Chapter 3 Distributed Database Design Unibz

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Data Management SystemsMCSE SQL Server 2000 Database Design and ImplementationEnterprise Architectures and Digital AdministrationConcurrency Control in Distributed Database SystemsBusiness Database TechnologySystem Design ActivitiesAdvances in Computer Science and Information TechnologyInformation SystemsProgramming Distributed SystemsDatabase Modeling and DesignIntroduction to Database SystemsDistributed Data BasesCode of Federal RegulationsPrinciples of Distributed Database SystemsDesigning Data-Intensive ApplicationsDatabase Support for Workflow ManagementDistributed Data Fusion for Network-Centric OperationsDatabase Systems: Design, Implementation, & ManagementAnalysis and Synthesis of Distributed Real-Time Embedded SystemsProceedings of the Fourth Berkeley Conference on Distributed Data Management and Computer Networks, August 28-30, 1979, Lawrence Berkeley Laboratory, University of California, BerkeleyInductive Logic ProgrammingThe Definitive Guide to Scaling Out SQL Server 2005 EditionDatabase SystemsE-Business and Distributed Systems HandbookDatabase SystemsTechnical Abstract BulletinAgent Computing and Multi-Agent SystemsFuture Databases '92Advances in Information Systems ScienceData Intensive Distributed Computing: Challenges and Solutions for Large-scale Information ManagementDistributed Database SystemsFundamental Algorithms for Concurrency Control in Distributed Database SystemsRelevant Query Answering Over Streaming and Distributed DataObject Management in Distributed Database Systems for Stationary and Mobile Computing EnvironmentsModern ManufacturingDistributed Database Management SystemsDistributed and Multi-database SystemsOracle Design: The Definitive GuideDatabase Design and Development Readers gain a solid foundation in database design and implementation with the practical and easy-to-understand approach in DATABASE SYSTEMS: DESIGN, IMPLEMENTATION, AND MANAGEMENT, 12E. Filled with diagrams, illustrations, and tables, this market-leading text provides in-depth coverage of database design. Readers learn the key to successful database implementation: proper design of databases to fit within a larger strategic view of the data environment. Renowned for its clear, straightforward writing style, this text provides an outstanding balance of theory and practice. Updates include the latest coverage of cloud data services and a new chapter on Big Data Analytics and NoSQL, including related Hadoop technologies. In addition, new review questions, problem sets, and cases offer multiple opportunities to test understanding and develop useful design skills. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.MCAD/MCSD/MCSE Training Guide (70-229): SQL Server 2000 Database Design and Implementation is the perfect study guide to help you pass the 70-229 exam, which is an elective for the MCSD, MCAD, MCDBA, and MCSE programs. If you are preparing for this exam, you'll find our Training Guide to be the most effective self-study tool in the market! This book is your one-stop shop because of its teaching methodology, the accompanying PrepLogic testing software, and superior Web site support at www.examcram.com. The book follows the exam objectives and features numerous exercises to give you hands-on opportunities, exam tips that give you advice for test day, and warnings that alert you to possible mistakes. The Fast Facts section condenses the most important information for last-minute review, and the practice exam is representative of the actual exam. Each book in the Training Guide series is published under the direction of Series Editor Ed Tittel,
the leading authority on IT certification. This book has been subjected to rigorous technical review by a team of industry experts, ensuring content is superior in both coverage and technical accuracy, and has earned the distinction of Cramsession Approved Study Material. The CD features PrepLogic Practice Tests, Preview Edition. This product includes one complete PrepLogic Practice Test with approximately the same number of questions found on the actual vendor exam. Each question contains full, detailed explanations of the correct and incorrect answers. The engine offers two study modes, Practice Test and Flash Review, full exam customization, and a detailed score report. Manufacturers worldwide are faced with unprecedented challenges from international competition, changing production processes and technologies, shorter production life-cycles, market globalization and environmental requirements. Fundamental to meeting these challenges is the understanding and control of information across all stages of the Computer Integrated Manufacturing (CIM) process. Modern Manufacturing presents the state of the art in the information-oriented aspects of CIM and Intelligent Manufacturing Systems. Particular emphasis is placed on the impact of new software engineering technologies, the object-oriented approach, database design, hierarchical control and intelligent systems. The contributions are written by experts from Europe and the USA. This volume represents a valuable collective contribution to the research and development of database systems. It contains papers in a variety of topics such as data models, distributed databases, multimedia databases, concurrency control, hypermedia and document processing, user interface, query processing and database