Data Modeling Basics Steve Hoberman

NoSQL and SQL Data Modeling
Data Modeling Essentials
Data Modeling Master Class Training Manual 7th Edition
Data Modeling for the Business
The Data Model Toolkit
Data Warehousing And Business Intelligence For e-Commerce
Data Modeling Made Simple
Non-Invasive Data Governance
The Data Model Resource Book
Data Modeling Master Class Training Manual
Data Modeling Made Simple with CA ERwin Data Modeler R8
The Data Model Resource Book, Volume 1
Data Modeling Made Simple with Embarcadero ER/Studio Data Architect
Data Modeling for MongoDB
Data and Reality
Data Modeling, A Beginner's Guide
Data Resource Data
Data Model Patterns: A Metadata Map
Data Modeling Made Simple with erwin DM
Information Modeling and Relational Databases

The Rosedata Stone
LeadAbility: Transforming the Way We Live and
Work Together
Data Modeling Made Simple
Navigating the Labyrinth
Data Modeling Made Simple
Data Modeler's Workbench
Post Cinematic Affect
Data Modeling Made Simple with PowerDesigner
Data Modeling Master Class Training Manual
Data Model Scorecard
Data Modeling Made Simple with PowerDesigner
Data Modeling Made Simple
Data Modeling Made Simple with ER/Studio Data
Architect
Data Modeling for the Business
Data Modeling Made Simple with CA ERwin Data
Modeler r8
Data Warehousing
The Rosedata Stone: Achieving a Common
Business Language using the Business Terms
Model
SQL Clearly Explained
Data Modeling Made Simple with Erwin DM
Sport and Exercise Psychology

KAEL LEVY

*NoSQL and
SQL Data
Modeling*

Technics
Publications
This book will
provide the
business or IT
professional
with a
practical
working
knowledge of
data
modelling

concepts and best practices, and how to apply these principles with PowerDesigner. You will build many PowerDesigner data models along the way, increasing your skills in first the fundamentals and later in the book the more advanced features of PowerDesigner. The book contains six sections: Section I introduces data modelling along with its purpose and variations. Also included is an explanation of the important role of a data modelling tool, the key features required of any data modelling tool, and an introduction to the essential features of PowerDesigner; Section II explains all of the components on a data model including entities, data elements, relationships, and keys, and describes how to create and manage these objects in PowerDesigner. Also included is a discussion of the importance of quality names and definitions for your objects; Section III dives into the relational and dimensional subject area, logical, and physical data models, and describes how PowerDesigner supports these models and the connections between them. Learn how to get information into and out of PowerDesigner, and improve the quality of your data models with a

cross-reference of key PowerDesigner features with the Data Model Scorecard; Section IV contains a PowerDesigner workshop designed to consolidate everything for you; Section V focuses on additional PowerDesigner features (some of which have already been introduced) which make life easier for data modellers; Section VI discusses PowerDesigner topics beyond data modelling, including the XML physical model and the other types of model available in PowerDesigner; it also discusses the role of PowerDesigner in data management, using the DAMA Data Management Body of Knowledge (DAMA-DMBOK) framework. Data Modeling Essentials Technics Publications Master erwin DM to deliver robust and precise designs for both operational and analytical projects. Steve and Jeff start from the basics, explaining data modeling concepts and how to get up and running with erwin DM (erwin DM). Through a hands-on approach, business analysts, data professionals, and project managers will learn step-by-step how to build effective conceptual, logical, and physical data models. Complete the stages in identifying

essential business requirements, designing the logical data model, transposing those logical modeling objects into physical tables and columns, and even generating the implementation database scripts. This book contains seven parts. Part I provides a foundation in data modeling and Part II a foundation in erwin DM. Part III covers the design layer technique and its application using erwin DM, distinguishing conceptual, logical, physical, and operational data models. Part IV covers entities, domains, attributes, key groups, validation rules, default rules, and subject areas, along with how to implement them using erwin DM. Part V explains the physical data model and how to convert a logical data model to a physical data model in erwin DM. Become confident creating tables, columns, indexes, and views. Part VI reveals advanced features available within erwin DM, including user defined properties, naming standards, forward engineering, reverse engineering, complete compare, report designer, and the bulk editor. Part VII explains several important tools to use in combination with erwin DM, including

erwin DM NoSQL, erwin Data Catalog, and erwin Data Literacy. Data Modeling Master Class Training Manual 7th Edition Technics Publications Data models are the main medium used to communicate data requirements from business to IT, and within IT from analysts, modelers, and architects, to database designers and developers. Therefore it's essential to get the data model right.

