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# Data Modeling Basics Steve Hoberman

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Data Modeling Essentials

The Enterprise Data Model

Data Modeling Master Class Training Manual 9th Edition

Data Modeling Master Class Training Manual 2nd Edition

Data Modeling Fundamentals

Data Modeling Master Class Training Manual

Data Modeling Explained

DATA MODELER'S WORKBENCH: TOOLS AND TECHNIQUES FOR ANALYSIS AND DESIGN

Data Modeling Essentials

Data Modeling Master Class Training Manual

Data Modeling Essentials

Data Modeling Made Simple with Erwin DM

Data Modeling Master Class Training Manual 5th Edition

Mastering Data Modeling

Hands-On Big Data Modeling

A Developer's Guide to Data Modeling for SQL Server

Data Modeling Made Simple

Data Modeling Fundamentals

The Data Model Resource Book, Volume 1

Data Modeling for MongoDB

Data Modeling Made Simple with PowerDesigner

Information Modeling and Relational Databases

Data Modeling Made Simple with CA ERwin Data Modeler r8

Data Modeling Made Simple with Embarcadero ER/Studio Data Architect

Data and Reality

Mastering Data Modeling

Developing High Quality Data Models  
Physical Data Modeling  
Conceptual Data Modeling  
Normalization in Data Modeling  
Data Modeling Made Simple  
Data Resource Data  
Data Model Scorecard  
Data Modeling for the Business  
Data Modeling Master Class Training Manual 7th Edition  
The Rosedata Stone  
Logical Data Modeling  
Data Modeling Master Class Training Manual  
Data Warehousing  
Data Modeling Made Simple

*Data Modeling Basics*  
Steve Hoberman

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*Data Modeling Essentials* Technics  
Publications LLC

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](http://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.

The Enterprise Data Model Elsevier  
“ A Developer’s Guide to Data Modeling for SQL Server explains the concepts and practice of data modeling with a clarity that makes the technology accessible to anyone building databases and data-driven applications. “Eric Johnson and Joshua Jones combine a deep understanding of the science of data modeling with the art that comes with years of experience. If you’re new to data modeling, or find the need to brush up on its concepts, this book is for you.” — Peter Varhol, Executive Editor, Redmond

Magazine Model SQL Server Databases That Work Better, Do More, and Evolve More Smoothly Effective data modeling is essential to ensuring that your databases will perform well, scale well, and evolve to meet changing requirements. However, if you’re modeling databases to run on Microsoft SQL Server 2008 or 2005, theoretical or platform-agnostic data modeling knowledge isn’t enough: models that don’t reflect SQL Server’s unique real-world strengths and weaknesses often lead to disastrous performance. A Developer’s Guide to Data Modeling for SQL Server is a practical, SQL Server-specific guide to data modeling for every developer, architect, and administrator. This book offers you invaluable start-to-finish guidance for designing new databases, redesigning existing SQL Server data models, and migrating databases from other platforms. You’ll begin with a concise, practical overview of the core data modeling techniques. Next, you’ll walk through requirements gathering and discover how to convert requirements into effective SQL Server logical models. Finally, you’ll systematically transform those logical

models into physical models that make the most of SQL Server’s extended functionality. All of this book’s many examples are available for download from a companion Web site. This book enables you to Understand your data model’s physical elements, from storage to referential integrity Provide programmability via stored procedures, user-defined functions, triggers, and .NET CLR integration Normalize data models, one step at a time Gather and interpret requirements more effectively Learn an effective methodology for creating logical models Overcome modeling problems related to entities, attribute, data types, storage overhead, performance, and relationships Create physical models—from establishing naming guidelines through implementing business rules and constraints Use SQL Server’s unique indexing capabilities, and overcome their limitations Create abstraction layers that enhance security, extensibility, and flexibility Data Modeling Master Class Training Manual 9th Edition John Wiley & Sons Data Modeling Essentials is a comprehensive guide to data modeling for

commercial information systems. Data modeling is presented as a design activity which offers opportunities for creativity and innovation.

### **Data Modeling Master Class Training Manual 2nd Edition** 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. You will build many ER/Studio data models along the way, applying best practices to master these ten objectives: Know why a data model is needed and which ER/Studio models are the most appropriate for each situation Understand each component on the data model and how to represent and create them in ER/Studio Know how to leverage ER/Studio's latest features including those assisting agile teams and forward and reverse engineering of NoSQL databases Know how to apply all the

foundational features of ER/Studio Be able to build relational and dimensional conceptual, logical, and physical data models in ER/Studio Be able to apply techniques such as indexing, transforms, and forward engineering to turn a logical data model into an efficient physical design Improve data model quality and impact analysis results by leveraging ER/Studio's lineage functionality and compare/merge utility Be able to apply ER/Studio's data dictionary features Learn ways of sharing the data model through reporting and through exporting the model in a variety of formats 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, 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 Fundamentals* Technics Publications, LLC

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 Modeling Master Class Training Manual](#) Springer Science & Business Media Information Modeling and Relational Databases, Third Edition, provides an introduction to ORM (Object-Role Modeling) and much more. In fact, it is 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. This book is intended for anyone with a stake in the accuracy and efficacy of databases: systems analysts, information modelers, database designers and administrators, and programmers. Dr. Terry Halpin and Dr. Tony Morgan, pioneers in the development of ORM, blend conceptual information with practical instruction that will let you begin using ORM effectively as soon as possible. The all-new Third Edition includes coverage of advances and improvements in ORM and UML, nominalization, relational

mapping, SQL, XML, data interchange, NoSQL databases, ontological modeling, and post-relational databases. Supported by examples, exercises, and useful background information, the authors' 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. "This book is an excellent introduction to both information modeling in ORM and relational databases. The book is very clearly written in a step-by-step manner and contains an abundance of well-chosen examples illuminating practice and theory in information modeling. I strongly recommend this book to anyone interested in conceptual modeling and databases." — Dr. Herman Balsters, Director of the Faculty of Industrial Engineering, University of Groningen, The Netherlands Presents the most in-depth coverage of object-role modeling, including a thorough update of the book for the latest versions of ORM, ER, UML,

OWL, and BPMN modeling. Includes clear coverage of relational database concepts as well as the latest developments in SQL, XML, information modeling, data exchange, and schema transformation. Case studies and a large number of class-tested exercises are provided for many topics. Includes all-new chapters on data file formats and NoSQL databases.