applications. Contents: Introduction to SQL/X (W Kim) An Object-Oriented Approach to Security Policies and their Access Controls for Database Management (D K Hsiao) The ESSE Project: An Overview (R Zicari et al.) The Remote-Exchange Approach to Semantic Heterogeneity in Federated Database Systems (D McLeod) A Linear Model of Distributed Query Execution Strategies (M E Orlowska & Y-C Zhang) Multimedia Data Handling in a Knowledge Representation System (E Bertino et al.) Implementation and Evaluation of a New Approach to Storage Management for Persistent Data — Towards Virtual-Memory Databases (G-Y Bai & A Makinouchi) Hyperbase System: A Structured Architecture (R Sacks-Davis et al.) A Hypermedia Document System Based on Relational Database (S Futamura et al.) Cooperative Query Answering in CoBase (Q-M Chen & W Chu) The ADKMS Knowledge Acquisition System (E Bertino et al.) Constraints for Query Optimization in Deductive Databases (J Harland & K Ramamohanarao) The Object-Oriented Database Management — A Tutorial on its Fundamentals (D K Hsiao) and other papers. Readership: Computer scientists. Zygiares 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). This volume constitutes the first of three parts of the refereed proceedings of the First International Conference on Computer Science and Information Technology, CCSIT 2010, held in Bangalore, India, in January 2011. The 59 revised full papers presented in this volume were carefully reviewed and selected. The papers are organized in topical sections on distributed and parallel systems and algorithms; DSP, image processing, pattern recognition, and multimedia; software engineering; database and data Mining; as well as soft computing, such as AI, neural networks, fuzzy systems, etc. N etwork-based computing domain unifies all best research efforts presented from single computer systems to networked systems to render overwhelming computational power for several modern day applications. Although this power is expected to grow with respect to time due to technological advancements, application
requirements impose a continuous thrust on network utilization and on the resources to deliver supreme quality of service. Strictly speaking, network-based computing domain has no confined scope and each element offers considerable challenges. Any modern day networked application strongly thrives on efficient data storage and management system, which is essentially a Database System. There have been number of books-to-date in this domain that discuss fundamental principles of designing a database system. Research in this domain is now far matured and many researchers are venturing in this domain continuously due to a wide variety of challenges posed. In this book, our domain of interest is in exposing the underlying key challenges in designing algorithms to handle unpredictable requests that arrive at a Distributed Database System (DDBS) and evaluating their performance. These requests are otherwise called as on-line requests arriving at a system to process. Transactions in an on-line Banking service, Airline Reservation system, Video-on-Demand system, etc., are few examples of on-line requests. This book constitutes the refereed proceedings of the 9th Pacific Rim International Workshop on Multi-Agents, PRIMA 2006, held in Guilin, China, in August 2006. The book presents 39 revised full papers and 57 revised short papers together with 4 invited talks, addressing subjects from theoretical and methodological issues to applications. Topics include agent models, agent architectures, agent-oriented software engineering, semantic Web service, collaboration, coordination and negotiation, and more. Information systems science is advancing in many directions with rapid strides. Many diversified ideas, methodologies, and techniques have been conceived and developed for improving the design of information systems and for inventing new methods for solving complex information problems. This volume, the seventh of a continuing series on information systems science, covers five timely topics which are in the mainstream of current interest in this growing field. In each chapter, an attempt is made to familiarize the reader with some basic background information on the advances discussed, so that this volume may be used independently or in conjunction with the previous volumes. The emphasis in this volume is centered upon diagnosis for digital systems, distributed information networks, micro computer technology, and data structures for pattern recognition. In recent years, digital systems have found widespread applications in on-line real-time processing. Such applications demand high reliability, availability, and serviceability. Reliability may be improved through the use of highly reliable parts. Improvement in integrity may be accompanied by retry operation and redundant configuration. Serviceability may be improved by making use of fault diagnosis techniques. Chapter 1 is devoted to this important subject. Fault diagnosis techniques are developed to improve serviceability and to shorten mean time for repair. Kitamura, Tashiro, and Inagaki discuss many recent methods for fault diagnosis and explain them with illustrative examples. This module of the handbook concentrates on solution architectures through components. Topics include the role of component-based web application architectures, architecture patterns, enterprise data architectures, implementation examples using XML Web Services, Sun's J2EE, and Microsoft's .NET. Distributed Database Systems (DDBS) may be defined as integrated database systems composed of autonomous local databases, geographically distributed and interconnected by a computer network. The purpose of this monograph is to present DDBS concurrency control algorithms and their related performance issues. The most recent results have been taken into consideration. A detailed analysis and selection of these results has been made so as to include those which will promote applications and progress in the field. The application of the methods and algorithms presented is not limited to DDBSs but also relates to centralized database systems and to database machines which can often be considered as particular examples of
