Database Principles Programming And Performance Second Edition The Morgan Kaufmann Series In Data Management Systems

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Database Modeling and Design Toby J. Teorey
2011-02-10
Database Modeling and Design, Fifth Edition,
focuses on techniques for database design in
relational database systems. This extensively
revised fifth edition features clear explanations,
lots of terrific examples and an illustrative case,
and practical advice, with design rules that are
applicable to any SQL-based system. The
common examples are based on real-life
experiences and have been thoroughly class-
tested. This book is immediately useful to
anyone tasked with the creation of data models
for the integration of large-scale enterprise data.
It is ideal for a stand-alone data management
course focused on logical database design, or a
supplement to an introductory text for
introductory database management. In-depth
detail and plenty of real-world, practical
examples throughout Loaded with design rules
and illustrative case studies that are applicable
to any SQL, UML, or XML-based system

Immediately useful to anyone tasked with the
creation of data models for the integration of
large-scale enterprise data.
Data Preparation for Data Mining Using -SAS
Mamdouh Refaat 2010-07-27
Are you a data mining analyst, who spends up to
80% of your time assuring data quality, then
preparing that data for developing and deploying
predictive models? And do you find lots of
literature on data mining theory and concepts,
but when it comes to practical advice on
developing good mining views find little "how to
information? And are you, like most analysts,
preparing the data in SAS? This book is intended
to fill this gap as your source of practical
recipes. It introduces a framework for the
process of data preparation for data mining, and
presents the detailed implementation of each
step in SAS. In addition, business applications of
data mining modeling require you to deal with a
large number of variables, typically hundreds if
not thousands. Therefore, the book devotes

several chapters to the methods of data transformation and variable selection. A complete framework for the data preparation process, including implementation details for each step. The complete SAS implementation code, which is readily usable by professional analysts and data miners. A unique and comprehensive approach for the treatment of missing values, optimal binning, and cardinality reduction. Assumes minimal proficiency in SAS and includes a quick-start chapter on writing SAS macros.

Querying XML - Jim Melton 2011-04-08 XML has become the lingua franca for representing business data, for exchanging information between business partners and applications, and for adding structure– and sometimes meaning—to text-based documents. XML offers some special challenges and opportunities in the area of search: querying XML can produce very precise, fine-grained results, if you know how to express and execute those queries. For software developers and systems architects: this book teaches the most useful approaches to querying XML documents and repositories. This book will also help managers and project leaders grasp how "querying XML fits into the larger context of querying and XML. Querying XML provides a comprehensive background from fundamental concepts (What is XML?) to data models (the Infoset, PSVI, XQuery Data Model), to APIs (querying XML from SQL or Java) and more. * Presents the concepts clearly, and demonstrates them with illustrations and examples; offers a thorough mastery of the subject area in a single book. * Provides comprehensive coverage of XML query languages, and the concepts needed to understand them completely (such as the XQuery Data Model). * Shows how to query XML documents and data using: XPath (the XML Path Language); XQuery, soon to be the new W3C Recommendation for querying XML; XQuery's companion XQueryX; and SQL, featuring the

SQL/XML * Includes an extensive set of XQuery, XPath, SQL, Java, and other examples, with links to downloadable code and data samples.

Designing Data-Intensive Web Applications - Stefano Ceri 2003-01-04
The most prominent Web applications in use today are data-intensive. Scores of database management systems across the Internet access and maintain large amounts of structured data for e-commerce, on-line trading, banking, digital libraries, and other high-volume sites. Developing and maintaining these data-intensive applications is an especially complex, multi-disciplinary activity, requiring all the tools and techniques that software engineering can provide. This book represents a breakthrough for Web application developers. Using hundreds of illustrations and an elegant intuitive modeling language, the authors—all internationally-known database researchers—present a methodology that fully exploits the conceptual modeling approach of software engineering, from idea to application. Readers will learn not only how to harness the design technologies of relational databases for use on the Web, but also how to transform their conceptual designs of data-intensive Web applications into effective software components. * A fully self-contained introduction and practitioner's guide suitable for both technical and non-technical members of staff, as well as students. * A methodology, development process, and notation (WebML) based on common practice but optimized for the unique challenges of high-volume Web applications. * Completely platform- and product-independent; even the use of WebML is optional. * Based on well-known industry standards such as UML and the Entity Relationship Model. * Enhanced by its own Web site (http://www.webml.org), containing additional examples, papers, teaching materials, developers' resources, and exercises with solutions.

