

Fundamentals of Database Systems, 7th edition

Ramez Elmasri University of Texas at Arlington Shamkant B. Navathe Georgia Institute of Technology

Title overview Table of contents Instructor resources Author bios

Brief Contents

Part 1: Introduction to Databases

Chapter 1: Databases and Database Users

Chapter 2: Database Systems Concepts and Architecture

Part 2: Conceptual Data Modeling and Database Design

Chapter 3: Data Modeling Using the Entity Relationship (ER) Model

Chapter 4: The Enhanced Entity Relationship (EER) Model

Part 3: The Relational Data Model and SQL

Chapter 5: The Relational Data Model and Relational Database Constraints



Chapter 8: The Relational Algebra and Relational Calculus

Chapter 9: Relational Database Design by ER- and EER-to-Relational Mapping

Part 4: Database Programming Techniques

Chapter 10: Introduction to SQL Programming Techniques

Chapter 11: Web Database Programming Using PHP

Part 5: Object, Object-Relational, and XML: Concepts, Models, Languages, and Standards

Chapter 12: Object and Object-Relational Databases

Chapter 13: XLM: Extensible Markup Language

Part 6: Database Design Theory and Normalization

Chapter 14: Basics of Functional Dependencies and Normalization for Relational Databases

Chapter 15: Relational Database Design Algorithms and Further Dependencies

Part 7: File Structures, Hashing, Indexing, and Physical Database Design

Chapter 16: Disc Storage, Basic File Structures, Hashing, and Modern Storage Architectures

Chapter 17: Indexing Structures for Files and Physical Database Design

Part 8: Query Processing and Optimization

Chapter 18: Strategies for Query Processing

Chapter 19: Query Optimization

Part 9: Transaction Processing, Concurrency Control, and Recovering

Chapter 20: Introduction to Transaction Processing Concepts and Theory

Chapter 21: Concurrency Control Techniques

Chapter 22: Database Recovery Techniques

Part 10: Distributed Databases, NOSQL Systems, Cloud Computing, and Big Data



Chapter 25: Big Data Technologies Based on MapReduce and Hadoop

Part 11: Advanced Database Models, Systems, and Applications

Chapter 26: Enhanced Data Models: Introduction to Active, Temporal, Spatial, Multimedia, and Deductive Databases

Chapter 27: Introduction to Information Retrieval and Web Search

Chapter 28: Data Mining Concepts

Chapter 29: Overview of Data Warehousing and OLAP

Part 12: Additional Database Topics: Security

Chapter 30: Database Security

Appendix A: Alternative Diagrammatic Notations for ER Models

Appendix B: Parameters of Disks

Appendix C: Overview of the QBE Language

Appendix D: Overview of the Hierarchical Data Model

Appendix E: Overview of the Network Data Model

Show less