Data Management Databases And Organizations

Data mining of massive data sets is transforming the way we think about crisis response, marketing, entertainment, cybersecurity and national intelligence. Collections of documents, images, videos, and networks are being thought of not merely as bit strings to be stored, indexed, and retrieved, but as potential sources of discovery and knowledge, requiring sophisticated analysis techniques that go far beyond classical indexing and keyword counting, aiming to find relational and semantic interpretations of the phenomena underlying the data. Frontiers in Massive Data Analysis examines the frontier of analyzing massive amounts of data, whether in a static database or streaming through a system. Data at that scale--terabytes and petabytes--is increasingly common in science (e.g., particle physics, remote sensing, genomics), Internet commerce, business analytics, national security, communications, and elsewhere. The tools that work to infer knowledge from data at smaller scales do not necessarily work, or work well, at such massive scale. New tools, skills, and approaches are necessary, and this report identifies many of them, plus promising research directions to explore. Frontiers in Massive Data Analysis discusses pitfalls in trying to infer knowledge from massive data, and it characterizes seven major classes of computation that are common in the analysis of massive data. Overall, this report illustrates the cross-disciplinary knowledge--from computer science, statistics, machine learning, and application disciplines--that must be brought to bear to make useful inferences from massive data.

Defining a set of guiding principles for data management and describing how these principles can be applied within data management functional areas; Providing a functional framework for the implementation of enterprise data management practices; including widely adopted practices, methods and techniques, functions, roles, deliverables and metrics; Establishing a common vocabulary for data management concepts and serving as the basis for best practices for data management professionals. DAMA-DMBOK2 provides data management and IT professionals, executives, knowledge workers, educators, and researchers with a framework to manage their data and mature their information infrastructure, based on these principles: Data is an asset with unique properties; The value of data can be and should be expressed in economic terms; Managing data means managing the quality of data; It takes metadata to manage data; It takes planning to manage data; Data management is cross-functional and requires a range of skills and expertise; Data management requires an enterprise perspective; Data management must account for a range of perspectives; Data management is data lifecycle management; Different types of data have different lifecycle requirements; Managing data includes managing risks associated with data; Data management requirements must drive information technology decisions; Effective data management requires leadership commitment.

A thorough reference on database administration outlines a variety of DBA roles and responsibilities and discusses such topics as data modeling and normalization, database/application design, change management, database security and data integrity, performance issues, disaster planning, and other essentials. Original. (Advanced)

A comprehensive guide to everything scientists need to know about data management, this book is essential for researchers who need to learn how to organize, document and take care of their own data. Researchers in all disciplines are faced with the challenge of managing the growing amounts of digital data that are the foundation of their research. Kristin Briney offers practical advice and clearly explains policies and principles, in an accessible and in-depth text that will allow researchers to understand and achieve the goal of better research data management. Data Management for Researchers includes sections on: * The data problem – an introduction to the growing importance and challenges of using digital data in research. Covers both the inherent problems with managing digital information, as well as how the research landscape is changing to give more value to research datasets and code. * The data lifecycle – a framework for data's place within the research process and how data's role is changing. Greater emphasis on data sharing and data reuse will not only change the way we conduct research but also how we manage research data. * Planning for data management – covers the many aspects of data management and how to put them together in a data management plan. This section also includes sample data management plans. * Documenting your data – an often overlooked part of the data management process, but one that is critical to good management; data without documentation are frequently unusable. * Organizing your data – explains how to keep your data in order using organizational systems and file naming conventions. This section also covers using a database to organize and analyze content. * Improving data analysis – covers managing information through the analysis process. This section starts by comparing the management of raw and analyzed data and then describes ways to make analysis easier, such as spreadsheet best practices. It also examines practices for research code, including version control systems. * Managing secure and private data – many researchers are dealing with data that require extra security. This section outlines what data falls into this category and some of the policies that apply, before addressing the best practices for keeping data secure. * Short-term storage – deals with the practical matters of storage and backup and covers the many options available. This section also goes through the best practices to insure that data are not lost. * Preserving and archiving your data – digital data can have a long life if properly cared for. This section covers managing data in the long term including choosing good file formats and media, as well as determining who will manage the data after the end of the project. * Sharing/publishing your data – addresses how to make data sharing across research groups easier, as well as how and why to publicly share data. This section covers intellectual property and licenses for datasets, before ending with the altmetrics that measure the impact of publicly shared data. * Reusing data – as more data are shared, it becomes possible to use outside data in your research. This chapter discusses strategies for finding datasets and lays out how to cite data once you have found it. This book is designed for active scientific researchers but it is useful for anyone who wants to get more from their data: academics, educators, professionals or anyone who teaches data management, sharing and preservation. "An excellent practical treatise on the art and practice of data management, this book is essential to any researcher, regardless of subject or discipline." —Robert Buntrock, Chemical Information Bulletin