DDBSs. The first part of the book is devoted to basic definitions and models: the distributed database model, the transaction model and the syntactic and semantic concurrency control models. The second discusses concurrency control methods in monoversion DDBSs: the locking method, the timestamp ordering method, the validation method and hybrid methods. For each method the concept, the basic algorithms, a hierarchical version of the basic algorithms, and methods for avoiding performance failures are given. The third section covers concurrency control methods in multiversion DDBSs and the fourth, methods for the semantic concurrency model. The last part concerns performance issues of DDBSs. The book is intended primarily for DDBMS designers, but is also of use to those who are engaged in the design and management of databases in general, as well as in problems of distributed system management such as distributed operating systems and computer networks. Learn the concepts, principles, design, implementation, and management issues of databases. You will adopt a methodical and pragmatic approach to solving database systems problems. Database Systems: A Pragmatic Approach provides a comprehensive, yet concise introduction to database systems, with special emphasis on the relational database model. This book discusses the database as an essential component of a software system, as well as a valuable, mission-critical corporate resource. New in this second edition is updated SQL content covering the latest release of the Oracle Database Management System along with a reorganized sequence of the topics which is more useful for learning. Also included are revised and additional illustrations, as well as a new chapter on using relational databases to anchor large, complex management support systems. There is also added reference content in the appendixes. This book is based on lecture notes that have been tested and proven over several years, with outstanding results. It combines a balance of theory with practice, to give you your best chance at success. Each chapter is organized systematically into brief sections, with itemization of the important points to be remembered. Additionally, the book includes a number of author Elvis Foster's original methodologies that add clarity and creativity to the database modeling and design experience. What You'll Learn Understand the relational model and the advantages it brings to software systems Design database schemas with integrity rules that ensure correctness of corporate data Query data using SQL in order to generate reports, charts, graphs, and other business results Understand what it means to be a database administrator, and why the profession is highly paid Build and manage web-accessible databases in support of applications delivered via a browser Become familiar with the common database brands, their similarities and differences Explore special topics such as tree-based data, hashing for fast access, distributed and object databases, and more Who This Book Is For Students who are studying database technology, who aspire to a career as a database administrator or designer, and practicing database administrators and developers desiring to strengthen their knowledge of database theory This work has been revised and updated to provide a comprehensive treatment of database design for commercial database products and their applications. The book covers the basic foundation of design as well as more advanced techniques, and also incorporates coverage of data warehousing and OLAP (On-Line Analytical Processing), data mining, object-relational, multimedia, and temporal/spatial design. This book constitutes the refereed proceedings of the 13th International Conference on Inductive Logic Programming, ILP 2003, held in Szeged, Hungary in September/October 2003. The 23 revised full papers presented were carefully reviewed and selected from 53 submissions. Among the topics addressed are multirelational data mining, complexity issues, theory revision, clustering, mathematical discovery, relational reinforcement learning, multirelational learning, inductive inference,