Data Mining, Southeast Asia Edition - Jiawei Han

2006-04-06

Our ability to generate and collect data has been increasing rapidly. Not only are all of our business, scientific, and government transactions now computerized, but the widespread use of digital cameras, publication tools, and bar codes also generate data. On the collection side, scanned text and image platforms, satellite remote sensing systems, and the World Wide Web have flooded us with a tremendous amount of data. This explosive growth has generated an even more urgent need for new techniques and automated tools that can help us transform this data into useful information and knowledge. Like the first edition, voted the most popular data mining book by KD Nuggets readers, this book explores concepts and techniques for the discovery of patterns hidden in large data sets, focusing on issues relating to their feasibility, usefulness, effectiveness, and scalability. However, since the publication of the first edition, great progress has been made in the development of new data mining methods, systems, and applications. This new edition substantially enhances the first edition, and new chapters have been added to address recent developments on mining complex types of data— including stream data, sequence data, graph structured data, social network data, and multi-relational data. A comprehensive, practical look at the concepts and techniques you need to know to get the most out of real business data Updates that incorporate input from readers, changes in the field, and more material on statistics and machine learning Dozens of algorithms and implementation examples, all in easily understood pseudo-code and suitable for use in real-world, large-scale data mining projects Complete classroom support for instructors at www.mkp.com/datamining2e companion site

Joe Celko's Thinking in Sets: Auxiliary, Temporal, and Virtual Tables in SQL - Joe Celko 2008-01-22

Perfectly intelligent programmers often struggle when forced to work with SQL. Why? Joe Celko believes the problem lies with their procedural programming mindset, which keeps them from taking full advantage of the power of declarative languages. The result is overly complex and inefficient code, not to mention lost productivity. This book will change the way you think about the problems you solve with SQL programs.. Focusing on three key table-based techniques, Celko reveals their power through detailed examples and clear explanations. As you master these techniques, you'll find you are able to conceptualize problems as rooted in sets and solvable through declarative programming. Before long, you'll be coding more quickly, writing more efficient code, and applying the full power of SQL • Filled with the insights of one of the world's leading SQL authorities - noted for his knowledge and his ability to teach what he knows. • Focuses on auxiliary tables (for computing functions and other values by joins), temporal tables (for temporal queries, historical data, and audit information), and virtual tables (for improved performance). • Presents clear guidance for selecting and correctly applying the right table technique.

Data Mining - Ian H. Witten 2005-07-13 Data Mining, Second Edition, describes data mining techniques and shows how they work. The book is a major revision of the first edition that appeared in 1999. While the basic core remains the same, it has been updated to reflect the changes that have taken place over five years, and now has nearly double the references. The highlights of this new edition include thirty new technique sections; an enhanced Weka machine learning workbench, which now features an interactive interface; comprehensive information on neural networks; a new section on Bayesian networks; and much more. This text is designed for information systems practitioners, programmers, consultants, developers, information technology managers,

specification writers as well as professors and students of graduate-level data mining and machine learning courses. Algorithmic methods at the heart of successful data mining—including tried and true techniques as well as leading edge methods Performance improvement techniques that work by transforming the input or output *Moving Objects Databases* Ralf Hartmut Güting 2005-09-06

Moving Objects Databases is the first uniform treatment of moving objects databases, the technology that supports GPS and RFID. It focuses on the modeling and design of data from moving objects — such as people, animals, vehicles, hurricanes, forest fires, oil spills, armies, or other objects — as well as the storage, retrieval, and querying of that very voluminous data. It includes homework assignments at the end of each chapter, exercises throughout the text that students can complete as they read, and a solutions manual in the back of the book. This book is intended for graduate or advanced undergraduate students. It is also recommended for computer scientists and database systems engineers and programmers in government, industry and academia; professionals from other disciplines, e.g., geography, geology, soil science, hydrology, urban and regional planning, mobile computing, bioterrorism and homeland security, etc. Focuses on the modeling and design of data from moving objects--such as people, animals, vehicles, hurricanes, forest fires, oil spills, armies, or other objects--as well as the storage, retrieval, and querying of that very voluminous data. Demonstrates through many practical examples and illustrations how new concepts and techniques are used to integrate time and space in database applications. Provides exercises and solutions in each chapter to enable the reader to explore recent research results in practice.

DW 2.0: The Architecture for the Next Generation of Data Warehousing - W.H.

Inmon 2010-07-28

DW 2.0: The Architecture for the Next Generation of Data Warehousing is the first book on the new generation of data warehouse architecture, DW 2.0, by the father of the data warehouse. The book describes the future of data warehousing that is technologically possible today, at both an architectural level and technology level. The perspective of the book is from the top down: looking at the overall architecture and then delving into the issues underlying the components. This allows people who are building or using a data warehouse to see what lies ahead and determine what new technology to buy, how to plan extensions to the data warehouse, what can be salvaged from the current system, and how to justify the expense at the most practical level. This book gives experienced data warehouse professionals everything they need in order to implement the new generation DW 2.0. It is designed for professionals in the IT organization, including data architects, DBAs, systems design and development professionals, as well as data warehouse and knowledge management professionals. * First book on the new generation of data warehouse architecture, DW 2.0. * Written by the "father of the data warehouse", Bill Inmon, a columnist and newsletter editor of The Bill Inmon Channel on the Business Intelligence Network. * Long overdue comprehensive coverage of the implementation of technology and tools that enable the new generation of the DW: metadata, temporal data, ETL, unstructured data, and data quality control.

