

40th Anniversary Edition

FIFTEENTH EDITION

DATABASE PROCESSING

FUNDAMENTALS, DESIGN, AND IMPLEMENTATION

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Key Terms • Review Questions • Exercises

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Key Terms • Review Questions • Exercises

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Key Terms • **Review Questions** • **Exercises**

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Key Terms • **Review Questions**

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Key Terms • **Review Questions**

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How Do I Install the Java Development Kit (JDK) and the NetBeans IDE?

What Is PHP?

How Do I Install PHP?

How Do I Check PHP to Make Sure it is Running Correctly?

How Do I Create a Web Page Using the NetBeans IDE?

How Do I Manage the PHP Configuration?

Key Terms • **Review Questions** • **Exercises**

Appendix I: XML

Chapter Objectives

What Is the Purpose of This Appendix?

Extensible Markup Language (XML)

XML as a Markup Language • *Materializing XML Documents with XSLT*

XML Schema versus Document Type Declarations

XML Schema Validation • *Elements and Attributes* • *Flat Versus Structured Schemas* • *Global Elements*

Creating XML Documents from Database Data

Using the SQL SELECT ... FOR XML Statement • *Multi-table SELECT with FOR XML* • *An XML Schema for All CUSTOMER Purchases* • *A Schema with Two Multivalued Paths*

Why Is XML Important?
Additional XML Standards

Summary • Key Terms • Review Questions • Exercises

Appendix J: Business Intelligence Systems

Chapter Objectives

What Is the Purpose of This Appendix?

Business Intelligence Systems

Reporting Systems and Data Mining Applications

Reporting Systems • Data Mining Applications

The Components of a Data Warehouse

Data Warehouses and Data Marts • Data Warehouses and Dimensional Databases

Reporting Systems

OLAP • RFM Analysis • Reporting System Components • Reporting System Functions

Data Mining

Unsupervised versus Supervised Data Mining • Four Popular Data Mining Techniques

• Market Basket Analysis • Decision Trees

**Summary • Key Terms • Review Questions • Exercises • Case Questions
• The Queen Anne Curiosity Shop Project Questions • Morgan Importing
Project Questions**

Appendix K: Big Data

Chapter Objectives

What Is the Purpose of This Appendix?

What Is Big Data?

The Three Vs and the “Wanna Vs” • Big Data and NoSQL Systems • The CAP Theorem

Non-Relational Database Management Systems

Key-Value Databases • Document Databases • Column Family Databases • Graph Databases

Using a Cloud Database Management System

*Migrating an Existing Local Database to Microsoft Azure Cosmos DB • Using SQL to Create a
New Database on Microsoft Azure Cosmos DB*

Big Data, NoSQL Systems, and the Future

Summary • Key Terms • Review Questions • Exercises

Appendix L: JSON and Document Databases

Chapter Objectives

What Is the Purpose of This Appendix?

Document Database Basics

JSON Data Structuring

Introducing ArangoDB

Downloading and Installing ArangoDB

Creating Data in ArangoDB

Simple Document Examples • Complex Document Examples • Logical Design Choices

Querying Data in ArangoDB

Using HTTP • Using a Programming Language • Using ArangoDB Query Language (AQL)

Physical Design Choices in ArangoDB

Indexing • Data Distribution

Document Databases in the Cloud

*Creating a Document Database in Microsoft Azure Cosmos DB • Querying a Document
Database in Microsoft Azure Cosmos DB*

Summary • Key Terms • Review Questions • Exercises

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