description logics, grammar systems, and inductive learning. The first and only database primer for today’s global economy Today’s businesses depend on their databases to provide information essential for their day-to-day operations and to help them take advantage of today’s rapidly growing and maturing electronic commerce opportunities. The primary responsibility for the design and maintenance of these databases rests with a company’s information technology department. Unlike other IT resources currently available that tend to focus on a particular product, Database Design and Development: An Essential Guide for IT Professionals was created to give today’s IT directors and other IT staff a solid basic knowledge of database design and development to help them make educated decisions about the right database environment for their companies. Today’s IT professionals must understand the fundamentals in order to determine their next steps for specializing in the vast field of database technology. Database Design and Development: An Essential Guide for IT Professionals answers such common questions as: What is the purpose of a database system? What are the components of a database system? What type of data does your company need to capture? How do you design a database for a particular goal? How do you capture information through data modeling? How do you determine which database will best meet your business objectives? What’s involved in effective database management and maintenance? How are database systems used to interface with the Internet? With more than twenty-five years of experience teaching IT courses and designing databases for some of America’s top institutions, the author has succeeded in creating an essential resource for today’s IT managers as well as for students planning a career in information technology. Distributed Database Systems discusses the recent and emerging technologies in the field of distributed database technology. The material is up-to-date, highly readable, and illustrated with numerous practical examples. The mainstream areas of distributed database technology, such as distributed database design, distributed DBMS architectures, distributed transaction management, distributed concurrency control, deadlock handling in distributed systems, distributed recovery management, distributed query processing and optimization, data security and catalog management, have been covered in detail. The popular distributed database systems, SDD-1 and R*, have also been included. Embedded computer systems are now everywhere: from alarm clocks to PDAs, from mobile phones to cars, almost all the devices we use are controlled by embedded computers. An important class of embedded computer systems is that of hard real-time systems, which have to fulfill strict timing requirements. As real-time systems become more complex, they are often implemented using distributed heterogeneous architectures. Analysis and Synthesis of Distributed Real-Time Embedded Systems addresses the design of real-time applications implemented using distributed heterogeneous architectures. The systems are heterogeneous not only in terms of hardware components, but also in terms of communication protocols and scheduling policies. Regarding this last aspect, time-driven and event-driven systems, as well as a combination of the two, are considered. Such systems are used in many application areas like automotive electronics, real-time multimedia, avionics, medical equipment, and factory systems. The proposed analysis and synthesis techniques derive optimized implementations that fulfill the imposed design constraints. An important part of the implementation process is the synthesis of the communication infrastructure, which has a significant impact on the overall system performance and cost. Analysis and Synthesis of Distributed Real-Time Embedded Systems considers the mapping and scheduling tasks within an incremental design process. To reduce the time-to-market of products, the design of real-time systems seldom starts from scratch. Typically, designers start from an already existing system, running certain applications, and the
design problem is to implement new functionality on top of this system. Supporting such an incremental design process provides a high degree of flexibility, and can result in important reductions of design costs.

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

**Database Systems: A Pragmatic Approach** is a classroom textbook for use by students who are learning about relational databases, and the professors who teach them. It discusses the database as an essential component of a software system, as well as a valuable, mission critical corporate resource. The book is based on lecture notes that have been tested and proven over several years, with outstanding results. It also exemplifies mastery of the technique of combining and balancing theory with practice, to give students their best chance at success. Upholding his aim for brevity, comprehensive coverage, and relevance, author Elvis C. Foster's practical and methodical discussion style gets straight to the salient issues, and avoids unnecessary fluff as well as an overkill of theoretical calculations. The book discusses concepts, principles, design, implementation, and management issues of databases. Each chapter is organized systematically into brief, reader-friendly sections, with itemization of the important points to be remembered. It adopts a methodical and pragmatic approach to solving database systems problems. Diagrams and illustrations also sum up the salient points to enhance learning. Additionally, the book includes a number of Foster's original methodologies that add clarity and creativity to the database modeling and design experience while making a novel contribution to the discipline. Everything combines to make Database Systems: A Pragmatic Approach an excellent textbook for students, and an excellent resource on theory for the practitioner.