But how do you determine right? That's where the Data Model Scorecard® comes in. The Data Model Scorecard is a data model quality scoring tool containing ten categories aimed at improving the quality of your organization's data models. Many of my consulting assignments are dedicated to applying the Data Model Scorecard to my client's data models – I will show you how to apply the Scorecard

in this book. This book, written for people who build, use, or review data models, contains the Data Model Scorecard template and an explanation along with many examples of each of the ten Scorecard categories. There are three sections: In Section I, Data Modeling and the Need for Validation, receive a short data modeling primer in Chapter 1, understand why it is

important to get the data model right in Chapter 2, and learn about the Data Model Scorecard in Chapter 3. In Section II, Data Model Scorecard Categories, we will explain each of the ten categories of the Data Model Scorecard. There are ten chapters in this section, each chapter dedicated to a specific Scorecard category: · Chapter 4: Correctness · Chapter 5: Completeness · Chapter 6: Scheme · Chapter 7: Structure · Chapter 8: Abstraction · Chapter 9: Standards · Chapter 10: Readability · Chapter 11: Definitions · Chapter 12: Consistency · Chapter 13: Data In Section III, Validating Data Models, we will prepare for the model review (Chapter 14), cover tips to help during the model review (Chapter 15), and then review a data model based upon an actual project (Chapter 16). **Data Modeling for the Business** Technics Publications Llc Creating a precise diagram of business terms within your projects is a simple yet powerful communication tool for project managers, data governance professionals, and business analysts. Similar to how the Rosetta Stone provided a communication tool across multiple

languages, the Rosedata Stone provides a communication tool across business languages. The Rosedata Stone, called the Business Terms Model (BTM) or the Conceptual Data Model, displays the achievement of a Common Business Language of terms for a particular business initiative. With more and more data being created and used, combined with intense competition, strict regulations, and rapid-spread social media, the financial, liability, and credibility stakes have never been higher and therefore the need for a Common Business Language has never been greater. Appreciate the power of the BTM and apply the steps to build a BTM over the book's five chapters: Challenges. Explore how a Common Business Language is more important than ever with technologies like the Cloud and NoSQL, and Regulations such as the GDPR. Needs. Identify scope and plan precise, minimal visuals that will capture the Common Business Language. Solution. Meet the BTM and its components, along with the variations of relational and dimensional BTMs. Experience how several data modeling tools display the BTM, including

CaseTalk, ER/Studio, erwin DM, and Hackolade. Construction. Build operational (relational) and analytics (dimensional) BTMs for a bakery chain. Practice. Reinforce BTM concepts and build BTMs for two of your own initiatives alongside a real example. **The Data Model Toolkit** Technics Publications Build a working knowledge of data modeling concepts and best practices, along with how to apply these principles with ER/Studio. This second edition includes numerous updates and new sections including an overview of ER/Studio's support for agile development, as well as a description of some of ER/Studio's newer features for NoSQL, such as MongoDB's containment structure. *Data Warehousing And Business Intelligence For e-Commerce* Technics Publications Llc Data Resource Data provides the complete detailed data resource model for understanding and managing data as a critical resource of the organization. **Data Modeling Made Simple** Technics Publications Congratulations! You completed the MongoDB application within the given tight timeframe and there is a party to celebrate your

application's release into production. Although people are congratulating you at the celebration, you are feeling some uneasiness inside. To complete the project on time required making a lot of assumptions about the data, such as what terms meant and how calculations are derived. In addition, the poor documentation about the application will be of limited use to the support team, and not investigating all of the inherent rules in the data may eventually lead to poorly-performing structures in the not-so-distant future. Now, what if you had a time machine and could go back and read this book. You would learn that even NoSQL databases like MongoDB require some level of data modeling. Data modeling is the process of learning about the data, and regardless of technology, this process must be performed for a successful application. You would learn the value of conceptual, logical, and physical data modeling and how each stage increases our knowledge of the data and reduces assumptions and poor design decisions. Read this book to learn how to do data modeling for MongoDB applications, and accomplish