Foundations of Multidimensional and Metric Data Structures - Hanan Samet 2006-08-08 Publisher Description

Java Data Mining: Strategy, Standard, and Practice - Mark F. Hornick 2010-07-26 Whether you are a software developer, systems architect, data analyst, or business analyst, if you want to take advantage of data mining in the

development of advanced analytic applications, Java Data Mining, JDM, the new standard now implemented in core DBMS and data mining/analysis software, is a key solution component. This book is the essential guide to the usage of the JDM standard interface, written by contributors to the JDM standard. Data mining introduction - an overview of data mining and the problems it can address across industries; JDM's place in strategic solutions to data mining-related problems JDM essentials - concepts, design approach and design issues, with detailed code examples in Java; a Web Services interface to enable JDM functionality in an SOA environment; and illustration of JDM XML Schema for JDM objects JDM in practice - the use of JDM from vendor implementations and approaches to customer applications, integration, and usage; impact of data mining on IT infrastructure; a how-to guide for building applications that use the JDM API Free, downloadable KJDM source code referenced in

the book available here
Distributed Algorithms Nancy A. Lynch 1996-04-16
In Distributed Algorithms, Nancy Lynch provides a blueprint for designing, implementing, and analyzing distributed algorithms. She directs her book at a wide audience, including students, programmers, system designers, and researchers. Distributed Algorithms contains the most significant algorithms and impossibility results in the area, all in a simple automata-theoretic setting. The algorithms are proved correct, and their complexity is analyzed according to precisely defined complexity measures. The problems covered include resource allocation, communication, consensus among distributed processes, data consistency, deadlock detection, leader election, global snapshots, and many others. The material is organized according to the system model—first by the timing model and then by the interprocess communication mechanism. The

material on system models is isolated in separate chapters for easy reference. The presentation is completely rigorous, yet is intuitive enough for immediate comprehension. This book familiarizes readers with important problems, algorithms, and impossibility results in the area: readers can then recognize the problems when they arise in practice, apply the algorithms to solve them, and use the impossibility results to determine whether problems are unsolvable. The book also provides readers with the basic mathematical tools for designing new algorithms and proving new impossibility results. In addition, it teaches readers how to reason carefully about distributed algorithms—to model them formally, devise precise specifications for their required behavior, prove their correctness, and evaluate their performance with realistic measures.

Database Design: Know It All - Toby J. Teorey 2008-10-23

This book brings all of the elements of database design together in a single volume, saving the reader the time and expense of making multiple purchases. It consolidates both introductory and advanced topics, thereby covering the gamut of database design methodology ? from ER and UML techniques, to conceptual data modeling and table transformation, to storing XML and querying moving objects databases. The proposed book expertly combines the finest database design material from the Morgan Kaufmann portfolio. Individual chapters are derived from a select group of MK books authored by the best and brightest in the field. These chapters are combined into one comprehensive volume in a way that allows it to be used as a reference work for those interested in new and developing aspects of database design. This book represents a quick and efficient way to unite valuable content from leading database design experts, thereby creating a definitive, one-stop-shopping opportunity for customers to receive the

information they would otherwise need to round up from separate sources. Chapters contributed by various recognized experts in the field let the reader remain up to date and fully informed from multiple viewpoints. Details multiple relational models and modeling languages, enhancing the reader's technical expertise and familiarity with design-related requirements specification. Coverage of both theory and practice brings all of the elements of database design together in a single volume, saving the reader the time and expense of making multiple purchases.

Database - Patrick O'Neil 2001
"The chapter on object-relational database should be a great selling point for the book. No one else has the coverage on object relational that this chapter has; for example, the other new texts emphasize the purely object model. I think that the approach here is much more practical." --Betty Salzberg, Northeastern University "The coverage of this book is wonderful, especially the cutting-edge of object-relational systems . . . [and] this is the only text I have seen that is not by Jeffrey Ullman that treats the theoretical material appropriately. The chapter on dependencies and relational design is excellent. Examples abound, the explanations are crisp and clear, and the appropriate concepts are discussed. I cannot wait to use it." --Bill Grosky, Wayne State University "This book makes an excellent text for anyone just approaching database systems. It's both an accessible refresher for those of us who have not been paying careful attention to developments in this area and a useful reference for designers and implementers who need just-in-time education." --Jim Gray, Microsoft Research "This book is excellent!" --Mike Hartstein, Oracle Corporation, Senior Director of Oracle8i Product Management This second edition relies on the same successful approach that distinguished the first: it covers the principles of database theory with unmatched thoroughness, and it rigorously

