

Data Modeling Made Simple With Ca Erwin Data Modeler R8 Data Modeling Made Simple With Ca Erwin Data Modeler R8 By Burbank Donna Author Sep 01 2011

Presents instructions on using MySQL, covering such topics as installation, querying, user management, security, and backups and recovery. 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. Agile Data Warehouse Design is a step-by-step guide for capturing data warehousing/business intelligence (DW/BI) requirements and turning them into high performance dimensional models in the most direct way: by modelstorming (data modeling] brainstorming) with BI stakeholders. This book describes BEAM, an agile approach to dimensional modeling, for improving communication between data warehouse designers, BI stakeholders and the whole DW/BI development team. BEAM provides tools and techniques that will encourage DW/BI designers and developers to move away from their keyboards and entity relationship based tools and model interactively with their colleagues. The result is everyone thinks dimensionally from the outset! Developers understand how to efficiently implement dimensional modeling solutions. Business stakeholders feel ownership of the data warehouse they have created, and can already imagine how they will use it to answer their business questions. Within this book, you will learn: Agile dimensional modeling using Business Event Analysis & Modeling (BEAM) Modelstorming: data modeling that is quicker, more inclusive, more productive, and frankly more fun! Telling dimensional data stories using the 7Ws (who, what, when, where, how many, why and how) Modeling by example not abstraction; using data story themes, not crow's feet, to describe detail Storyboarding the data warehouse to discover conformed dimensions and plan iterative development Visual modeling: sketching timelines, charts and grids to model complex process measurement - simply Agile design documentation: enhancing star schemas with BEAM dimensional shorthand notation Solving difficult DW/BI performance and usability problems with proven dimensional design patterns LawrenceCorr is a data warehouse designer and educator. As Principal of DecisionOne Consulting, he helps clients to review and simplify their data warehouse designs, and advises vendors on visual data modeling techniques.

He regularly teaches agile dimensional modeling courses worldwide and has taught dimensional DW/BI skills to thousands of students. Jim Stagnitto is a data warehouse and master data management architect specializing in the healthcare, financial services, and information service industries. He is the founder of the data warehousing and data mining consulting firm Llumino.

Did you ever try getting Businesspeople and IT to agree on the project scope for a new application? Or try getting Marketing and Sales to agree on the target audience? Or try bringing new team members up to speed on the hundreds of tables in your data warehouse — without them dozing off? Whether you are a businessperson or an IT professional, you can be the hero in each of these and hundreds of other scenarios by building a High-Level Data Model. The High-Level Data Model is a simplified view of our complex environment. It can be a powerful communication tool of the key concepts within our application development projects, business intelligence and master data management programs, and all enterprise and industry initiatives. Learn about the High-Level Data Model and master the techniques for building one, including a comprehensive ten-step approach and hands-on exercises to help you practice topics on your own. In this book, we review data modeling basics and explain why the core concepts stored in a high-level data model can have significant business impact on an organization. We explain the technical notation used for a data model and walk through some simple examples of building a high-level data model. We also describe how data models relate to other key initiatives you may have heard of or may be implementing in your organization. This book contains best practices for implementing a high-level data model, along with some easy-to-use templates and guidelines for a step-by-step approach. Each step will be illustrated using many examples based on actual projects we have worked on. Names have been changed to protect the innocent, but the pain points and lessons have been preserved. One example spans an entire chapter and will allow you to practice building a high-level data model from beginning to end, and then compare your results to ours. Building a high-level data model following the ten step approach you'll read about is a great way to ensure you will retain the new skills you learn in this book. As is the case in many disciplines, using the right tool for the right job is critical to the overall success of your high-level data model implementation. To help you in your tool selection process, there are several chapters dedicated to discussing what to look for in a high-level data modeling tool and a framework for choosing a data modeling tool, in general. This book concludes with a real-world case study that shows how an international energy company successfully used a high-level data model to streamline their information management practices and increase communication throughout the organization—between both businesspeople and IT. Data modeling is one of the under-exploited, and potentially very valuable, business capabilities that are often hidden away in an organization's Information Technology department. Data Modeling for the Business highlights both the resulting damage to business value, and the opportunities to make things better. As an easy-to follow and comprehensive guide on the 'why' and 'how' of data modeling, it also reminds us that a successful strategy for exploiting IT depends at least as much on the information as the technology. Chris Potts, Corporate IT Strategist and Author of fruITion: Creating the Ultimate Corporate Strategy for Information Technology One of the most critical systems issues is aligning business with IT and fulfilling business needs using data models. The authors of Data Modeling for the Business do a masterful job at simply and clearly describing the art of using data models to communicate with business representatives and meet business needs. The book provides many valuable tools, analogies, and step-by-step methods for effective data modeling and is an important contribution in bridging the much needed connection between data modeling and realizing business requirements. Len Silverston, author of The Data Model Resource Book series The purpose of this book is to provide a practical approach for IT professionals to acquire the necessary knowledge and expertise in data modeling to function effectively. It begins with an overview of basic data modeling concepts, introduces the methods and techniques, provides

