resource for today's IT managers as well as for students planning a career in information technology.

From ATMs to the personal finance, online shopping to networked information management, databases permeate every nook and cranny of our highly-connected, information-intensive world. Databases have become so integral to the business environment that, nowadays, it's next to impossible to stay competitive without the assistance of some sort of database technology—no matter what type or size of business you run. But developing your own database can be very tricky. In fact, whether you want to keep records for a small business or run a large e-commerce website, developing the right database system can be a major challenge. Which is where this friendly guide comes in. From data modeling methods and development tools to Internet accessibility and security, Database Development For Dummies shows you, step-by-step, everything you need to know about building a custom system from the ground up. You'll discover how to: Model data accurately Design a reliable functional database Deliver robust relational databases on time and on budget Build a user-friendly database application Put your database on the Web In plain English, author Allen Taylor acquaints you with the most popular data modeling methods, and he shows you how to systematically design and develop a system incorporating a database and one or more applications that operate on it. Important topics he explores include: Understanding database architecture and how it has evolved Recognizing how database technology affects everyday life Using a structured approach to database development Creating an appropriate data model Developing a reliable relational design Understanding the complexities you're likely to encounter in designing a database and how to simplify them Implementing your design using Microsoft Access 2000, SQL Server and other powerful database development tools Keeping your database secure Putting your database on the Internet Today's powerful, low-cost database development tools make it possible for virtually anybody to create their own database. Get Database Development For Dummies and discover what it takes to design, develop and implement a sophisticated database system tailored to you and your company's current and future data storage and management needs.

Is fast development the enemy of good development? Not necessarily. Agile development requires that databases are designed and built quickly enough to meet fast-based delivery schedules — but in a way that also delivers maximum business value and reuse. How can these requirements both be satisfied? This book, suitable for practitioners at all levels, will explain how to design and build enterprise-quality high-value databases within the constraints of an Agile project. Starting with an overview of the business case for good data management practices, the book defines the various stakeholder groups involved in the software development process, explains the economics of software development (including “time to market” vs. “time to money”), and describes an approach to Agile database development based on the five PRISM principles. This book explains how to work with application developers and other stakeholders, examines critical issues in Agile Development and Data Management, and describes how developers

and data professionals can work together to make Agile projects successful while delivering maximum value data to the enterprise. Building the Agile Database will serve as an excellent reference for application developers, data managers, DBAs, project managers, Scrum Masters and IT managers looking to get more value from their development efforts. Among the topics covered: 1. Why Agile is more than just the latest development fad 2. The critical distinction between the logical and physical views of data 3. The importance of data virtualization, and how to achieve it 4. How to eliminate the "object-relational impedance mismatch" 5. The difference between logical modeling and physical design 6. Why databases are more than "persistence engines" 7. When and how to do logical modeling and physical design 8. Use of the logical data model in model-driven development 9. Refactoring made easier 10. Developing an "Agile Attitude"

Software development and information systems design have a unique relationship, but are often discussed and studied independently. However, meticulous software development is vital for the success of an information system. Software Development Techniques for Constructive Information Systems Design focuses the aspects of information systems and software development as a merging process. This reference source pays special attention to the emerging research, trends, and experiences in this area which is bound to enhance the reader's understanding of the growing and ever-adapting field. Academics, researchers, students, and working professionals in this field will benefit from this publication's unique perspective.

The vast majority of software applications use relational databases that virtually every application developer must work with. This book introduces you to database design, whether you're a DBA or database developer. You'll discover what databases are, their goals, and why proper design is necessary to achieve those goals. Additionally, you'll master how to structure the database so it gives good performance while minimizing the chance for error. You will learn how to decide what should be in a database to meet the application's requirements.