links theory to the real world of database programming and administration. A careful discussion of SQL standards and a multitude of examples drawn from actual databases-Oracle, DB2, and Informix-complements the authors' concept-oriented instruction, allowing you to develop product-specific understanding and to learn the important differences between the SQL dialects that will enable you to write portable applications. New Features Focuses extensively on the object-relational model that is rapidly gaining acceptance and revolutionizing the database industry. Collection types and UDF's are thoroughly covered. Introduces new relational features of SQL taken from the latest versions of today's most popular database products, Oracle, DB2, and Informix. Offers thorough coverage of the SQL-99 standard, including additions designed to help you take full advantage of the object-relational model. Provides expanded programming examples intended to improve your understanding of transaction processing and error handling. Explains clearly the principles of logical database design, including those relating to the E-R model and normalization, with a number of new illustrations and examples. Presents the latest indexing and query processing techniques, such as bitmap indexing, and shows how to use them to achieve significant performance improvements.

Managing Reference Data in Enterprise Databases - Malcolm Chisholm 2001
"This is a great book! I have to admit I wasn't enthusiastic about the idea of a book with such a narrow topic initially, but, frankly, it's the first professional book I've read page to page in one sitting in a long time. It should be of interest to DBAs, data architects and modelers, programmers who have to write database programs, and yes, even managers. This book is a winner." - Karen Watterson, Editor SQL Server Professional "Malcolm Chisholm has produced a very readable book. It is well-written and with

excellent examples. It will, I am sure, become the Reference Book on Reference Data." - Clive Finkelstein, "Father" of Information Engineering, Managing Director, Information Engineering Services Pty Ltd Reference data plays a key role in your business databases and must be free from defects of any kind. So why is it so hard to find information on this critical topic? Recognizing the dangers of taking reference data for granted, Managing Reference Data in Enterprise Databases gives you precisely what you've been seeking: A complete guide to the implementation and management of reference data of all kinds. This book begins with a thorough definition of reference data, then proceeds with a detailed examination of all reference data issues, fully describing uses, common difficulties, and practical solutions. Whether you're a database manager, architect, administrator, programmer, or analyst, be sure to keep this easy-to-use reference close at hand. Features Solves special challenges associated with maintaining reference data. Addresses a wide range of reference data issues, including acronyms, redundancy, mapping, life cycles, multiple languages, and querying. Describes how reference data interacts with other system components, what problems can arise, and how to mitigate these problems. Offers examples of standard reference data types and matrices for evaluating management methods. Provides a number of standard reference data tables and more specialized material to help you deal with reference data, via a companion Web site

SQL: 1999 - Jim Melton 2001-05-30
SQL: 1999 is the best way to make the leap from SQL-92 to SQL:1999, but it is much more than just a simple bridge between the two. The latest from celebrated SQL experts Jim Melton and Alan Simon, SQL:1999 is a comprehensive, eminently practical account of SQL's latest incarnation and a potent distillation of the details required to put it to work. Written to accommodate both novice and experienced SQL

users, SQL:1999 focuses on the language's capabilities, from the basic to the advanced, and the ways that real applications take advantage of them. Throughout, the authors illustrate features and techniques with clear and often entertaining references to their own custom database. Gives authoritative coverage from an expert team that includes the editor of the SQL-92 and SQL:1999 standards. Provides a general introduction to SQL that helps you understand its constituent parts, history, and place in the realm of computer languages. Explains SQL:1999's more sophisticated features, including advanced value expressions, predicates, advanced SQL query expressions, and support for active databases. Explores key issues for programmers linking applications to SQL databases. Provides guidance on troubleshooting, internationalization, and changes anticipated in the next version of SQL. Contains appendices devoted to database design, a complete SQL:1999 example, the standardization process, and more.

Joe Celko's SQL for Smarties Joe Celko 2010-11-22

Joe Celkos SQL for Smarties: Advanced SQL Programming offers tips and techniques in advanced programming. This book is the fourth edition and it consists of 39 chapters, starting with a comparison between databases and file systems. It covers transactions and currency control, schema level objects, locating data and schema numbers, base tables, and auxiliary tables. Furthermore, procedural, semi-procedural, and declarative programming are explored in this book. The book also presents the different normal forms in database normalization, including the first, second, third, fourth, fifth, elementary key, domain-key, and Boyce-Codd normal forms. It also offers practical hints for normalization and denormalization. The book discusses different data types, such as the numeric, temporal and character data types; the different predicates; and the simple and

advanced SELECT statements. In addition, the book presents virtual tables, and it discusses data partitions in queries; grouping operations; simple aggregate functions; and descriptive statistics, matrices and graphs in SQL. The book concludes with a discussion about optimizing SQL. It will be of great value to SQL programmers. Expert advice from a noted SQL authority and award-winning columnist who has given ten years service to the ANSI SQL standards committee Teaches scores of advanced techniques that can be used with any product, in any SQL environment, whether it is an SQL 92 or SQL 2008 environment Offers tips for working around deficiencies and gives insight into real-world challenges