This book focuses on the analytic principles of business practice and big data. Specifically, it provides an interface between the main disciplines of engineering/technology and the organizational and administrative aspects of management, serving as a complement to books in other disciplines such as economics, finance, marketing and risk analysis. The contributors present their areas of expertise, together with essential case studies that illustrate the successful application of engineering management theories in real-life examples.

Zygiaris provides an accessible walkthrough of all technological advances of databases in the business environment. Readers learn how to design, develop, and use databases to provide business analytical reports with the three major database management systems: Microsoft Access, Oracle Express and MariaDB (formerly MySQL).

Many researchers jump from data collection directly into testing hypothesis without realizing these tests can go profoundly wrong without clean data. This book provides a clear, accessible, step-by-step process of important best practices in preparing for data collection, testing assumptions, and examining and cleaning data in order to decrease error rates and increase both the power and replicability of results. Jason W. Osborne, author of the handbook Best Practices in Quantitative Methods (SAGE, 2008) provides easily-implemented suggestions that are evidence-based and will motivate change in practice by empirically demonstrating—for each topic—the benefits of following best practices and the potential consequences of not following these guidelines.

Introductory, theory-practice balanced text teaching the fundamentals of databases to advanced undergraduates or graduate students in information systems or computer science.

What's the Return on Investment (ROI) on data management? Sound like an impossible question to answer? Not if you read this book and learn the value-added approach to managing enterprise resources

and assets. This book defines the five interrelated best practices that comprise data management, and shows you how by example to successfully communicate data management ROI to senior management. The 17 cases we share will help you to identify opportunities to introduce data management into the strategic conversations that occur in the C-suite. You will gain a new perspective regarding the stewardship of your data assets and insulate your operations from the chaos, losses and risks that result from traditional approaches to technological projects. And you will learn how to protect yourself from legal challenges resulting from outsourced information technology projects gone badly due to incorrect project sequencing and focus. With the emerging acceptance and adoption of revised performance standards, your organization will be better prepared to face the coming big data deluge! The book contains four chapters: • Chapter 1 gives a somewhat unique perspective to the practice of leveraging data. We describe the motivations and delineate the specific challenges preventing most organizations from making substantial progress in this area. • Chapter 2 presents 11 cases where leveraging data has produced positive financial results that can be presented in language of immediate interest to C-level executives. To the degree possible, we have quantified the effect that data management has had in terms that will be meaningful to them also. • Chapter 3 describes five instances taken from the authors' experiences with various governmental defense departments. The lessons in this section however can be equally applied to many non-profit and non-defense governmental organizations. • Chapter 4 speaks specifically to the interaction of data management practices, in terms of both information technology projects and legal responsibilities. Reading it can help your organization avoid a number of perils, stay out of court and better vet contractors, experts and other helpers who play a role in organization information technology development. From John Bottega Foreword: Data is the new currency. Yes, an expression that is being used quite a bit of late, but it is very relevant in discussing the importance of data and the methodologies by which we manage it. And like any currency, how we manage it determines its true value. Like any currency, it can be managed wisely, or it can be managed foolishly. It can be put to good use, or it can be squandered away. The question is – what factors determine the path that we take? How do we properly manage this asset and realize its full value and potential? In Monetizing Data Management, Peter and Juanita explore the question of how to understand and place tangible value on data and data management. They explore this question through a series of examples and real-world use cases to exemplify how the true value of data can be realized. They show how bringing together business and technology, and applying a data-centric forensic approach can turn massive amounts of data into the tools needed to improve business processes, reduce costs, and better serve the customer. Data monetization is not about turning data into money. Instead, it’s about taking information and turning it into opportunity. It’s about the need to understand the real meaning of data in order to extract value from it. And it’s about achieving this objective through a partnership with business and technology. In Monetizing Data Management, the authors demonstrate how true value can be realized from our data through improved data centric approaches.