these five objectives: Understand how data modeling contributes to the process of learning about the data, and is, therefore, a required technique, even when the resulting database is not relational. That is, NoSQL does not mean NoDataModeling! Know how NoSQL databases differ from traditional relational databases, and where MongoDB fits. Explore each MongoDB object and comprehend how each compares to their data modeling and traditional relational database counterparts, and learn the basics of adding, querying, updating, and deleting data in MongoDB. Practice a streamlined, template-driven approach to performing conceptual, logical, and physical data modeling. Recognize that data modeling does not always have to lead to traditional data models! Distinguish top-down from bottom-up development approaches and complete a top-down case study which ties all of the modeling techniques together. This book is written for anyone who is working with, or will be working with MongoDB, including business analysts, data modelers, database administrators, developers, project managers, and data scientists.

There are three sections: In Section I, Getting Started, we will reveal the power of data modeling and the tight connections to data models that exist when designing any type of database (Chapter 1), compare NoSQL with traditional relational databases and where MongoDB fits (Chapter 2), explore each MongoDB object and comprehend how each compares to their data modeling and traditional relational database counterparts (Chapter 3), and explain the basics of adding, querying, updating, and deleting data in MongoDB (Chapter 4). In Section II, Levels of Granularity, we cover Conceptual Data Modeling (Chapter 5), Logical Data Modeling (Chapter 6), and Physical Data Modeling (Chapter 7). Notice the "ing" at the end of each of these chapters. We focus on the process of building each of these models, which is where we gain essential business knowledge. In Section III, Case Study, we will explain both top down and bottom up development approaches and go through a top down case study where we start with business requirements and end with the MongoDB database. This case study will tie together all of the techniques in the previous seven

chapters. Nike Senior Data Architect Ryan Smith wrote the foreword. Key points are included at the end of each chapter as a way to reinforce concepts. In addition, this book is loaded with hands-on exercises, along with their answers provided in Appendix A. Appendix B contains all of the book's references and Appendix C contains a glossary of the terms used throughout the text. Non-Invasive Data Governance John Wiley & Sons 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. The Data Model Resource Book Elsevier Data Modeling Made Simple will provide the business or IT professional with a practical working knowledge of data modeling concepts and best practices. This book is written in a conversational style that encourages you to read it from start to finish and master these ten objectives: Know when a data model is needed and which type of data model is most effective for each situation Read a data model of any size and complexity with the same confidence as reading a book Build a fully normalized relational data model, as well as an easily navigatable dimensional model Apply techniques to turn a logical data model into an efficient physical design Leverage several templates to make

requirements gathering more efficient and accurate Explain all ten categories of the Data Model Scorecard Learn strategies to improve your working relationships with others Appreciate the impact unstructured data has, and will have, on our data modeling deliverables Learn basic UML concepts Put data modeling in context with XML, metadata, and agile development

Book Review by Johnny Gay In this book review, I address each section in the book and provide what I found most valuable as a data modeler. I compare, as I go, how the book's structure eases the new data modeler into the subject much like an instructor might ease a beginning swimmer into the pool. This book begins like a Dan Brown novel. It even starts out with the protagonist, our favorite

data modeler, lost on a dark road somewhere in France. In this case, what saves him isn't a cipher, but of all things, something that's very much like a data model in the form of a map! The author deems they are both way-finding tools. The chapters in the book are divided into 5 sections. The chapters in each section end with an exercise and a list of the key points covered to reinforce what you've

learned. I find myself comparing the teaching structure of the book to the way most of us learn to swim.

Data Modeling Master Class Training Manual

Technics Publications Creating a precise diagram of business terms within your projects is a simple yet powerful communication tool for project managers, data governance professionals, and business analysts. Similar to how the Rosetta Stone provided a communication tool across multiple languages, the Rosedata Stone provides a communication tool across business languages. The Rosedata Stone, called the Business Terms Model (BTM) or the Conceptual Data Model, displays the achievement of a Common Business Language of terms for a particular business initiative. With more and more data being created and used, combined with intense competition, strict regulations, and rapid-spread social media, the financial, liability, and credibility stakes have never been higher and therefore the need for a Common Business Language has never been greater. Appreciate the power of the BTM and apply the steps to build a BTM over the books five chapters: 1.