Component Database Systems - Klaus R. Dittrich 2000-10-25

Component Database Systems is a collection of invited chapters by the researchers making the most influential contributions in the database industry's trend toward componentization This book represents the sometimes-divergent, sometimes-convergent approaches taken by leading database vendors as they seek to establish commercially viable componentization strategies. Together, these contributions form the first book devoted entirely to the technical and architectural design of component-based database systems. In addition to detailing the current state of their research, the authors also take up many of the issues affecting the likely future directions of component databases. If you have a stake in the evolution of any of today's leading database systems, this book will make fascinating reading. It will also help prepare you for the technology that is likely to become widely available over the next several years. * Is comprised of contributions from the field's most highly respected researchers, including key figures at IBM, Oracle, Informix, Microsoft, and POET. * Represents the entire spectrum of approaches taken by leading software companies working on DBMS componentization

strategies. * Covers component-focused architectures, methods for hooking components into an overall system, and support for component development. * Examines the component technologies that are most valuable to Web-based and multimedia databases. * Presents a thorough classification and overview of component database systems.

Information Modeling and Relational Databases - Terry Halpin 2010-07-27
Information Modeling and Relational Databases, Second Edition, provides an introduction to ORM (Object-Role Modeling)and much more. In fact, it is the only book to go beyond introductory coverage and provide all of the in-depth instruction you need to transform knowledge from domain experts into a sound database design. This book is intended for anyone with a stake in the accuracy and efficacy of databases: systems analysts, information modelers, database designers and administrators, and programmers. Terry Halpin, a pioneer in the development of ORM, blends conceptual information with practical instruction that will let you begin using ORM effectively as soon as possible. Supported by examples, exercises, and useful background information, his step-by-step approach teaches you to develop a natural-language-based ORM model, and then, where needed, abstract ER and UML models from it. This book will quickly make you proficient in the modeling technique that is proving vital to the development of accurate and efficient databases that best meet real business objectives. Presents the most indepth coverage of Object-Role Modeling available anywhere, including a thorough update of the book for ORM2, as well as UML2 and E-R (Entity-Relationship) modeling. Includes clear coverage of relational database concepts, and the latest developments in SQL and XML, including a new chapter on the impact of XML on information modeling, exchange and transformation. New and improved case studies and exercises are

provided for many topics.

Joe Celko's Data, Measurements and Standards in SQL - Joe Celko 2009-09-22
Joe Celko has looked deep into the code of SQL programmers and found a consistent and troubling pattern - a frightening lack of consistency between their individual encoding schemes and those of the industries in which they operate. This translates into a series of incompatible databases, each one an island unto itself that is unable to share information with others in an age of internationalization and business interdependence. Such incompatibility severely hinders information flow and the quality of company data. Data, Measurements and Standards in SQL reveals the shift these programmers need to make to overcome this deadlock. By collecting and detailing the diverse standards of myriad industries, and then giving a declaration for the units that can be used in an SQL schema, Celko enables readers to write and implement portable data that can interface to any number of external application systems! This book doesn't limit itself to one subject, but serves as a detailed synopsis of measurement scales and data standards for all industries, thereby giving RDBMS programmers and designers the knowledge and know-how they need to communicate effectively across business boundaries. * Collects and details the diverse data standards of myriad industries under one cover, thereby creating a definitive, one-stop-shopping opportunity for database programmers. * Enables readers to write and implement portable data that can interface to any number external application systems, allowing readers to cross business boundaries and move up the career ladder. * Expert advice from one of the most-read SQL authors in the world who is well known for his ten years of service on the ANSI SQL standards committee and Readers Choice Award winning column in Intelligent Enterprise.
Database Systems - S. K. Singh 2009

This book is a comprehensive, practical, and student-friendly textbook addressing fundamental concepts in database design and applications.

Understanding SQL and Java Together - Jim Melton 2000

With the growth of Java and the rise of database-powered Web applications, the need to use Java with SQL is clear. Until now, authoritative coverage of the techniques available to meet these challenges and reap their benefits-both programming and career benefits-didn't exist. Understanding SQL and Java Together examines all the standards for combining SQL and Java. It shows you exactly how to use their features to write efficient and effective code supporting Java access to SQL data in a variety of ways. You'll gain a thorough understanding of the relationship between SQL and Java, which will allow you to write static and dynamic SQL programs in Java, merge Java code with SQL databases and SQL code, and use other data management techniques wherever appropriate. * Covers all the technologies for using SQL and Java together, including JDBC, Java Blend, and SQLJ Parts 0, 1, and 2 * Explains how to embed SQL code in Java and take advantage of Java's ability to compile that code for a specific DBMS * Explains how to store and invoke Java routines in an SQL database-and how to store Java objects in an SQL database for seamless interchange among application layers * Covers dynamic SQL access techniques using JDBC and advantageous ways to combine static and dynamic SQL * Comes with a CD-ROM containing Oracle's JDeveloper , Sybase's Adaptive Server Anywhere, Informix's Cloudscape, the complete database schema, and the complete text of most of the examples