Today's database professionals must understand how to apply database systems to business processes and how to develop database systems for both business intelligence and Web-based applications. Database Development and Management explains all aspects of database design, access, implementation, application development, and management, as well

Updates the comprehensive user's guide to IBM's popular relational database software for mainframe computers, to describe the latest version, 2.3. Explains all the key components of the DB2 environment including the IBM "solution frameworks" AD/cycle, and the information warehouse, in which DB2 plays a pivotal role. Annotation copyrighted by Book News, Inc., Portland, OR

As Web-based systems and e-commerce carry businesses into the 21st century, databases are becoming workhorses that shoulder each and every online transaction. For organizations to have effective 24/7 Web operations, they need powerhouse databases that deliver at peak performance-all the time. High Performance Web Databases: Design, Development, and

This block is concerned with the database lifecycle, which describes the stages a database goes through, from the time the need for a database is established until it is withdrawn from use. This block applies the practice developed in Block 3 to systematically develop, implement and maintain a database design that supports the information requirements of an enterprise. It presents a simple framework for database development and maintenance. This is a very practical block and will require you to write and execute SQL statements for which you will need access to a computer installed with the course software (order code M359/CDR01) and database cards Scenarios and Hospital conceptual data model (order code M359/DBCARDS)

The fifth edition of Modern Database Management has been updated to reflect the most current database content available. It provides sound, clear, and current coverage of the concepts, skills, and issues needed to cope with an expanding organisational resource. While sufficient technical detail is provided, the emphasis remains on management and implementation issues pertinent in a business information systems curriculum.

Architect scalable, reliable, and maintainable applications for enterprises with Python Key Features Explore various Python design patterns used for enterprise software development Apply best practices for testing and performance optimization to build stable applications Learn about different attacking strategies used on enterprise applications and how to avoid them Book Description Dynamically typed languages like Python are continuously improving. With the addition of exciting new features and a wide selection of modern libraries and frameworks, Python has emerged as an ideal language for developing enterprise applications. Hands-On Enterprise Application Development with Python will show you how to build effective applications that are stable, secure, and easily scalable. The book is a detailed guide to building an end-to-end enterprise-grade application in Python. You will learn how to effectively implement Python features and design patterns that will positively impact your application lifecycle. The book also covers advanced concurrency techniques that will help you build a RESTful application with an optimized frontend. Given that security and stability are the foundation for an enterprise application, you'll be trained on effective testing, performance analysis, and security practices, and understand how to embed them in your codebase during the initial phase. You'll also be guided in how to move on from a monolithic architecture to one that is service oriented, leveraging microservices and serverless deployment techniques. By the end of the book, you will have become proficient at building efficient enterprise applications in Python. What you will learn Understand the purpose of design patterns and their impact on application lifecycle Build applications that can handle large amounts of data-intensive operations Uncover advanced concurrency techniques and discover how to handle a large

number of requests in production Optimize frontends to improve the client-side experience of your application Effective testing and performance profiling techniques to detect issues in applications early in the development cycle Build applications with a focus on security Implement large applications as microservices to improve scalability Who this book is for If you're a developer who wants to build enterprise-grade applications, this book is for you. Basic to intermediate-level of programming experience with Python and database systems is required to understand the concepts covered in this book.

Mannino's "Database Design, Application Development, and Administration" provides the information you need to learn relational databases. The book teaches students how to apply relational databases in solving basic and advanced database problems and cases. The fundamental database technologies of each processing environment are presented; as well as relating these technologies to the advances of e-commerce and enterprise computing. This book provides the foundation for the advanced study of individual database management systems, electronic commerce applications, and enterprise computing.

The book describes the major components of Oracle such as SQL*Plus, PL/SQL, indexing, security and integrity, and distributed databases. Underlying principles are also described: there are chapters on the objectives of database systems and on the relational model. Its broad coverage also includes database design techniques such as normalisation and entity-relationship modelling. The Oracle application development tools: SQL*Forms version 3 and SQL*Reportwriter are covered, since these tools are still widely used in universities and in industry. In preparation for Oracle version 8, object oriented concepts and the object-relational model are described.