a comprehensive case study to present the details of the data model components, covers the implementation of the data model with emphasis on quality components, and concludes with a presentation of a realistic approach to data modeling. It clearly describes how a generic data model is created to represent truly the enterprise information requirements.

This third volume of the best-selling "Data Model Resource Book" series revolutionizes the data modeling discipline by answering the question "How can you save significant time while improving the quality of any type of data modeling effort?" In contrast to the first two volumes, this new volume focuses on the fundamental, underlying patterns that affect over 50 percent of most data modeling efforts. These patterns can be used to considerably reduce modeling time and cost, to jump-start data modeling efforts, as standards and guidelines to increase data model consistency and quality, and as an objective source against which an enterprise can evaluate data models. Praise for The Data Model Resource Book, Volume 3 "Len and Paul look beneath the superficial issues of data modeling and have produced a work that is a must for every serious designer and manager of an IT project." —Bill Inmon, World-renowned expert, speaker, and author on data warehousing and widely recognized as the "father of data warehousing" "The Data Model Resource Book, Volume 3: Universal Patterns for Data Modeling is a great source for reusable patterns you can use to save a tremendous amount of time, effort, and cost on any data modeling effort. Len Silverston and Paul Agnew have provided an indispensable reference of very high-quality patterns for the most foundational types of datamodel structures. This book represents a revolutionary leap in moving the data modeling profession forward." —Ron Powell, Cofounder and Editorial Director of the Business Intelligence Network "After we model a Customer, Product, or Order, there is still more about each of these that remains to be captured, such as roles they play, classifications in which they belong, or states in which they change. The Data Model Resource Book, Volume 3: Universal Patterns for Data Modeling clearly illustrates these common structures. Len Silverston and Paul Agnew have created a valuable addition to our field, allowing us to improve the consistency and quality of our models by leveraging the many common structures within this text." —Steve Hoberman, Best-Selling Author of Data Modeling Made Simple "The large national health insurance company I work at has actively used these data patterns and the (Universal Data Models) UDM, ahead of this book, through Len Silverston's UDM Jump Start engagement. The patterns have found their way into the core of our Enterprise Information Model, our data warehouse designs, and progressively into key business function databases. We are getting to reuse the patterns across projects and are reaping benefits in understanding, flexibility, and time-to-market. Thanks so much." —David Chasteen, Enterprise Information Architect "Reusing proven data modeling design patterns means exactly that. Data models become stable, but remain very flexible to accommodate changes. We have had the fortune of having Len and Paul share the patterns that are described in this book via our engagements with Universal Data Models, LLC. These data modeling design patterns have helped us to focus on the essential business issues because we have leveraged these reusable building blocks for many of the standard design problems. These design patterns have also helped us to evaluate the quality of data models for their intended purpose. Many times there are a lot of enhancements required. Too often the very specialized business-oriented data model is also implemented physically. This may have significant drawbacks to flexibility. I'm looking forward to increasing the data modeling design pattern competence within Nokia with the help of this book." —Teemu Mattelmaki, Chief Information Architect, Nokia "Once again, Len Silverston, this time together with Paul Agnew, has made a valuable contribution to the body of knowledge about datamodels, and the act of building sound data models. As a professional d Logical Data Modeling offers business managers, analysts, and students a clear, basic systematic guide to defining business information structures in relational database terms. The approach, based on Clive Finkelstein's business-side Information Engineering, is hands-on,