Challenges. Explore how a Common Business Language is more important than ever with technologies like the Cloud and NoSQL, and Regulations such as the GDPR. 2. Needs. Identify scope and plan precise, minimal visuals that will capture the Common Business Language. 3. Solution. Meet the BTM and its components, along with the variations of relational and dimensional BTMs. Experience how several data modeling tools display the BTM, including CaseTalk, ER/Studio, erwin DM, and Hackolade. 4. Construction. Build operational (relational) and analytics (dimensional) BTMs for a bakery chain. 5. Practice. Reinforce BTM concepts and build BTMs for two of your own initiatives alongside a real example. *Data Modeling Made Simple with CA ERwin Data Modeler R8* Technics Publications A goldmine of valuable tools for data modelers! Data modelers render raw data-names, addresses, and salestotals, for instance-into information such as customer profiles andseasonal buying patterns that can be used for making criticalbusiness decisions. This book brings together thirty of the mosteffective tools for solving common

modeling problems. The authorprovides an example of each tool and describes what it is, why itis needed, and how it is generally used to model data for bothdatabases and data warehouses, along with tips and warnings. Blanksample copies of all worksheets and checklists described areprovided in an appendix. Companion Web site features updates on the latest tools andtechniques, plus links to related sites offering automatedtools.

The Data Model Resource Book, Volume 1 Technics Publications What is data warehousing? -- Project planning -- Business exploration -- Business case study and ROI analysis -- Organizational integration -- Technology -- Database maintenance -- Technical construction of the Wal-Mart data warehouse -- Postimplementation of the Wal-Mart data warehouse -- Store operations sample analyses -- Merchandising sample analyses.

Data Modeling Made Simple with Embarcadero ER/Studio Data Architect Technics Publications Data Modeling Essentials, Third Edition, covers the basics of data modeling while focusing on developing a facility in techniques, rather than a simple familiarization with "the rules". In order to

enable students to apply the basics of data modeling to real models, the book addresses the realities of developing systems in real-world situations by assessing the merits of a variety of possible solutions as well as using language and diagramming methods that represent industry practice. This revised edition has been given significantly expanded coverage and reorganized for greater reader comprehension even as it retains its distinctive hallmarks of readability and usefulness. Beginning with the basics, the book provides a thorough grounding in theory before guiding the reader through the various stages of applied data modeling and database design. Later chapters address advanced subjects, including business rules, data warehousing, enterprise-wide modeling and data management. It includes an entirely new section discussing the development of logical and physical modeling, along with new material describing a powerful technique for model verification. It also provides an excellent resource for additional lectures and exercises. This text is the ideal reference for data modelers, data

architects, database designers, DBAs, and systems analysts, as well as undergraduate and graduate-level students looking for a real-world perspective. Thorough coverage of the fundamentals and relevant theory. Recognition and support for the creative side of the process. Expanded coverage of applied data modeling includes new chapters on logical and physical database design. New material describing a powerful technique for model verification. Unique coverage of the practical and human aspects of modeling, such as working with business specialists, managing change, and resolving conflict. Data Modeling for MongoDB Technics Publications Ever have a bad data day? If you are a business user, architect, analyst, designer or developer, then you have probably had some bad data days.It comes with the territory. Overcoming these problems is much easier ifyou have an in-depth understanding of the actual data. That's where adata model comes in handy. It's a diagram that uses text and symbolsto represent groupings of data, giving you a clear picture of yourbusiness and application

environment **Data and Reality** Morgan Kaufmann Data Modeling Made Simple with PowerDesigner will provide the business or IT professional with a practical working knowledge of data modeling concepts and best practices, and how to apply these principles with PowerDesigner. You'll build many PowerDesigner data models along the way, increasing your skills first with the fundamentals and later with more advanced feature of PowerDesigner. This book combines real-world experience and best practices to help you master the following ten objectives: This book has ten key objectives for you, the reader: 1. You will know when a data model is needed and which PowerDesigner models are the most appropriate for each situation 2. You will be able to read a data model of any size and complexity with the same confidence as reading a book 3. You will know when to apply and how to make use of all the key features of PowerDesigner 4. You will be able to build, step-by-step in PowerDesigner, a pyramid of linked data models, including a conceptual data model, a fully normalized relational data model, a physical data