The rapidly increasing volume of information contained in relational databases places a strain on databases, performance, and maintainability: DBAs are under greater pressure than ever to optimize database structure for system performance and administration. Physical Database Design discusses the concept of how physical structures of databases affect performance, including specific examples, guidelines, and best and worst practices for a variety of DBMSs and configurations. Something as simple as improving the table index design has a profound impact on performance. Every form of relational database, such as Online Transaction Processing (OLTP), Enterprise Resource Management (ERP), Data Mining (DM), or Management Resource Planning (MRP), can be improved using the methods provided in the book. The first complete treatment on physical database design, written by the authors of the seminal, Database Modeling and Design: Logical Design, Fourth Edition Includes an introduction to the major concepts of physical database design as well as detailed examples, using methodologies and tools most popular for relational databases today: Oracle, DB2 (IBM), and SQL Server (Microsoft) Focuses on physical database design for exploiting B+tree indexing, clustered indexes, multidimensional clustering (MDC), range partitioning, shared nothing partitioning, shared disk data placement, materialized views, bitmap indexes, automated design tools, and more!

"This book takes the somewhat daunting process of database design and breaks it into completely manageable and understandable components. Mike's approach whilst simple is completely professional, and I can recommend this book to any novice database designer." --Sandra Barker, Lecturer, University of South Australia, Australia "Databases are a critical infrastructure technology for information systems and today's business. Mike Hernandez has written a literate explanation of database technology--a topic that is intricate and often obscure. If you design databases yourself, this book will educate you about pitfalls and show you what to do. If you purchase products that use a database, the book explains the technology so that you can understand what the vendor is doing and assess their products better." --Michael Blaha, consultant and trainer, author of A Manager's Guide to Database Technology "If you told me that Mike Hernandez could improve on the first edition of Database Design for Mere Mortals I wouldn't have believed you, but he did! The second edition is packed with more real-world examples, detailed explanations, and even includes database-design tools on the CD-ROM! This is a must-read for anyone who is even remotely interested in relational database design, from the individual who is called upon occasionally to create a useful tool at work, to the seasoned professional who wants to brush up on the fundamentals. Simply put, if you want to do it right, read this book!" --Matt Greer, Process Control Development, The Dow Chemical Company "Mike's approach to database design is totally common-sense based, yet he's adhered to all the rules of good relational database design. I use Mike's books in my starter database-design class, and I recommend his books to anyone who's interested in learning how to design databases or how to write SQL queries." --Michelle Poolet, President, MVDS, Inc. "Slapping together sophisticated applications with poorly designed data will hurt you just as much now as when Mike wrote his first edition, perhaps even more. Whether you're just getting started developing with data or are a seasoned pro; whether you've read Mike's previous book or this is your first; whether you're happier letting someone else design your data or you love doing it yourself--this is the book for you. Mike's ability to explain these concepts in a way that's not only clear, but fun, continues to amaze me." --From the Foreword by Ken Getz, MCW Technologies, coauthor ASP.NET Developer's JumpStart "The first edition of Mike Hernandez's book Database Design for Mere Mortals was one of the few books that survived the cut when I moved my office to smaller quarters. The second edition expands and improves on the original in so many ways. It is not only a good, clear read, but contains a remarkable quantity of clear, concise thinking on a very complex subject. It's a must for anyone interested in the subject of database design." --Malcolm C. Rubel, Performance Dynamics Associates "Mike's excellent guide to relational database design deserves a second edition. His book is an essential tool for fledgling Microsoft Access and other desktop database developers, as well as for client/server pros. I recommend it highly to all my readers." --Roger Jennings, author of Special Edition Using Access 2002 "There are no silver bullets! Database technology has advanced dramatically, the newest crop of database servers perform operations faster than anyone could have imagined six years ago, but none of these technological advances will help fix a bad database design, or capture data that you forgot to include! Database Design for Mere Mortals(TM), Second Edition, helps you design your database right in the first place!" --Matt Nunn, Product Manager, SQL Server, Microsoft

Corporation "When my brother started his professional career as a developer, I gave him Mike's book to help him understand database concepts and make real-world application of database technology. When I need a refresher on the finer points of database design, this is the book I pick up. I do not think that there is a better testimony to the value of a book than that it gets used. For this reason I have wholeheartedly recommended to my peers and students that they utilize this book in their day-to-day development tasks."