A quick and reliable way to build proven databases for core business functions Industry experts raved about The Data Model Resource Book when it was first published in March 1997 because it provided a simple, cost-effective way to design databases for core business functions. Len Silverston has now revised and updated the hugely successful 1st Edition, while adding a companion volume to take care of more specific requirements of different businesses. This updated volume provides a common set of data models for specific core functions shared by most businesses like human resources management, accounting, and project management. These models are standardized and are easily replicated by developers looking for ways to make corporate database development more efficient and cost effective. This guide is the perfect complement to The Data Model Resource CD-ROM, which is sold separately and provides the powerful design templates discussed in the book in a ready-to-use electronic format. A free demonstration CD-ROM is available with each copy of the print book to allow you to try before you buy the full CD-ROM.

Data ManagementDatabases & OrganizationsJohn Wiley & Sons Incorporated

"Features/benefits: focus is on strategies instead of on fine details; integrates real-life anecdotes; coverage of both newly developed applications and purchased software; discusses both operational applications (transaction-oriented) and analytical applications (data warehouses); specific recommendations denoted by icons; and abundant tables, figures, and bullet lists."--Jacket.

Dealing with the volume, complexity, and diversity of data currently being generated by scientific experiments and simulations often causes scientists to waste productive time. Scientific Data Management: Challenges, Technology, and Deployment describes cutting-edge technologies and solutions for managing and analyzing vast amounts of data, helping scientists focus on their scientific goals. The book begins with coverage of efficient storage systems, discussing how to write and read large volumes of data without slowing the simulation, analysis, or visualization processes. It then focuses on the efficient data movement and management of storage spaces and explores emerging database systems for scientific data. The book also addresses how to best organize data for analysis purposes, how to effectively conduct searches over large datasets, how to successfully automate multistep scientific process workflows, and how to automatically collect metadata and lineage information. This book provides a comprehensive understanding of the latest techniques for managing data during scientific exploration processes, from data generation to data analysis. Enhanced by numerous detailed color images, it includes real-world examples of applications drawn from biology, ecology, geology, climatology, and more. Check out Dr. Shoshani discuss the book during an interview with International Science Grid This Week (iSGTW): http://www.isgtw.org/?pid=1002259

Managing Data in Motion describes techniques that have been developed for significantly reducing the complexity of managing system interfaces and enabling scalable architectures. Author April Reeve brings over two decades of experience to present a vendor-neutral approach to moving data between computing environments and systems. Readers will learn the techniques, technologies, and best practices for managing the passage of data between computer systems and integrating disparate data together in an enterprise environment. The average enterprise's computing environment is comprised of hundreds to thousands computer systems that have been built, purchased, and acquired over time. The data from these various systems needs to be integrated for reporting and analysis, shared for business transaction processing, and converted from one format to another when old systems are replaced and new systems are acquired. The management of the "data in motion" in organizations is rapidly becoming one of the biggest concerns for business and IT management. Data warehousing and conversion, real-time data integration, and cloud and "big data" applications are just a few of the challenges facing organizations and businesses today. Managing Data in Motion tackles these and other topics in a style easily understood by business and IT managers as well as programmers and architects. Presents a vendor-neutral overview of the different technologies and techniques for moving data between computer systems including the emerging solutions for unstructured as well as structured data types Explains, in non-technical terms, the architecture and components required to perform data integration Describes how to reduce the complexity of managing system interfaces and enable a scalable data architecture that can handle the dimensions of "Big Data"

As data management and integration continue to evolve rapidly, storing all your data in one place, such as a data warehouse, is no longer scalable. In the very near future, data will need to be distributed and available for several technological solutions. With this practical book, you’ll learnhow to migrate your enterprise from a complex and tightly coupled data landscape to a more flexible architecture ready for the modern world of data consumption. Executives, data architects, analytics teams, and compliance and governance staff will learn how to build a modern scalable data landscape using the Scaled Architecture, which you can introduce incrementally without a large upfront investment. Author

Piethein Strengholt provides blueprints, principles, observations, best practices, and patterns to get you up to speed. Examine data management trends, including technological developments, regulatory requirements, and privacy concerns Go deep into the Scaled Architecture and learn how the pieces fit together Explore data governance and data security, master data management, self-service data marketplaces, and the importance of metadata

Market_Desc: · Database Designers · SQL Programmers Special Features: · Includes sections on UML for data modeling, server-side scripting (PHP) for linking a database to Web server, XML, data warehousing, OLAP, and data mining About The Book: Twice recognized as one of the top ten most productive MIS researchers, Watson provides a balanced treatment of the technical and business sides of managing data. Management of data has never been more critical for organizations of any size. This book discusses the technical aspects of database design and implementation as well as the why and how of the management of databases, and the managerial issues and business philosophy behind databases.