practical, and explicit in terminology and reasoning. Filled with illustrations, examples, and exercises, Logical Data Modeling makes its subject accessible to readers with only a limited knowledge of database systems. The book covers all essential topics thoroughly but succinctly: entities, associations, attributes, keys and inheritance, valid and invalid structures, and normalization. It also emphasizes communication with business and database specialists, documentation, and the use of Visible Systems' Visible Advantage enterprise modeling tool. The application of design patterns to logical data modeling provides practitioners with a practical tool for fast development. At the end, a chapter covers the issues that arise when the logical data model is translated into the design for a physical database.

Data Modeling Made Simple with CA ERwin Data Modeler r8 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 CA ERwin Data Modeler r8. You'll build many CA ERwin data models along the way, mastering first the fundamentals and later in the book the more advanced features of CA ERwin Data Modeler. This book combines real-world experience and best practices with down to earth advice, humor, and even cartoons to help you master the following ten objectives:

1. Understand the basics of data modeling and relational theory, and how to apply these skills using CA ERwin Data Modeler
2. Read a data model of any size and complexity with the same confidence as reading a book
3. Understand the difference between conceptual, logical, and physical models, and how to effectively build these models using CA ERwin's Data Modelers Design Layer Architecture
4. Apply techniques to turn a logical data model into an efficient physical design and vice-versa through forward and reverse engineering, for both 'top down' and bottom-up design
5. Learn how to create reusable domains, naming standards, UDPs, and model templates in CA ERwin Data Modeler to reduce modeling time, improve data quality, and increase enterprise consistency
6. Share data model information with various audiences using model formatting and layout techniques, reporting, and metadata exchange
7. Use the new workspace customization features in CA ERwin Data Modeler r8 to create a workflow suited to your own individual needs
8. Leverage the new Bulk Editing features in CA ERwin Data Modeler r8 for mass metadata updates, as well as import/export with Microsoft Excel
9. Compare and merge model changes using CA ERwin Data Modelers Complete Compare features
10. Optimize the organization and layout of your data models through the use of Subject Areas, Diagrams, Display Themes, and more

Section I provides an overview of data modeling: what it is, and why it is needed. The basic features of CA ERwin Data Modeler are introduced with a simple, easy-to-follow example. Section II introduces the basic building blocks of a data model, including entities, relationships, keys, and more. How-to examples using CA ERwin Data Modeler are provided for each of these building blocks, as well as 'real world' scenarios for context. Section III covers the creation of reusable standards, and their importance in the organization. From standard data modeling constructs such as domains to CA ERwin-specific features such as UDPs, this section covers step-by-step examples of how to create these standards in CA ERwin Data Modeling, from creation, to template building, to sharing standards with end users through reporting and queries. Section IV discusses conceptual, logical, and physical data models, and provides a comprehensive case study using CA ERwin Data Modeler to show the interrelationships between these models using CA ERwin's Design Layer Architecture. Real world examples are provided from requirements gathering, to working with business sponsors, to the hands-on nitty-gritty details of building conceptual, logical, and physical data models with CA ERwin Data Modeler r8. From the Foreword by Tom Bilcze, President, CA Technologies Modeling Global User Community: Data Modeling Made Simple with CA ERwin Data Modeler r8 is an excellent resource for the ERwin community. The data modeling community is a diverse collection of data professionals with many perspectives of data modeling and different levels of skill and experience. Steve Hoberman and Donna Burbank guide newbie modelers through the basics of data modeling and CA ERwin r8. Through the liberal use of illustrations,

the inexperienced data modeler is graphically walked through the components of data models and how to create them in CA ERwin r8. As an experienced data modeler, Steve and Donna give me a handbook for effectively using the new and enhanced features of this release to bring my art form to life. The book delves into advanced modeling topics and techniques by continuing the liberal use of illustrations. It speaks to the importance of a defined data modeling architecture with soundly modeled data to assist the enterprise in understanding of the value of data. It guides me in applying the finishing touches to my data designs.