--Chris Kunicki, Senior Consultant, OfficeZealot.com "Mike has always had an incredible knack for taking the most complex topics, breaking them down, and explaining them so that anyone can 'get it.' He has honed and polished his first very, very good edition and made it even better. If you're just starting out building database applications, this book is a must-read cover to cover. Expert designers will find Mike's approach fresh and enlightening and a source of great material for training others." --John Viescas, President, Viescas Consulting, Inc., author of Running Microsoft Access 2000 and coauthor of SQL Queries for Mere Mortals "Whether you need to learn about relational database design in general, design a relational database, understand relational database terminology, or learn best practices for implementing a relational database, Database Design for Mere Mortals(TM), Second Edition, is an indispensable book that you'll refer to often. With his many years of real-world experience designing relational databases, Michael shows you how to analyze and improve existing databases, implement keys, define table relationships and business rules, and create data views, resulting in data integrity, uniform access to data, and reduced data-entry errors." --Paul Cornell, Site Editor, MSDN Office Developer Center Sound database design can save hours of development time and ensure functionality and reliability. Database Design for Mere Mortals(TM), Second Edition, is a straightforward, platform-independent tutorial on the basic principles of relational database design. It provides a commonsense design methodology for developing databases that work. Database design expert Michael J. Hernandez has expanded his best-selling first edition, maintaining its hands-on approach and accessibility while updating its coverage and including even more examples and illustrations. This edition features a CD-ROM that includes diagrams of sample databases, as well as design guidelines, documentation forms, and examples of the database design process. This book will give you the knowledge and tools you need to create efficient and effective relational databases.

This IBM® Redbooks® publication is focused on melding industry preferred practices with the unique needs of the IBM i community and providing a holistic view of modernization. This book covers key trends for application structure, user interface, data access, and the database. Modernization is a broad term when applied to applications. It is more than a single event. It is a sequence of actions. But even more, it is a process of rethinking how to approach the creation and maintenance of applications. There are tangible deliveries when it comes to modernization, the most notable being a modern user interface (UI), such as a web browser or being able to access applications from a mobile device. The UI, however, is only the beginning. There are many more aspects to modernization. Using modern tools and methodologies can significantly improve productivity and reduce long-term cost while positioning applications for the next decade. It is time to put the past away. Tools and methodologies have undergone significant transformation, improving functionality, usability, and productivity. This is true of the plethora of IBM tools and the wealth of tools available from many Independent Solution Providers (ISVs). This publication is the result of work that was done by IBM, industry experts, and by representatives from many of the ISV Tool Providers. Some of their tools are referenced in the book. In addition to reviewing technologies based on context, there is an explanation of why modernization is important and a description of the business benefits of investing in modernization. This critical information is key for line-of-business executives who want to understand the benefits of a modernization project. This book is appropriate for CIOs, architects, developers, and business leaders. Related information Making the Case for Modernization, IBM Systems Magazine

Describes Agile Modeling Driven Design (AMDD) and Test-Driven Design (TDD) approaches, database refactoring, database encapsulation strategies, and tools that support evolutionary techniques Agile software developers often use object and relational database (RDB) technology together and as a result must overcome the impedance mismatch The author covers techniques for mapping objects to RDBs and for implementing concurrency control, referential integrity, shared business logic, security access control, reports, and XML An agile foundation describes fundamental skills that all agile software developers require, particularly Agile DBAs Includes object modeling, UML data modeling, data normalization, class normalization, and how to deal with legacy databases Scott W. Ambler is author of Agile Modeling (0471202827), a contributing editor with Software Development (www.sdmagazine.com), and a featured speaker at software conferences worldwide

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.