**Business Database Technology** provides essential knowledge of relational database design, implementation, and applications, while providing a good balance between the core concepts and secondary concepts. It is intended for four-year college/university business students who study database technology and data resource management. Students will learn data structure techniques for databases, data models, relational database, normalization and logical database design, SQL, physical database design, database administration, database in computer networks, and data warehouse. The book highlights the most important concepts of database development, such as faultless entity-relationships diagrams and normalization process. To maintain a well-rounded approach to the topics, both fundamental knowledge about database technology and hands-on material are presented. Succinct tutorials for
professional database development projects and OLAP are also included. Covering database, code, and architecture design for the Oracle operating system, this text is arranged in four sections including an overview of Oracle and data modelling; and aspects of database design including denormalization, data types, nulls, keys and indexes. This unique new textbook on Information Systems (IS) provides an answer to a few basic questions in the field: What is the scientific nature of IS? How do we design IS in today's connected world? What is the relationship between IS and innovation in knowledge economies? Whereas mainframe corporate computers tended to dominate the thinking in the 1980s, the dominating factor today is personal digital devices that connect the world as one whole IS. Network science is emerging to describe these digital connections (e.g., social networking), and service science is similarly emerging to describe service value networks. This book therefore synthesizes the emerging network science and service science with the classic IS theory, resulting in a new set of principles for IS strategic planning. It also reviews the standard IS topics of system analysis and database design, covering the whole spectrum of databases and all the major methods and techniques of database design. The role of IS as a technological innovation in the knowledge economy is also analyzed. In doing so, new concepts such as basic values of IS, systems of IS, sustainability of IS, IS as a service system, IS as a human value network, and the hyper-network model for innovation by IS, are developed. This book examines the problem of relevant query answering over the Web and provides a comprehensive overview of relevant query answering over streaming and distributed data. In recent years, Web applications that combine highly dynamic data streams with data distributed over the Web to provide relevant answers have attracted increasing attention. Answering in a timely fashion, i.e., reactively, is one of the most important performance indicators, especially when the distributed data is evolving. The book proposes a solution that retains a local replica of the distributed data and offers various maintenance policies to refresh the replica over time. A limited refresh budget guarantees the reactivity of the system. Focusing on stream processing and Semantic Web, it appeals to scientists and graduate students in the field. With the recent proliferation of service-oriented architectures (SOA), cloud computing technologies, and distributed-interconnected systems, distributed fusion is taking on a larger role in a variety of applications—from environmental monitoring and crisis management to intelligent buildings and defense. Drawing on the work of leading experts around the world, Distributed Data Fusion for Network-Centric Operations examines the state of the art of data fusion in a distributed sensing, communications, and computing environment. Get Insight into Designing and Implementing Data Fusion in a Distributed Network Addressing the entirety of information fusion, the contributors cover everything from signal and image processing, through estimation, to situation awareness. In particular, the work offers a timely look at the issues and solutions involving fusion within a distributed network enterprise. These include critical design problems, such as how to maintain a pedigree of agents or nodes that receive information, provide their contribution to the dataset, and pass to other network components. The book also tackles dynamic data sharing within a network-centric enterprise, distributed fusion effects on state estimation, graph-theoretic methods to optimize fusion performance, human engineering factors, and computer ontologies for higher levels of situation assessment. A comprehensive introduction to this emerging field and its challenges, the book explores how data fusion can be used within grid, distributed, and cloud computing architectures. Bringing together both theoretical and applied research perspectives, this is a valuable reference for fusion researchers and practitioners. It offers guidance and insight for those
working on the complex issues of designing and implementing distributed, decentralized information fusion. System design activities provide a view of the information technology and its issues. Systems design focuses on the construction for building of new information systems, which describe, organize, as well as structure the hardware and software. With design activities as measured, is the process that addressed the structuring, organizing, and describing in-depth of how the system would work into a different organizational setting. Systems design could help with optimizing scarce computing resources in applications or system performance constraints. Also, the hardware and software played an important role in determining the way in which an application performs and the resources “bottleneck” as well. The performance of an information system is an integral part of good quality. In today’s competitive world, a business organization tries to achieve their service goals by employing systems that perform better. Knowing that your system will perform effectively increases business performance The most fundamental part of a good design, we must follow the design process approach system design. When designing and specifying an information system, we ask the question: What types of hardware, software, and network and inputs and outputs design process required? - Examining the requirements and structures bridged within the system? - The system design activities carry by the people and hardware? - The various part systems used to communicate among each other all over the organization

Database Support for Workflow Management: The WIDE Project presents the results of the ESPRIT WIDE project on advanced database support for workflow management. The book discusses the state of the art in combining database management and workflow management technology, especially in the areas of transaction and exception management. This technology is complemented by a high-level conceptual workflow model and associated workflow application design methodology. In WIDE, advanced base technology is applied, like a distributed computing model based on the corba standard. The usability of the WIDE approach is documented in this book by a discussion of two real-world applications from the insurance and health care domains.