Regional health care databases are being established around the country with the goal of providing timely and useful information to policymakers, physicians, and patients. But their emergence is raising important and sometimes controversial questions about the collection, quality, and appropriate use of health care data. Based on experience with databases now in operation and in development, Health Data in the Information Age provides a clear set of guidelines and principles for exploiting the potential benefits of aggregated health data--without jeopardizing confidentiality. A panel of experts identifies characteristics of emerging health database organizations (HDOs). The committee explores how HDOs can maintain the quality of their data, what policies and practices they should adopt, how they can prepare for linkages with computer-based patient records, and how diverse groups from researchers to health care administrators might use aggregated data. Health Data in the Information Age offers frank analysis and guidelines that will be invaluable to anyone interested in the operation of health care databases.

Information Management: Gaining a Competitive Advantage with Data is about making smart decisions to make the most of company information. Expert author William McKnight develops the value proposition for information in the enterprise and succinctly outlines the numerous forms of data storage. Information Management will enlighten you, challenge your preconceived notions, and help activate information in the enterprise. Get the big picture on managing data so that your team can make smart decisions by understanding how everything from workload allocation to data stores fits together. The practical, hands-on guidance in this book includes: Part 1: The importance of information management and analytics to business, and how data warehouses are used Part 2: The technologies and data that advance an organization, and extend data warehouses and related functionality Part 3: Big Data and NoSQL, and how technologies like Hadoop enable management of new forms of data Part 4: Pulls it all together, while addressing topics of agile development, modern business intelligence, and organizational change management Read the book cover-to-cover, or keep it within reach for a quick and useful resource. Either way, this book will enable you to master all of the possibilities for data or the broadest view across the enterprise. Balances business and technology, with non-product-specific technical detail Shows how to leverage data to deliver ROI for a business Engaging and approachable, with practical advice on the pros and cons of each domain, so that you learn how information fits together into a complete architecture Provides a path for the data warehouse professional into the new normal of heterogeneity, including NoSQL solutions

Data Architecture: From Zen to Reality explains the principles underlying data architecture, how data evolves with organizations, and the challenges organizations face in structuring and managing their data. Using a holistic approach to the field of data architecture, the book describes proven methods and technologies to solve the complex issues dealing with data. It covers the various applied areas of data, including data modelling and data model management, data quality, data governance, enterprise information management, database design, data warehousing, and warehouse design. This text is a core resource for anyone customizing or aligning data management systems, taking the Zen-like idea of data architecture to an attainable reality. The book presents fundamental concepts of enterprise architecture with definitions and real-world applications and scenarios. It teaches data managers and planners about the challenges of building a data architecture roadmap, structuring the right team, and building a long term set of solutions. It includes the detail needed to illustrate how the fundamental principles are used in current business practice. The book is divided into five sections, one of which addresses the software-application development process, defining tools, techniques, and methods that ensure repeatable results. Data Architecture is intended for people in business management involved with corporate data issues and information technology decisions, ranging from data architects to IT consultants, IT auditors, and data administrators. It is also an ideal reference tool for those in a higher-level education process involved in data or information technology management. Presents fundamental concepts of enterprise architecture with definitions and real-world applications and scenarios Teaches data managers and planners about the challenges of building a data architecture roadmap, structuring the right team, and building a long term set of solutions Includes the detail needed to illustrate how the fundamental principles are used in current business practice

A comprehensive survey of the foundational models and recent research trends in access control models and mechanisms for database management systems.

In this book, you will find discussions on the newest native XML databases, along with information on working with XML-enabled relational database systems. In addition, XML Data Management thoroughly examines benchmarks and analysis techniques for performance of XML databases. This book is best used by students that are knowledgeable in database technology and are familiar with XML.

The latest techniques for building a customer-focused enterprise environment "The authors have appreciated that MDM is a complex multidimensional area, and have set out to cover each of these dimensions in sufficient detail to provide adequate practical guidance to anyone implementing MDM. While this necessarily makes the book rather long, it means that the authors achieve a comprehensive treatment of MDM that is lacking in previous works." -- Malcolm Chisholm, Ph.D., President, AskGet.com Consulting, Inc. Regain control of your master data and maintain a master-entity-centric enterprise data framework using the detailed information in this authoritative guide. Master Data Management and Data Governance, Second Edition provides up-to-date coverage of the most current architecture and technology views and system development and management methods. Discover how to construct an MDM business case and roadmap, build accurate models, deploy data hubs, and implement layered security policies. Legacy system integration, cross-industry challenges, and regulatory compliance are also covered in this comprehensive volume. Plan and implement enterprise-scale MDM and Data Governance solutions Develop master data model Identify, match, and link master records for various domains through entity resolution Improve efficiency and maximize integration using SOA and Web services Ensure compliance with local, state, federal, and international regulations Handle security using authentication, authorization, roles, entitlements, and encryption Defend against identity theft, data compromise, spyware attack, and worm infection Synchronize components and test data quality and system performance

Complete coverage of database management with the correct balance of business and technical material for the MIS professional. This book covers the technical aspects of database design and implementation, with an equal emphasis on the "why" and "how" of the management of databases, and the managerial uses and philosophy behind databases.