Data Modeling Theory and Practice is for practitioners and academics who have learned the conventions and rules of data modeling and are looking for a deeper understanding of the discipline. The coverage of theory includes a detailed review of the extensive literature on data modeling and logical database design, referencing nearly 500 publications, with a strong focus on their relevance to practice. The practice component incorporates the largest-ever study of data modeling practitioners, involving over 450 participants in interviews, surveys and data modeling tasks. The results challenge many long-held assumptions about data modeling and will be of interest to academics and practitioners alike. Graeme Simson brings to the book the practical perspective and intellectual clarity that have made his Data Modeling Essentials a classic in the field. He begins with a question about the nature of data modeling (design or description), and uses it to illuminate such issues as the definition of data modeling, its philosophical underpinnings, inputs and deliverables, the necessary behaviors and skills, the role of creativity, product diversity, quality measures, personal styles, and the differences between experts and novices. Data Modeling Theory and Practice is essential reading for anyone involved in data modeling practice, research, or teaching.

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 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.

Manage and work with business data effectively by learning data modeling techniques and leveraging the latest features of Power BI Key Features Understand data modeling techniques to get the best out of data using Power BI Define the relationships between data to extract valuable insights Solve a wide variety of business challenges by building optimal data models Book Description Microsoft Power BI is one of the most popular business intelligence tools available on the market for desktop and the cloud. This book will be your guide to understanding the ins and outs of data modeling and how to create data models using Power BI confidently. You'll learn how to connect data from multiple sources, understand data, define and manage relationships between data, and shape data models. In this book, you'll explore how to use data modeling and navigation techniques to define relationships and create a data model before defining new metrics and performing custom calculations using modeling features. As you advance through the chapters, the book will demonstrate how to create full-fledged data models, enabling you to create efficient data models and simpler DAX code with new data modeling features. With the help of examples, you'll discover how you can solve business challenges by building optimal data models and changing your existing data models to meet evolving business requirements. Finally, you'll learn how to use some new and advanced modeling features to enhance your data models to carry out a wide variety of complex tasks. By the end of this Power BI book, you'll have gained the skills you need to structure data coming from multiple sources in different ways to create optimized data models that support reporting and data analytics. What you will learn Implement virtual tables and time intelligence functionalities in DAX to build a powerful model Identify Dimension and Fact

tables and implement them in Power Query Editor Deal with advanced data preparation scenarios while building Star Schema Explore best practices for data preparation and data modeling Discover different hierarchies and their common pitfalls Understand complex data models and how to decrease the level of model complexity with different data modeling approaches Who this book is for This MS Power BI book is for BI users, data analysts, and analysis developers who want to become well-versed with data modeling techniques to make the most of Power BI. Basic knowledge of Power BI and Star Schema will help you to understand the concepts covered in this book.

Essential Skills--Made Easy! Learn how to create data models that allow complex data to be analyzed, manipulated, extracted, and reported upon accurately. Data Modeling: A Beginner's Guide teaches you techniques for gathering business requirements and using them to produce conceptual, logical, and physical database designs. You'll get details on Unified Modeling Language (UML), normalization, incorporating business rules, handling temporal data, and analytical database design. The methods presented in this fast-paced tutorial are applicable to any database management system, regardless of vendor. Designed for Easy Learning Key Skills & Concepts--Chapter-opening lists of specific skills covered in the chapter Ask the expert--Q&A sections filled with bonus information and helpful tips Try This--Hands-on exercises that show you how to apply your skills Notes--Extra information related to the topic being covered Self Tests--Chapter-ending quizzes to test your knowledge Andy Oppel has taught database technology for the University of California Extension for more than 25 years. He is the author of Databases Demystified, SQL Demystified, and Databases: A Beginner's Guide, and the co-author of SQL: A Beginner's Guide, Third Edition, and SQL: The Complete Reference, Third Edition.

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 Made Simple A Practical Guide for Business and IT Professionals Technics Publications Llc

Read today's business headlines and you will see that many issues stem from people not having the right data at the right time. Data issues don't always make the front page, yet they exist within every organisation. We need to improve how we manage data -- and the most valuable tool for explaining, validating and managing data is a data model. This book provides the business or IT professional with a practical working knowledge of data modelling 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 normalised 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 modelling deliverables; Learn basic UML concepts; Put data modelling in context with XML, metadata, and agile development.

