# **Brief Contents**

### Preface

## Part I Background

Chapter 1 Introduction to Databases

Chapter 2 Database Environment

Chapter 3 Database Architectures and the Web

Metheodogy-----

35

49

51

83

105

Part 2 The	<b>Relational Model and Languages</b>	147
Chapter 4	The Relational Model	149
Chapter 5	Relational Algebra and Relational Calculus	167
Chapter 6	SQL: Data Manipulation	191
Chapter 7	SQL: Data Definition	233
Chapter 8	Advanced SQL	271
Chapter 9	Object-Relational DBMSs	291
Part 3 Database Analysis and Design 343		
Chapter 10	Database System Development Lifecycle	345
Chapter 11	Database Analysis and the DreamHome Case Study	375
Chapter 12	Entity-Relationship Modeling	405
Chapter 13	Enhanced Entity-Relationship Modeling	433
Chapter 14	Normalization	451
Chapter 15	Advanced Normalization	481
Part 4 Methodology		501
Chapter 16	Methodology—Conceptual Database Design	503
Chapter 17	Methodology—Logical Database Design for the Relational Model	527

8

- Chapter 18 Methodology—Physical Database Design for Relational Databases
- Chapter 19 Methodology—Monitoring and Tuning the Operational System

### Part 5 Selected Database Issues

Chapter 20 Security and Administration

Chapter 21 Professional, Legal, and Ethical Issues in Data Management

Chapter 22 Transaction Management

561

585

**605** 607

641

667

Chapter 23 Query Processing

727

Part 6 Distr	ributed DBMSs and Replication	783
Chapter 24	Distributed DBMSs—Concepts and Design	785
Chapter 25	Distributed DBMSs—Advanced Concepts	831
Chapter 26	Replication and Mobile Databases	875
Part 7 Object DBMSs		939
Chapter 27	Object-Oriented DBMSs—Concepts and Design	941
Chapter 28	Object-Oriented DBMSs—Standards and Systems	995
Part 8 The Web and DBMSs		

Chapter 29 Web Technology and DBMSs

Chapter 30 Semistructured Data and XML

### Part 9 Business Intelligence

Chapter 31 Data Warehousing ConceptsChapter 32 Data Warehousing Design

Chapter 33 OLAP

Chapter 34 Data Mining

1047

1129

1221

1223

1257

1285

1315

# Appendices1329A Users' Requirements Specification for DreamHome Case StudyA-1B Other Case StudiesB-1C Alternative ER Modeling NotationsC-1D Summary of the Database Design Methodology<br/>for Relational DatabasesD-1E Introduction to Pyrrho: A Lightweight RDBMSE-1

**Brief Contents** 

**R-I** 

FR-I

IN-I

9

(Online content can be accessed using the access code available in inside front cover of this book.)

F File Organizations and Indexes (Online)	
G When Is a DBMS Relational? (Online)	G-1
H Commercial DBMSs: Access® and Oracle® (Online)	H-1
I Programmatic SQL (Online)	I-1
J Estimating Disk Space Requirements (Online)	J-1
K Introduction to Object-Oriented Concepts (Online)	K-1
L Example Web Scripts (Online)	L-1
M Query-By-Example (QBE) (Online)	
N Third Generation Manifestos (Online)	
O Postgres—An Early ORDBMS (Online)	

References Further Reading Index