Database Support for Workflow Management: The WIDE Project serves as an excellent reference, and may be used for advanced courses on database and workflow management systems. This book offers a practical approach to understanding and implementing distributed and multi-database systems across the enterprise. By reinforcing concepts with specific methodologies, exercises, and examples, this guide enables programmers, systems designers, and IS managers to meet the challenge of managing data across different platforms. This extremely practical book addresses real-world problems faced when migrating to distributed and multi-database architectures and includes an in-depth discussion of federated database systems and the role expert systems play in multi-database architectures. Content highlights include: Distributed Query & Transaction Processing; Concurrency and Recovery; SQL Basics; and Design & Implementation Issues. This is the first book that addresses all three main activities in improving business and technology decisions: the planning, design and assessment of enterprise architectures (EAs). Emphasis is on medium and large-size organizations in the private sector (such as banks, airlines and auto industries) and the public sector (such as federal agencies, local government organizations and military services in the Department of Defense). The book addresses the challenges faced by EA builders through an organized presentation of the issues and a step-by-step approach. The material is based on real-life EA project experience and lessons learned over a decade working in multiple-contractor, multiple-discipline teams, and multiple-agency environments. This book focuses on the challenges of distributed systems imposed by the data intensive applications, and on the different state-of-the-art
solutions proposed to overcome these challenges"--Provided by publisher. As the information contained in databases has become a critical resource in organizations, efficient access to that information and the ability to share it among different users and across different systems has become an urgent need. The interoperability of heterogeneous database systems-literally, the ability to access information between or among differing types of databases, is the topic of this timely book. In the last two decades, tremendous improvements in tools and technologies have resulted in new products that provide distributed data processing capabilities. This book describes these tools and emerging technologies, explaining the essential concepts behind the topics but focusing on practical applications. Selected products are discussed to illustrate the characteristics of the different technologies. This is an ideal source for anyone who needs a broad perspective on heterogeneous database integration and related technologies. This third edition of a classic textbook can be used to teach at the senior undergraduate and graduate levels. The material concentrates on fundamental theories as well as techniques and algorithms. The advent of the Internet and the World Wide Web, and, more recently, the emergence of cloud computing and streaming data applications, has forced a renewal of interest in distributed and parallel data management, while, at the same time, requiring a rethinking of some of the traditional techniques. This book covers the breadth and depth of this re-emerging field. The coverage consists of two parts. The first part discusses the fundamental principles of distributed data management and includes distribution design, data integration, distributed query processing and optimization, distributed transaction management, and replication. The second part focuses on more advanced topics and includes discussion of parallel database systems, distributed object management, peer-to-peer data management, web data management, data stream systems, and cloud computing. New in this Edition: • New chapters, covering database replication, database integration, multidatabase query processing, peer-to-peer data management, and web data management. • Coverage of emerging topics such as data streams and cloud computing • Extensive revisions and updates based on years of class testing and feedback Ancillary teaching materials are available. This book addresses issues related to managing data across a distributed database system. It is unique because it covers traditional database theory and current research, explaining the difficulties in providing a unified user interface and global data dictionary. The book gives implementers guidance on hiding discrepancies across systems and creating the illusion of a single repository for users. It also includes three sample frameworks—implemented using J2SE with JMS, J2EE, and Microsoft .Net—that readers can use to learn how to implement a distributed database management system. IT and development groups and computer sciences/software engineering graduates will find this guide invaluable. Copyright code: 0baac2c4db429fd20edcd0fbf4f421ef