The Handbook provides practitioners, scientists and graduate students with a good overview of basic notions, methods and techniques, as well as important issues and trends across the broad spectrum of data management. In particular, the book covers fundamental topics in the field such as distributed databases, parallel databases, advanced databases, object-oriented databases, advanced transaction management, workflow management, data warehousing, data mining, mobile computing, data integration and the Web. Summing up, the Handbook is a valuable source of information for academics and practitioners who are interested in learning the key ideas in the considered area.

"Addresses the evolution of database management, technologies and applications along with the progress and endeavors of new research areas."--P. xiii.

Data modeling and SQL - these are the data management skills that are in demand in today's job market. That's why Richard Watson's fifth edition of Data Management: Databases and Organizations offers in-depth, fully integrated coverage of data modeling and SQL, and a broad managerial perspective. Updated with the latest developments in the field, the fifth edition will help you design and create relational databases, formulate complex SQL queries, understand OLAP, use SQL with Java, learn how to use XML, and prepare yourself for the real world of data management.

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.

A Primer in Financial Data Management describes concepts and methods, considering financial data management, not as a technological challenge, but as a key asset that underpins effective business management. This broad survey of data management in financial services discusses the data and process needs from the business user, client and regulatory perspectives. Its non-technical descriptions and insights can be used by readers with diverse interests across the financial services industry. The need has never been greater for skills, systems, and methodologies to manage information in financial markets. The volume of data, the diversity of sources, and the power of the tools to process it massively increased. Demands from business, customers, and regulators on transparency, safety, and above all, timely availability of high quality information for decision-making and reporting have grown in tandem, making this book a must read for those working in, or interested in, financial management. Focuses on ways information management can fuel financial institutions’ processes, including regulatory reporting, trade lifecycle management, and customer interaction Covers recent regulatory and technological developments and their implications for optimal financial information management Views data management from a supply chain perspective and discusses challenges and opportunities, including big data technologies and regulatory scrutiny

A glossary of over 2,000 terms which provides a common data management vocabulary for IT and Business professionals, and is a companion to the DAMA Data Management Body of Knowledge (DAMA-DMBOK). This glossary is a physical book – it also comes in electronic format as a CD-ROM (see ISBN 9781935504115). Topics include: • Analytics & Data Mining • Architecture • Artificial Intelligence • Business Analysis • DAMA & Professional Development • Databases & Database Design • Database Administration • Data Governance & Stewardship • Data Management • Data Modeling • Data Movement & Integration • Data Quality Management • Data Security Management • Data Warehousing & Business Intelligence • Document, Record & Content Management • Finance & Accounting • Geospatial Data • Knowledge Management • Marketing & Customer Relationship Management • Meta Data Management • Multi-dimensional & OLAP • Normalization • Object-Orientation • Parallel Database Processing • Planning • Process Management • Project Management • Reference & Master Data Management • Semantic Modeling • Software Development • Standards Organizations • Structured Query Language (SQL) • XML Development

This book covers the practical aspects of database design, data cleansing, data analysis, and data protection, among others. The focus is on what you really need to know to create the right database for your small business and to leverage it most effectively to spur growth and revenue. Databases for Small Business is a practical handbook for entrepreneurs, managers, staff, and professionals in small organizations who are not IT specialists but who recognize the need to ramp up their small organizations’ use of data and to round out their own business expertise and office skills with basic database proficiency. Anna Manning—a data scientist who has worked on database design and data analysis in a computer science university research lab, her own small business, and a nonprofit—walks you through the progression of steps that will enable you to extract

actionable intelligence and maximum value from your business data in terms of marketing, sales, customer relations, decision making, and business strategy. Dr. Manning illustrates the steps in the book with four running case studies of a small online business, an engineering startup, a small legal firm, and a nonprofit organization. Databases for Small Business teaches non-techie entrepreneurs and professionals how to: Design a small business database from scratch Extract the maximum profit from your data Follow guidance on data protection law Effectively use data collection and data cleansing techniques Train staff to leverage your data