model, and an easily navigable dimensional model 5. You will be able to apply techniques such as indexing, transforms, and forward engineering to turn a logical data model into an efficient physical design 6. You will improve data governance and modeling consistency within your organization by leveraging features such as PowerDesigner's reference models, Glossary, domains, and model comparison and model mapping techniques 7. You will know how to utilize dependencies and traceability links to assess the impact of change 8. You will know how to integrate your PowerDesigner models with externally-managed files, including the import and export of data using Excel and Requirements documents 9. You will know where you can take advantage of the entire PowerDesigner model set, to increase the success rate of corporate-wide initiatives such as business intelligence and enterprise resource planning (ERP) 10. You will understand the key differentiators between PowerDesigner and other data modeling tools you may have used before This book contains seven sections: Section I introduces data

modeling, along with its purpose and variations. Section II explains all of the components on a data model including entities, data elements, relationships, and keys. Also included is a discussion of the importance of quality names and definitions for your objects. Section III explains the important role of data modeling tools, the key features required of any data modeling tool, and an introduction to the essential features of PowerDesigner. It also describes how to create and manage data modeling objects in PowerDesigner. Section IV introduces the Data Model Pyramid, then dives into the relational and dimensional subject areas, logical, and physical data models, and describes how PowerDesigner supports these models and the connections between them. Section V guides you through the creation of your own Data Model Pyramid. Section VI focuses on additional PowerDesigner features (some of which have already been introduced) that make life easier for data modelers. Learn how to get information into and out of PowerDesigner, and improve the quality of your data models with a cross-reference of key PowerDesigner features with

the Data Model Scorecard®. Section VII discusses PowerDesigner topics beyond data modeling, including the XML physical model and the other types of model available in PowerDesigner.

Data Modeling, A Beginner's Guide Technics Publications Llc Data Model Patterns: A Metadata Map not only presents a conceptual model of a metadata repository but also demonstrates a true enterprise data model of the information technology industry itself. It provides a step-by-step description of the model and is organized so that different readers can benefit from different parts. It offers a view of the world being addressed by all the techniques, methods, and tools of the information processing industry (for example, object-oriented design, CASE, business process re-engineering, etc.) and presents several concepts that need to be addressed by such tools. This book is pertinent, with companies and government agencies realizing that the data they use represent a significant corporate resource recognize the need to integrate data that has traditionally only been available from

disparate sources. An important component of this integration is management of the "metadata" that describe, catalogue, and provide access to the various forms of underlying business data. The "metadata repository" is essential to keep track of the various physical components of these systems and their semantics. The book is ideal for data management professionals, data modeling and design professionals, and data warehouse and database repository designers. A comprehensive work based on the Zachman Framework for information architecture— encompassing the Business Owner's, Architect's, and Designer's views, for all columns (data, activities, locations, people, timing, and motivation) Provides a step-by-step description of model and is organized so that different readers can benefit from different parts Provides a view of the world being addressed by all the techniques, methods and tools of the information processing industry (for example, object-oriented design, CASE, business process re-engineering, etc.) Presents many concepts that are not currently being addressed by such tools —

and should be **Data Resource Data** McGraw Hill Professional This is the seventh edition of the training manual for the Data Modeling Master Class that Steve Hoberman teaches onsite and through public classes. This text can be purchased prior to attending the Master Class, the latest course schedule and detailed description can be found on Steve Hoberman's website, stevehoberman.com. The Master Class is a complete data modeling course, containing three days of practical techniques for producing conceptual, logical, and physical relational and dimensional and NoSQL data models. After learning the styles and steps in capturing and modeling requirements, you will apply a best practices approach to building and validating data models through the Data Model Scorecard(R). You will know not just how to build a data model, but how to build a data model well. Two case studies and many exercises reinforce the material and will enable you to apply these techniques in your current projects. Top 10 Objectives 1. Explain data modeling components and identify them on your projects by following a question-driven approach 2. Demonstrate