Database Modeling with Microsoft® Visio for Enterprise Architects - Terry Halpin 2003-09-11

This book is for database designers and database administrators using Visio, which is the database

component of Microsoft's Visual Studio .NET for Enterprise Architects suite, also included in MSDN subscriptions. This is the only guide to this product that tells DBAs how to get their job done. Although primarily focused on tool features, the book also provides an introduction to data modeling, and includes practical advice on managing database projects. The principal author was the program manager of VEA's database modeling solutions. · Explains how to model databases with Microsoft® Visio for Enterprise Architects (VEA), focusing on tool features. · Provides a platform-independent introduction to data modeling using both Object Role Modeling (ORM) and Entity Relationship Modeling (ERM), and includes practical advice on managing database projects. · Additional ORM models, course notes, and add-ins available online.

Data Model Patterns: A Metadata Map - David C. Hay 2010-07-20
Data Model Patterns: A Metadata Map not only presents a conceptual model of a metadata repository but also demonstrates a true enterprise data model of the information technology industry itself. It provides a step-by-step description of the model and is organized so that different readers can benefit from different parts. It offers a view of the world being addressed by all the techniques, methods, and tools of the information processing industry (for example, object-oriented design, CASE, business process re-engineering, etc.) and presents several concepts that need to be addressed by such tools. This book is pertinent, with companies and government agencies realizing that the data they use represent a significant corporate resource recognize the need to integrate data that has traditionally only been available from disparate sources. An important component of this integration is management of the "metadata" that describe, catalogue, and provide access to the various forms of underlying business data. The "metadata

repository" is essential to keep track of the various physical components of these systems and their semantics. The book is ideal for data management professionals, data modeling and design professionals, and data warehouse and database repository designers. A comprehensive work based on the Zachman Framework for information architecture—encompassing the Business Owner's, Architect's, and Designer's views, for all columns (data, activities, locations, people, timing, and motivation) Provides a step-by-step description of model and is organized so that different readers can benefit from different parts Provides a view of the world being addressed by all the techniques, methods and tools of the information processing industry (for example, object-oriented design, CASE, business process re-engineering, etc.) Presents many concepts that are not currently being addressed by such tools — and should be

Database--principles, Programming, and Performance - Patrick O'Neil 2001

Of the many introductory books on database technology, none are as pragmatic or as broadly useful as Database; Principles, Programming, Performance. In this second edition, authors O'Neil and O'Neil offer a thoroughly up-to-date look at today's most critical database technologies, including established relational products and the emerging object-relational model. Throughout, the focus is on the programming, implementation, and optimisation techniques that developers and administrators need to know to enjoy rapid, regular advancement in the information technology field. This book will appeal not only to the academic and corporate training market, but also to new and aspiring professionals, including data analysts seeking a reliable, practical desktop reference.

Spatial Databases - Ph Rigaux 2002
The authors explore and explain current techniques for handling the specialised data that describes geographical phenomena in a study

that will be of great value to computer scientists and geographers working with spatial databases.
Transaction Processing - Jim Gray 1992-09-30 The key to client/server computing. Transaction processing techniques are deeply ingrained in the fields of databases and operating systems and are used to monitor, control and update information in modern computer systems. This book will show you how large, distributed, heterogeneous computer systems can be made to work reliably. Using transactions as a unifying conceptual framework, the authors show how to build high-performance distributed systems and high-availability applications with finite budgets and risk. The authors provide detailed explanations of why various problems occur as well as practical, usable techniques for their solution. Throughout the book, examples and techniques are drawn from the most successful commercial and research systems. Extensive use of compilable C code fragments demonstrates the many transaction processing algorithms presented in the book. The book will be valuable to anyone interested in implementing distributed systems or client/server architectures.