The Only Complete Technical Primer for MDM Planners, Architects, and Implementers Companies moving toward flexible SOA architectures often face difficult information management and integration challenges. The master data they rely on is often stored and managed in ways that are redundant, inconsistent, inaccessible, non-standardized, and poorly governed. Using Master Data Management (MDM), organizations can regain control of their master data, improve corresponding business processes, and maximize its value in SOA environments. Enterprise Master Data Management provides an authoritative, vendor-independent MDM technical reference for practitioners: architects, technical analysts, consultants, solution designers, and senior IT decisionmakers. Written by the IBM® data management innovators who are pioneering MDM, this book systematically introduces MDM's key concepts and technical themes, explains its business case, and illuminates how it interrelates with and enables SOA. Drawing on their experience with cutting-edge projects, the authors introduce MDM patterns, blueprints, solutions, and best practices published nowhere else—everything you need to establish a consistent, manageable set of master data, and use it for competitive advantage. Coverage includes How MDM and SOA complement each other Using the MDM Reference Architecture to position and design MDM solutions within an enterprise Assessing the value and risks to master data and applying the right security controls Using PIM-MDM and CDI-MDM Solution Blueprints to address industry-specific information management challenges Explaining MDM patterns as enablers to accelerate consistent MDM deployments Incorporating MDM solutions into existing IT landscapes via MDM Integration Blueprints Leveraging master data as an enterprise asset—bringing people, processes, and technology together with MDM and data governance Best practices in MDM deployment, including data warehouse and SAP integration

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

PART I: THE MANAGERIAL PERSPECTIVE. Managing Data. Information. PART II: DATA MODELING AND SQL. The Single Entity. The One-to-Many Relationship. The Many-to-Many Relationship. One-to-One and Recursive Relationships. Data Modeling. Normalization and Other Data Modeling Methods. The Relational Model and Relational Algebra. SQL. PART III: DATABASE ARCHITECTURES AND IMPLEMENTATIONS. Data Structure and Storage. Data Processing Architectures. Object-Oriented Data Management. Spatial and Temporal Data Management. PART IV: ORGANIZATIONAL MEMORY TECHNOLOGIES. Organizational Intelligence Technologies. The Web and Data Management. XML: Managing Data Exchange. PART V: MANAGING ORGANIZTIONAL MEMORY. Data Integrity. Data Administration. U-Commerce and Data Management. Photo Credits. Index.

This is the first book to provide an in-depth coverage of all the developments, issues and challenges in secure databases and applications. It provides directions for data and application security, including securing emerging applications such as bioinformatics, stream information processing and peer-to-peer computing. Divided into eight sections,

Recent years have seen a dramatic growth of natural language text data, including web pages, news articles, scientific literature, emails, enterprise documents, and social media such as blog articles, forum posts, product reviews, and tweets. This has led to an increasing demand for powerful software tools to help people analyze and manage vast amounts of text data effectively and efficiently. Unlike data generated by a computer system or sensors, text data are usually generated directly by humans, and are accompanied by semantically rich content. As such, text data are especially valuable for discovering knowledge about human opinions and preferences, in addition to many other kinds of knowledge that we encode in text. In contrast to structured data, which conform to well-defined schemas (thus are relatively easy for computers to handle), text has less explicit structure, requiring computer processing toward understanding of the content encoded in text. The current technology of natural language processing has not yet reached a point to enable a computer to precisely understand natural language text, but a wide range of statistical and heuristic approaches to analysis and management of text data have been developed over the past few decades. They are usually very robust and can be applied to analyze and manage text data in any natural language, and about any topic. This book provides a systematic introduction to all these approaches, with an emphasis on covering the most useful knowledge and skills required to build a variety of practically useful text information systems. The focus is on text mining applications that can help users analyze patterns in text data to extract and reveal useful knowledge. Information retrieval systems, including search engines and recommender systems, are also covered as supporting technology for text mining applications. The book covers the major concepts, techniques, and ideas in text data mining and information retrieval from a practical viewpoint, and includes many hands-on exercises designed with a companion software toolkit (i.e., MeTA) to help readers learn how to apply techniques of text mining and information retrieval to real-world text data and how to experiment with and improve some of the algorithms for interesting application tasks. The book can be used as a textbook for a computer science undergraduate course or a reference book for practitioners working on relevant problems in analyzing and managing text data.