reading a data model of any size and complexity with the same confidence as reading a book 3. Validate any data model with key "settings" (scope, abstraction, timeframe, function, and format) as well as through the Data Model Scorecard(R) 4. Apply requirements elicitation techniques including interviewing, artifact analysis, prototyping, and job shadowing 5. Build relational and dimensional conceptual and logical data models, and know the tradeoffs on the physical side for both RDBMS and NoSQL solutions 6. Practice finding structural soundness issues and standards violations 7. Recognize when to use abstraction and where patterns and industry data models can give us a great head start 8. Use a series of templates for capturing and validating requirements, and for data profiling 9. Evaluate definitions for clarity, completeness, and correctness 10. Leverage the Data Vault and enterprise data model for a successful enterprise architecture. **Data Model Patterns: A Metadata Map** Paragon Publishing Build a working knowledge of data modeling concepts and best practices, along with how to apply these

principles with ER/Studio. This second edition includes numerous updates and new sections including an overview of ER/Studio's support for agile development, as well as a description of some of ER/Studio's newer features for NoSQL, such as MongoDB's containment structure. You will build many ER/Studio data models along the way, applying best practices to master these ten objectives: 1.Know why a data model is needed and which ER/Studio models are the most appropriate for each situation 2.Understand each component on the data model and how to represent and create them in ER/Studio 3.Know how to leverage ER/Studio's latest features including those assisting agile teams and forward and reverse engineering of NoSQL databases 4.Know how to apply all the foundational features of ER/Studio 5.Be able to build relational and dimensional conceptual, logical, and physical data models in ER/Studio 6.Be able to apply techniques such as indexing, transforms, and forward engineering to turn a logical data model into an efficient physical design 7.Improve data model quality and impact analysis

results by leveraging ER/Studio's lineage functionality and compare/merge utility 8.Be able to apply ER/Studio's data dictionary features 9.Learn ways of sharing the data model through reporting and through exporting the model in a variety of formats 10.Leverage ER/Studio's naming functionality to improve naming consistency, including the new Automatic Naming Translation feature. This book contains four sections: Section I introduces data modeling and the ER/Studio landscape. Learn why data modeling is so critical to software development and even more importantly, why data modeling is so critical to understanding the business. You will learn about the newest features in ER/Studio (including features on big data and agile), and the ER/Studio environment. By the end of this sectio *Data Modeling Made Simple with erwin DM* Technics Publications Llc

This is the second edition of the popular practitioner's guide to SQL, the industry-standard database query language. Like most computer languages, SQL can be overwhelming when you first see it, but for years readers have relied on this book to

clear the confusion and explain how SQL works and how to use it effectively. Packed with tips, tricks, and good information, SQL Clearly Explained, Second Edition teaches database users and programmers everything they need to know to get their job done including · formulating SQL queries, · understanding how queries are processed by the DBMS, · maximizing performance, · using SQL to enter, modify, or delete data, · creating and maintaining database structural elements, and · embedding SQL in applications. Features · Updated and expanded to include changes in the SQL standard (SQL:1999) as well as recently implemented aspects of SQL-92. · Includes CD with examples from the book as well as MySQL, a popular open-source DBMS, on which the examples are based. · Web enhanced with extra features available online at www.mkp.com. * Second edition of classic SQL handbook * Updated to cover changes in the SQL language standard (SQL:1999) * Includes CD with MySQL software *Information Modeling and Relational Databases* John Hunt Publishing Information Modeling and Relational Databases provides an introduction to ORM (Object Role

Modeling)-and much more. In fact, it's the only book to go beyond introductory coverage and provide all of the in-depth instruction you need to transform knowledge from domain experts into a sound database design. Inside, ORM authority Terry Halpin blends conceptual information with practical instruction that will let you begin using ORM effectively as soon as possible. Supported by examples, exercises, and useful background information, his step-by-step approach teaches you to develop a natural-language-based ORM model and then, where needed, abstract ER and UML models from it. This book will quickly make you proficient in the modeling technique that is proving vital to the development of accurate and efficient databases that best meet real business objectives. The most in-depth coverage of Object Role Modeling available anywhere-written by a pioneer in the development of ORM. Provides additional coverage of Entity Relationship (ER) modeling and the Unified Modeling Language-all from an ORM perspective. Intended for anyone with a stake in the accuracy and efficacy of databases: systems analysts,

information modelers, database designers and administrators, instructors, managers, and programmers. Explains and illustrates required concepts from mathematics and set theory.