Fuzzy Modeling and Genetic Algorithms for Data Mining and Exploration - Earl Cox 2005-02-24
Fuzzy Modeling and Genetic Algorithms for Data Mining and Exploration is a handbook for analysts, engineers, and managers involved in developing data mining models in business and government. As you'll discover, fuzzy systems are extraordinarily valuable tools for representing and manipulating all kinds of data, and genetic algorithms and evolutionary programming techniques drawn from biology provide the most effective means for designing and tuning these systems. You don't need a background in fuzzy modeling or genetic algorithms to benefit, for this book provides it, along with detailed instruction in methods that you can immediately put to work in your own projects. The author provides many diverse

examples and also an extended example in which evolutionary strategies are used to create a complex scheduling system. Written to provide analysts, engineers, and managers with the background and specific instruction needed to develop and implement more effective data mining systems Helps you to understand the trade-offs implicit in various models and model architectures Provides extensive coverage of fuzzy SQL querying, fuzzy clustering, and fuzzy rule induction Lays out a roadmap for exploring data, selecting model system measures, organizing adaptive feedback loops, selecting a model configuration, implementing a working model, and validating the final model In an extended example, applies evolutionary programming techniques to solve a complicated scheduling problem Presents examples in C, C++, Java, and easy-to-understand pseudo-code Extensive online component, including sample code and a complete data mining workbench
Physical Database Design - Sam S. Lightstone

2010-07-26
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!

The Object Data Standard - Roderic Geoffrey Galton Cattell 2000
ODMG is a widely accepted standard for object database modelling; every year more companies implement it. ODMG 3.0 integrates programming languages with databases and ensures the portability of applications across platforms and DBMS products

Joe Celko's Analytics and OLAP in SQL - Joe Celko 2010-07-26

Joe Celko's Analytics and OLAP in SQL is the first book that teaches what SQL programmers need in order to successfully make the transition from On-Line Transaction Processing (OLTP) systems into the world of On-Line Analytical Processing (OLAP). This book is not an in-depth look at particular subjects, but an overview of many subjects that will give the working RDBMS programmers a map of the terra incognita they will face — if they want to grow. It contains expert advice from a noted SQL authority and award-winning columnist, who has given ten years of service to the ANSI SQL standards committee and many more years of dependable help to readers of online forums. It offers real-world insights and lots of practical examples. It covers the OLAP extensions in SQL-99; ETL tools, OLAP features supported in DBMSs, other query tools, simple reports, and statistical software. This book is ideal for experienced SQL programmers who have worked with OLTP systems who need to learn techniques—and even

some tricks—that they can use in an OLAP situation. Expert advice from a noted SQL authority and award-winning columnist, who has given ten years of service to the ANSI SQL standards committee and many more years of dependable help to readers of online forums First book that teaches what SQL programmers need in order to successfully make the transition from transactional systems (OLTP) into the world of data warehouse data and OLAP Offers real-world insights and lots of practical examples Covers the OLAP extensions in SQL-99; ETL tools, OLAP features supported in DBMSs, other query tools, simple reports, and statistical software

A Complete Guide to DB2 Universal Database - Don Chamberlin 1998-06
This is a guide designed to familiarize users with the DB2 standard while helping to optimize their use of the technology

Principles of Transaction Processing Philip A. Bernstein 2009-07-24

Principles of Transaction Processing is a comprehensive guide to developing applications, designing systems, and evaluating engineering products. The book provides detailed discussions of the internal workings of transaction processing systems, and it discusses how these systems work and how best to utilize them. It covers the architecture of Web Application Servers and transactional communication paradigms. The book is divided into 11 chapters, which cover the following: Overview of transaction processing application and system structure Software abstractions found in transaction processing systems Architecture of multitier applications and the functions of transactional middleware and database servers Queued transaction processing and its internals, with IBM's Websphere MQ and Oracle's Stream AQ as examples Business process management and its mechanisms Description of the two-phase locking function, B-tree locking and multigranularity locking used in SQL database

systems and nested transaction locking System recovery and its failures Two-phase commit protocol Comparison between the tradeoffs of replicating servers versus replication resources Transactional middleware products and standards Future trends, such as cloud computing platforms, composing scalable systems using distributed computing components, the use of flash storage to replace disks and data streams from sensor devices as a source of transaction requests. The text meets the needs of systems professionals, such as IT application programmers who construct TP applications, application analysts, and product developers. The book will also be invaluable to students and novices in application programming. Complete revision of the classic "non mathematical" transaction processing reference for systems professionals. Updated to focus on the needs of transaction processing via the Internet-- the main focus of business data processing investments, via web application servers, SOA, and important new TP standards. Retains the practical, non-mathematical, but thorough conceptual basis of the first edition.

Active Database Systems - Jennifer Widom 1995-09
Active database systems enhance traditional database functionality with powerful rule-processing capabilities, providing a uniform and efficient mechanism for many database system applications. Among these applications are integrity constraints, views, authorization, statistics gathering, monitoring and alerting, knowledge-based systems, expert systems, and workflow management. This significant collection focuses on the most prominent research projects in active database systems. The project leaders for each prototype system provide detailed discussions of their projects and the relevance of their results to the future of active database systems. Features: A broad overview of current active database systems and how they can be extended and improved A

comprehensive introduction to the core topics of the field, including its motivation and history Coverage of active database (trigger) capabilities in commercial products Discussion of forthcoming standards

Transactional Information Systems - Gerhard Weikum 2002
This book describes the theory, algorithms, and practical implementation techniques behind transaction processing in information technology systems.