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 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.

Defining a set of guiding principles for data management and describing how these principles can be applied within data

management functional areas; Providing a functional framework for the implementation of enterprise data management practices; including widely adopted practices, methods and techniques, functions, roles, deliverables and metrics; Establishing a common vocabulary for data management concepts and serving as the basis for best practices for data management professionals. DAMA-DMBOK2 provides data management and IT professionals, executives, knowledge workers, educators, and researchers with a framework to manage their data and mature their information infrastructure, based on these principles: Data is an asset with unique properties; The value of data can be and should be expressed in economic terms; Managing data means managing the quality of data; It takes metadata to manage data; It takes planning to manage data; Data management is cross-functional and requires a range of skills and expertise; Data management requires an enterprise perspective; Data management must account for a range of perspectives; Data management is data lifecycle management; Different types of data have different lifecycle requirements; Managing data includes managing risks associated with data; Data management requirements must drive information technology decisions; Effective data management requires leadership commitment.

Big data modeling is very challenging to handle using traditional database modeling and management systems. This book will teach you how to model big data using the latest and more efficient tools such as ERWIN, ANACONDA (Python), and WEKA to model data.

How do we design for data when traditional design techniques cannot extend to new database technologies? In this era of big data and the Internet of Things, it is essential that we have the tools we need to understand the data coming to us faster than ever before, and to design databases and data processing systems that can adapt easily to ever-changing data schemas and ever-changing business requirements. There must be no intellectual disconnect between data and the software that manages it. It must be possible to extract meaning and knowledge from data to drive artificial intelligence applications. Novel NoSQL data organization techniques must be used side-by-side with traditional SQL databases. Are existing data modeling techniques ready for all of this? The Concept and Object Modeling Notation (COMN) is able to cover the full spectrum of analysis and design. A single COMN model can represent the objects and concepts in the problem space, logical data design, and concrete NoSQL and SQL document, key-value, columnar, and relational database implementations. COMN models enable an unprecedented level of traceability of requirements to implementation. COMN models can also represent the static structure of software and the predicates that represent the patterns of meaning in databases. This book will teach you: the simple and familiar graphical notation of COMN with its three basic shapes and four line styles how to think about objects, concepts, types, and classes in the real world, using the ordinary meanings of English words that aren't tangled with confused techno-speak how to express logical data designs that are freer from implementation considerations than is possible in any other notation how to understand key-value, document, columnar, and table-oriented database designs in logical and physical terms how to use COMN to specify physical database implementations in any NoSQL or SQL database with the precision necessary for model-driven development

Choose the right Azure data service and correct model design for successful implementation of your data model with the help of

this hands-on guide Key Features Design a cost-effective, performant, and scalable database in Azure Choose and implement the most suitable design for a database Discover how your database can scale with growing data volumes, concurrent users, and query complexity Book Description Data is at the heart of all applications and forms the foundation of modern data-driven businesses. With the multitude of data-related use cases and the availability of different data services, choosing the right service and implementing the right design becomes paramount to successful implementation. Data Modeling for Azure Data Services starts with an introduction to databases, entity analysis, and normalizing data. The book then shows you how to design a NoSQL database for optimal performance and scalability and covers how to provision and implement Azure SQL DB, Azure Cosmos DB, and Azure Synapse SQL Pool. As you progress through the chapters, you'll learn about data analytics, Azure Data Lake, and Azure SQL Data Warehouse and explore dimensional modeling, data vault modeling, along with designing and implementing a Data Lake using Azure Storage. You'll also learn how to implement ETL with Azure Data Factory. By the end of this book, you'll have a solid understanding of which Azure data services are the best fit for your model and how to implement the best design for your solution. What you will learn Model relational database using normalization, dimensional, or Data Vault modeling Provision and implement Azure SQL DB and Azure Synapse SQL Pools Discover how to model a Data Lake and implement it using Azure Storage Model a NoSQL database and provision and implement an Azure Cosmos DB Use Azure Data Factory to implement ETL/ELT processes Create a star schema model using dimensional modeling Who this book is for This book is for business intelligence developers and consultants who work on (modern) cloud data warehousing and design and implement databases. Beginner-level knowledge of cloud data management is expected.