Presents the capabilities and features of new ideas and concepts in the information systems development, database, and forthcoming technologies. Provides a representation of

topnotch research in all areas of systems analysis and design and databases.

"This book presents the latest research ideas and topics on databases and software development. It provides a representation of top notch research in all areas of database and information systems development"--Provided by publisher.

To help students gain the skills for application development, database design, and managing databases, Database Application Development and Design adheres to three guiding principles: (1) Combine concepts and practice. The textbook and the accompanying supplements have been designed to provide close integration between concepts and practice. (2) Emphasize problem-solving skills. This book features problem-solving guidelines to help students master the fundamental skills of data modeling, normalization, query formulation, and application development. (3) Provide introductory and advanced material: Business students who use this book may have a variety of backgrounds. This book provides enough depth to satisfy more advanced courses, but the advanced parts are placed so that they can be skipped by the less inclined.

Refactoring has proven its value in a wide range of development projects—helping software professionals improve system designs, maintainability, extensibility, and performance. Now, for the first time, leading agile methodologist Scott Ambler and renowned consultant Pramodkumar Sadalage introduce powerful refactoring techniques specifically designed for database systems. Ambler and Sadalage demonstrate how small changes to table structures, data, stored procedures, and triggers can significantly enhance virtually any database design—without changing semantics. You'll learn how to evolve database schemas in step with source code—and become far more effective in projects relying on iterative, agile methodologies. This comprehensive guide and reference helps you overcome the practical obstacles to refactoring real-world databases by covering every fundamental concept underlying database refactoring. Using start-to-finish examples, the authors walk you through refactoring simple standalone database applications as well as sophisticated multi-application scenarios. You'll master every task involved in refactoring database schemas, and discover best practices for deploying refactorings in even the most complex production environments. The second half of this book systematically covers five major categories of database refactorings. You'll learn how to use refactoring to enhance database structure, data quality, and referential integrity; and how to refactor both architectures and methods. This book provides an extensive set of examples built with Oracle and Java and easily adaptable for other languages, such as C#, C++, or VB.NET, and other databases, such as DB2, SQL Server, MySQL, and Sybase. Using this book's techniques and examples, you can reduce waste, rework, risk, and cost—and build database systems capable of evolving smoothly, far into the future. For programmers who prefer content to frills, this guide has succinct and straightforward information for putting Access to its full, individually tailored use.

"This book presents cutting-edge research and analysis of the most recent advancements in the fields of database systems and software development"--Provided by publisher.

From the #1 source for computing information, trusted by more than six million readers worldwide.

This book is a mini tutorial full of code examples and strategies to give you plenty of options when building your own applications with MongoDB. This book is ideal for people who want to develop applications on the Node.js stack quickly and efficiently. Prior knowledge of the stack is not essential as the book briefly covers the installation of the core components and builds all aspects of the example application. The focus of the book is on what Mongoose adds to you applications, so experienced Node.js developers will also benefit.

When creating complex Java enterprise applications, do you spend a lot of time thumbing through a myriad of books and other resources searching for what you hope will be the API that's right for the project at hand? Java Database Best Practices rescues you from having to wade through books on each of the various APIs before figuring out which method to use! This comprehensive guide introduces each of the dominant APIs (Enterprise JavaBeans, Java Data Objects, the Java Database Connectivity API (JDBC) as well as other, lesser-known options), explores the methodology and design components that use those APIs, and then offers practices most appropriate for different types and makes of databases, as well as different types of applications. Java Database Practices also examines database design, from table and database architecture to normalization, and offers a number of best practices for handling these tasks as well. Learn how to move through the various forms of normalization, understand when to denormalize, and even get detailed instructions on optimizing your SQL queries to make the best use of your database structure. Through it all, this book focuses on practical application of these techniques, giving you information that can immediately be applied to your own enterprise projects. Enterprise applications in today's world are about data-- whether it be information about a product to buy, a user's credit card information, or the color that a customer prefers for their auto purchases. And just as data has grown in importance, the task of accessing that data has grown in complexity. Until now, you have been left on your own to determine which model best suits your application, and how best to use your chosen API. Java Database Practices is the one stop reference book to help you determine what's appropriate for your specific project at hand. Whether it's choosing between an alphabet soup of APIs and technologies--EJB, JDO, JDBC, SQL, RDBMS, OODBMS, and more on the horizon, this book is an indispensable resource you can't do without.