Database Tuning - Dennis Shasha 2002-06-07
Tuning your database for optimal performance means more than following a few short steps in a vendor-specific guide. For maximum improvement, you need a broad and deep knowledge of basic tuning principles, the ability to gather data in a systematic way, and the skill to make your system run faster. This is an art as well as a science, and Database Tuning: Principles, Experiments, and Troubleshooting Techniques will help you develop portable skills that will allow you to tune a wide variety of database systems on a multitude of hardware and operating systems. Further, these skills, combined with the scripts provided for validating results, are exactly what you need to evaluate competing database products and to choose the right one. Forward by Jim Gray, with invited chapters by Joe Celko and Alberto Lerner Includes industrial contributions by Bill McKenna (RedBrick/Informix), Hany Saleeb (Oracle), Tim Shetler (TimesTen), Judy Smith (Deutsche Bank), and Ron Yorita (IBM) Covers the entire system environment: hardware, operating system, transactions, indexes, queries, table design, and application analysis Contains experiments (scripts available on the author's site) to help you verify a system's effectiveness in your own environment Presents special topics, including data warehousing, Web support, main memory databases, specialized databases, and financial time series Describes performance-monitoring techniques that will help you

recognize and troubleshoot problems

Advanced SQL:1999 - Jim Melton 2003
This guide documents SQL: 1999Us advanced features in the same practical, "programmercentric" way that the first volume documented the language's basic features. This is no mere representation of the standard, but rather authoritative guidance on making an application conform to it, both formally and effectively.

Joe Celko's SQL Puzzles and Answers - Joe Celko 2006-10-09
Joe Celko's SQL Puzzles and Answers, Second Edition, challenges you with his trickiest puzzles and then helps solve them with a variety of solutions and explanations. Author Joe Celko demonstrates the thought processes that are involved in attacking a problem from an SQL perspective to help advanced database programmers solve the puzzles you frequently face. These techniques not only help with the puzzle at hand, but also help develop the mindset needed to solve the many difficult SQL puzzles you face every day. This updated edition features many new puzzles; dozens of new solutions to puzzles; and new chapters on temporal query puzzles and common misconceptions about SQL and RDBMS that leads to problems. This book is recommended for database programmers with a good knowledge of SQL. A great collection of tricky SQL puzzles with a variety of solutions and explanations Uses the proven format of puzzles and solutions to provide a user-friendly, practical look into SQL programming problems - many of which will help users solve their own problems New edition features: Many new puzzles added!, Dozens of new solutions to puzzles, and using features in SQL-99, Code is edited to conform to SQL STYLE rules, New chapter on temporal query puzzles, New chapter on common misconceptions about SQL and RDBMS that leads to problems

Mining the Web - Soumen Chakrabarti 2002-10-16

Mining the Web: Discovering Knowledge from Hypertext Data is the first book devoted entirely to techniques for producing knowledge from the vast body of unstructured Web data. Building on an initial survey of infrastructural issues—including Web crawling and indexing—Chakrabarti examines low-level machine learning techniques as they relate specifically to the challenges of Web mining. He then devotes the final part of the book to applications that unite infrastructure and analysis to bring machine learning to bear on systematically acquired and stored data. Here the focus is on results: the strengths and weaknesses of these applications, along with their potential as foundations for further progress. From Chakrabarti's work—painstaking, critical, and forward-looking—readers will gain the theoretical and practical understanding they need to contribute to the Web mining effort. * A comprehensive, critical exploration of statistics-based attempts to make sense of Web Mining. * Details the special challenges associated with analyzing unstructured and semi-structured data. * Looks at how classical Information Retrieval techniques have been modified for use with Web data. * Focuses on today's dominant learning methods: clustering and classification, hyperlink analysis, and supervised and semi-supervised learning. * Analyzes current applications for resource discovery and social network analysis. * An excellent way to introduce students to especially vital applications of data mining and machine learning technology.

Advanced Database Systems- Carlo Zaniolo 1997-05
The database field has experienced a rapid and incessant growth since the development of relational databases. The progress in database systems and applications has produced a diverse landscape of specialized technology areas that have often become the exclusive domain of research specialists. Examples include active

databases, temporal databases, object-oriented databases, deductive databases, imprecise reasoning and queries, and multimedia information systems. This book provides a systematic introduction to and an in-depth treatment of these advanced database areas. It supplies practitioners and researchers with authoritative coverage of recent technological advances that are shaping the future of commercial database systems and intelligent information systems. Advanced Database Systems was written by a team of six leading specialists who have made significant contributions to the development of the technology areas covered in the book. Benefiting from the authors' long experience teaching graduate and professional courses, this book is designed to provide a gradual introduction to advanced research topics and includes many examples and exercises to support its use for individual study, desk reference, and graduate classroom teaching.