This is the digital version of the printed book (Copyright © 1996). Learning the basics of a modeling technique is not the same as learning how to use and apply it. To develop a data model of an organization is to gain insights into its nature that do not come easily. Indeed, analysts are often expected to understand subtleties of an organization's structure that may have evaded people who have worked there for years. Here's help for those analysts who have learned the basics of data modeling (or "entity/relationship modeling") but who need to obtain the insights required to prepare a good model of a real business. Structures common to many types of business are analyzed in areas such as accounting, material requirements planning, process manufacturing, contracts, laboratories, and documents. In each chapter, high-level data models are drawn from the following business areas: The Enterprise and Its World The Things of the Enterprise Procedures and Activities Contracts Accounting The Laboratory Material Requirements Planning Process Manufacturing Documents Lower-Level Conventions

From the first chapter, author Carla DeAngelis skillfully explains the normally complex concepts of Data Modeling—a critical success factor in the information-based enterprises of today. Carla tackles complex topics such as Logical Data Models, Modeling Methodologies, Relationships, and Attributes in a clear style that makes it simple for anyone to begin applying them immediately. Once the foundation has been laid, Carla teaches you to develop your own databases with ERwin. You will learn to use the tool to create primary keys and assign attributes, build data relationships with point and click ease, build and edit tables with Erwin's built-

in editors, create indexes with the Index Editor, write custom SQL scripts, and process reports with the Report Tools.

"This book introduces you to R, RStudio, and the tidyverse, a collection of R packages designed to work together to make data science fast, fluent, and fun. Suitable for readers with no previous programming experience"--
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. Data Modeling Made Simple with ER/Studio Data Architect will provide the business or IT professional with a practical working knowledge of data modeling concepts and best practices, along with how to apply these principles with ER/Studio. You'll build many ER/Studio data models along the way, applying best practices to master these ten objectives: 1. You will know why a data model is needed and which ER/Studio 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 how to apply all the key features of ER/Studio 4. You will be able to build relational and dimensional conceptual, logical, and physical data models in ER/Studio 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 model quality and impact analysis results by leveraging ER/Studio's lineage functionality and compare/merge utility 7. You will achieve enterprise architecture through ER/Studio's repository and portal functionality 8. You will be able to apply ER/Studio's data dictionary features 9. You will learn ways of sharing the data model through reporting and through exporting the model in a variety of formats 10. You will leverage ER/Studio's naming functionality to improve naming consistency 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 also learn about the ER/Studio environment. By the end of this section, you will have created and saved your first data model in ER/Studio and be ready to start modeling in Section II! Section II explains all of the symbols and text on a data model, including entities, attributes, relationships, domains, and keys. By the time you finish this section, you will be able to 'read' a data model of any size or complexity, and create a complete data model in ER/Studio. Section III explores the three different levels of models: conceptual, logical, and physical. A conceptual data model (CDM) represents a business need within a defined scope. The logical data model (LDM) represents a detailed business solution, capturing the business requirements without complicating the model with implementation concerns such as software and hardware. The physical data model (PDM) represents a detailed technical solution. The PDM is the logical data model compromised often to improve performance or usability. The PDM makes up for deficiencies in our technology. By the end of this section you will be able to create conceptual, logical, and physical data models in ER/Studio. Section IV discusses additional features of ER/Studio. These features include data dictionary, data lineage, automating tasks, repository and portal, exporting and reporting, naming standards, and compare and merge functionality.

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 AND DATABASE DESIGN presents a conceptually complete coverage of indispensable topics that each MIS student should learn if that student takes only one database course. Database design and data modeling encompass the minimal set of topics addressing the core competency of knowledge students should acquire in the database area. The text, rich examples, and figures work together to cover material with a depth and precision that is not available in more introductory database books. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

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 section

Get expert guidance on architecting end-to-end data management solutions with Apache Hadoop. While many sources explain how to use various components in the Hadoop ecosystem, this practical book takes you through architectural considerations necessary to tie those components together into a complete tailored application, based on your particular use case. To reinforce those lessons, the book's second section provides detailed examples of architectures used in some of the most commonly found Hadoop applications. Whether you're designing a new Hadoop application, or planning to integrate Hadoop into your existing data infrastructure, Hadoop Application Architectures will skillfully guide you through the process. This book covers: Factors to consider when using Hadoop to store and model data Best practices for moving data in and out of the system Data processing frameworks, including MapReduce, Spark, and Hive Common Hadoop processing patterns, such as removing duplicate records and using windowing analytics Giraph, GraphX, and other tools for large graph processing on Hadoop Using workflow orchestration and scheduling tools such as Apache Oozie Near-real-time stream processing with Apache Storm, Apache Spark Streaming, and Apache Flume Architecture examples for clickstream analysis, fraud detection, and data warehousing

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.