Describes ways to incorporate domain modeling into software development.

For students in the introductory course in database who want to learn how to design rather than just manipulate relational databases. The book that balances database theory, business problem solving, and hands-on-practice. This book prepares student for the workplace without sacrificing rigorous academic theory.

Six-Step Relational Database Design™ bridges the gaps between database theory, database modeling, and database implementation by outlining a simple but reliable six-step process for accurately modeling user data on a Crow's Foot Relational Model Diagram, and then demonstrating how to implement this model on any relational database

management system. The second edition contains a new chapter on implementation that goes through the steps necessary to implement each of the case studies on a relational database management system, clearly relating the design to implementation and database theory. In addition, questions are also included at the end of each of the six steps and one of the previous case studies has been replaced, making the case study selection more diverse. Six-Step Relational Database Design™ uses three case studies and starts with a statement of the problem by the client and then goes through the six steps necessary to create a reliable and accurate data model of the client's business requirements. This model can then be used to implement the database on any relational database management system. Six-Step Relational Database Design™ should be used as a handbook for students and professionals in the software-development field. The technique described in this book can be used by students for quickly developing relational databases for their applications, and by professionals for developing sturdy, reliable, and accurate relational database models for their software applications.

Advancements in technology have allowed for the creation of new tools and innovations that can improve different aspects of life. These applications can be utilized across different technological platforms. Application Development and Design: Concepts, Methodologies, Tools, and Applications is a comprehensive reference source for the latest scholarly material on trends, techniques, and uses of various technology applications and examines the benefits and challenges of these computational developments.

Highlighting a range of pertinent topics such as software design, mobile applications, and web applications, this multi-volume book is ideally designed for researchers, academics, engineers, professionals, students, and practitioners interested in emerging technology applications.

"What I think Date has done is nothing less than to lay out the foundational concepts for the next generation of business logic servers based on predicate logic. Such a breakthrough should revolutionize application development in our industry--and take business rules to their fullest expression." --Ronald G. Ross, Principal, Business Rule Solutions, LLC Executive Editor, DataToKnowledge Newsletter The way we build computer applications is about to change dramatically, thanks to a new development technology known as business rules. The key idea behind the technology is that we can build applications declaratively instead of procedurally--that is, we can simply state WHAT needs to be done instead of HOW to do what needs to be done. The advantages are obvious: ease and rapidity of initial development and subsequent maintenance, hardware and software platform independence, overall productivity, business adaptivity, and more. What Not How: The Business Rules Approach to Application Development is a concise and accessible introduction to this new technology. It is written for both managers and technical professionals. The book consists of two parts: Part I presents a broad overview of what business rules are all about; Part II then revisits the ideas in Part I and shows how they fit squarely into the solid tradition of relational technology. Topics covered include: Presentation rules Database and application rules Building on the data model Potential advantages and disadvantages A new look at relational fundamentals Business rules and the relational model Overall, the book provides a good grounding in an important new technology, one poised to transform the way we do business in the IT world.

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Although today's job market requires IT professionals to understand cloud computing theories and have hands-on skills for developing real-world database systems, there are few books available that integrate coverage of both. Filling this void, Cloud Database Development and Management explains how readers can take advantage of the cloud environment to develop their own fully functioning database systems without any additional investment in IT infrastructure. Filled with step-by-step instructions, examples, and hands-on projects, the book begins by providing readers with the required foundation in database systems and cloud-based database development tools. It supplies detailed instructions on setting up data storage on Windows Azure and also explains how readers can develop their own virtual machines with Windows Server 2012 as the guest operating system. The book's wide-ranging coverage includes database design, database implementation, database deployment to the cloud environment, SQL Database, Table Storage service, Blob Storage service, Queue Storage service, and database application development. The text deals with all three aspects of database design: conceptual design, logical design, and physical design. It introduces the SQL language, explains how to use SQL to create database objects, and introduces the migration of the database between Windows Azure and the on-premises SQL Server. It also discusses the management tasks that keep both SQL Database and Windows Azure running smoothly. Detailing how to design, implement, and manage database systems in the cloud, the book provides you with tools that can make your cloud database development much more efficient and flexible. Its easy-to-follow instructions will help you develop the hands-on skills needed to store and manage critical business information and to make that data available anytime through the Internet.

Combines language tutorials with application design advice to cover the PHP server-side scripting language and the MySQL database engine.

Data is at the center of many challenges in system design today. Difficult issues need to be figured out, such as scalability, consistency, reliability, efficiency, and maintainability. In addition, we have an overwhelming variety of tools, including relational databases, NoSQL datastores, stream or batch processors, and message brokers. What are the right choices for your application? How do you make sense of all these buzzwords? In this practical and comprehensive guide, author Martin Kleppmann helps you navigate this diverse landscape by examining the pros and cons of various technologies for processing and storing data. Software keeps changing, but the fundamental principles remain the same. With this book, software engineers and architects will learn how to apply those ideas in practice, and how to make full use of data in modern applications. Peer under the hood of the systems you already use, and learn how to use and operate them more effectively Make informed decisions by identifying the strengths and weaknesses of different tools Navigate the trade-offs around consistency, scalability, fault tolerance, and complexity Understand the distributed systems research upon which modern databases are built

Peek behind the scenes of major online services, and learn from their architectures

Get up to speed with core PostgreSQL tasks such as database administration, application development, database performance monitoring, and database testing Key Features Build real-world enterprise database management systems using Postgres 12 features Explore the development, administrative and security aspects of PostgreSQL 12 Implement best practices from industry experts to build powerful database applications Book Description PostgreSQL is an open-source object-relational database management system (DBMS) that provides enterprise-level services, including high performance and scalability. This book is a collection of unique projects providing you with a wealth of information relating to administering, monitoring, and testing PostgreSQL. The focus of each project is on both the development and the administrative aspects of PostgreSQL. Starting by exploring development aspects such as database design and its implementation, you'll then cover PostgreSQL administration by understanding PostgreSQL architecture, PostgreSQL performance, and high-availability clusters. Various PostgreSQL projects are explained through current technologies such as DevOps and cloud platforms using programming languages like Python and Node.js. Later, you'll get to grips with the well-known database API tool, PostgREST, before learning how to use popular PostgreSQL database testing frameworks. The book is also packed with essential tips and tricks and common patterns for working seamlessly in a production environment. All the chapters will be explained with the help of a real-world case study on a small banking application for managing ATM locations in a city. By the end of this DBMS book, you'll be proficient in building reliable database solutions as per your organization's needs. What you will learn Set up high availability PostgreSQL database clusters in the same containment, a cross-containment, and on the cloud Monitor the performance of a PostgreSQL database Create automated unit tests and implement test-driven development for a PostgreSQL database Develop PostgreSQL apps on cloud platforms using DevOps with Python and Node.js Write robust APIs for PostgreSQL databases using Python programming, Node.js, and PostgREST Create a geospatial database using PostGIS and PostgreSQL Implement automatic configuration by Ansible and Terraform for Postgres Who this book is for This PostgreSQL book is for database developers, database administrators, data architects, or anyone who wants to build end-to-end database projects using Postgres. This book will also appeal to software engineers, IT technicians, computer science researchers, and university students who are interested in database development and administration. Some familiarity with PostgreSQL and Linux is required to grasp the concepts covered in the book effectively.

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