Data Visualization Made Simple is a practical guide to the fundamentals, strategies, and real-world cases for data visualization, an essential skill required in today's information-rich world. With foundations rooted in statistics, psychology, and computer science, data visualization offers practitioners in almost every field a coherent way to share findings from original research, big data, learning analytics, and more. In nine appealing chapters, the book: examines the role of data graphics in decision-making, sharing information, sparking discussions, and inspiring future research; scrutinizes data graphics, deliberates on the messages they convey, and looks at options for design visualization; and includes cases and interviews to provide a contemporary view of how data graphics are used by professionals across industries Both novices and seasoned designers in education, business, and other areas can use this book's effective, linear process to develop data visualization literacy and promote exploratory, inquiry-based approaches to visualization problems.

You want increased customer satisfaction, faster development cycles, and less wasted work. Domain-driven design (DDD) combined with functional programming is the innovative combo that will get you there. In this pragmatic, down-to-earth guide, you'll see how applying the core principles of functional programming can result in software designs that model real-world requirements both elegantly and concisely - often more so than an object-oriented approach. Practical examples in the open-source F# functional language, and examples from familiar business domains, show you how to apply these techniques to build software that is business-focused, flexible, and high quality. Domain-driven design is a well-established approach to designing software that ensures that domain experts and developers work together effectively to create high-quality software. This book is the first to combine DDD with techniques from statically typed functional programming. This book is perfect for newcomers to DDD or functional programming - all the techniques you need will be introduced and explained. Model a complex domain accurately using the F# type system, creating compilable code that is also readable documentation---ensuring that the code and design never get out of sync. Encode business rules in the design so that you have "compile-time unit tests," and eliminate many potential bugs by making illegal states unrepresentable. Assemble a series of small, testable functions into a complete use case, and compose these individual scenarios into a large-scale design. Discover why the combination of functional programming and DDD leads naturally to service-oriented and hexagonal architectures. Finally, create a functional domain model that works with traditional databases, NoSQL, and event stores, and safely expose your domain via a website or API. Solve real

problems by focusing on real-world requirements for your software. What You Need: The code in this book is designed to be run interactively on Windows, Mac and Linux. You will need a recent version of F# (4.0 or greater), and the appropriate .NET runtime for your platform. Full installation instructions for all platforms at fsharp.org.

Data Resource Data provides the complete detailed data resource model for understanding and managing data as a critical resource of the organization.

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.

What value does semantic data modeling offer? As an information architect or data science professional, let's say you have an abundance of the right data and the technology to extract business gold—but you still fail. The reason? Bad data semantics. In this practical and comprehensive field guide, author Panos Alexopoulos takes you on an eye-opening journey through semantic data modeling as applied in the real world. You'll learn how to master this craft to increase the usability and value of your data and applications. You'll also explore the pitfalls to avoid and dilemmas to overcome for building high-quality and valuable semantic representations of data. Understand the fundamental concepts, phenomena, and processes related to semantic data modeling Examine the quirks and challenges of semantic data modeling and learn how to effectively leverage the available frameworks and tools Avoid mistakes and bad practices that can undermine your efforts to create good data models Learn about model development dilemmas, including representation, expressiveness and content, development, and governance Organize and execute semantic data initiatives in your organization, tackling technical, strategic, and organizational challenges

The book features many figures and tables illustrating longitudinal data and numerous homework problems. The associated web site contains many longitudinal data sets, examples of computer code, and labs to re-enforce the material. Weiss emphasizes continuous data rather than discrete data, graphical and covariance methods, and generalizations of regression rather than generalizations of analysis of variance.

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).

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