*Data Modeling Explained* Technics Publications

Solve all big data problems by learning how to create efficient data models  
 Key Features  
 Create effective models that get the most out of big data  
 Apply your knowledge to datasets from Twitter and weather data to learn big data  
 Tackle different data modeling challenges with expert techniques presented in this book  
 Book Description  
 Modeling and managing data is a central focus of all big data projects. In fact, a database is considered to be effective only if you have a logical and sophisticated data model. This book will help you develop practical skills in modeling your own big data projects and improve the performance of analytical queries for your specific business requirements. To start with,

you'll get a quick introduction to big data and understand the different data modeling and data management platforms for big data. Then you'll work with structured and semi-structured data with the help of real-life examples. Once you've got to grips with the basics, you'll use the SQL Developer Data Modeler to create your own data models containing different file types such as CSV, XML, and JSON. You'll also learn to create graph data models and explore data modeling with streaming data using real-world datasets. By the end of this book, you'll be able to design and develop efficient data models for varying data sizes easily and efficiently. What you will learn  
 Get insights into big data and discover various data models  
 Explore conceptual, logical, and big data models  
 Understand how to model data containing different file types  
 Run through data modeling with examples of Twitter, Bitcoin, IMDB and weather data modeling  
 Create data models such as Graph Data and Vector Space  
 Model structured and unstructured data using Python and R  
 Who this book is for  
 This book is great for programmers, geologists, biologists, and every professional who

deals with spatial data. If you want to learn how to handle GIS, GPS, and remote sensing data, then this book is for you. Basic knowledge of R and QGIS would be helpful.

[DATA MODELER'S WORKBENCH: TOOLS AND TECHNIQUES FOR ANALYSIS AND DESIGN](#) Elsevier

This is the eighth 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](http://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. Three case studies and many exercises

reinforce the material and will enable you to apply these techniques in your current projects. Top 5 Objectives Determine how and when to use each data modeling component Apply techniques to elicit data requirements as a prerequisite to building a data model Build relational and dimensional conceptual, logical, and physical data models Incorporate supportability and extensibility features into the data model Assess the quality of a data model.

**Data Modeling Essentials** Addison-Wesley Professional

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.

[Data Modeling Master Class Training Manual](#) Morgan Kaufmann

This is the ninth 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](http://stevehoberman.com).

*Data Modeling Essentials* Technics Publications, LLC

"The Data Modeling 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. This video contains the physical data modeling module. For more on the Data Modeling Master Class, please visit [SteveHoberman.com](http://SteveHoberman.com). Learn all about physical data modeling. The techniques of denormalizing, indexing, building views, and creating partitions are covered. Learn about the five different types of denormalization: standard, FUBES, repeating attributes, aggregation, and summarization. Understand both horizontal and vertical partitioning. Master several dimensional modeling concepts including star schemas, snowflakes, degenerate dimensions, junk dimensions, and slowly changing dimensions."-- Resource description page.

[Data Modeling Made Simple with Erwin DM](#) Elsevier

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.

**Data Modeling Master Class Training Manual 5th Edition** Packt Publishing Ltd

"The Data Modeling 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. This video contains a majority of the content from the first module in this course. For more on the Data Modeling Master Class, please visit [SteveHoberman.com](http://SteveHoberman.com). This video provides an introduction into the field of data modeling by defining data model concepts and terms, along with why the data modeling process is so important and warnings of pitfalls to avoid. Shortly after the video starts, you will complete a very important exercise illustrating the four important gaps filled by data models. Next, we will explain data modeling concepts and terminology including entities, attributes, relationships, candidate keys, and subtypes, and provide

you with a set of questions you can ask to quickly and precisely build a data model. Demonstrate reading a data model of any size and complexity with the same confidence as reading a book. We will complete several exercises, including one on creating a data model based upon an existing set of data."--Resource description page.

*Mastering Data Modeling Technics* Publications LLC

A training manual for the Data Modelling Master Class. It includes a course on requirements gathering and data modelling, containing four days of practical techniques for producing solid relational and dimensional data models.

*Hands-On Big Data Modeling Technics* Publications LLC

"An enterprise data model (EDM) is a subject-oriented and integrated data model representing all of the data produced and consumed across an entire organization. Subject-oriented means that the concepts on a data model fit together as the CEO sees the company, as opposed to how individual functional or department heads see their view of the company. Integration means that all of the data and

rules in an organization are depicted once and fit together seamlessly. Learn all about the EDM and its use cases in this video, which was recorded live during Steve Hoberman's Data Modeling Master Class."--Resource description page.

*A Developer's Guide to Data Modeling for SQL Server* Addison-Wesley Professional

Data modeling is one of the most critical phases in the database application development process, but also the phase most likely to fail. A master data modeler must come into any organization, understand its data requirements, and skillfully model the data for applications that most effectively serve organizational needs. Mastering Data Modeling is a complete guide to becoming a successful data modeler. Featuring a requirements-driven approach, this book clearly explains fundamental concepts, introduces a user-oriented data modeling notation, and describes a rigorous, step-by-step process for collecting, modeling, and documenting the kinds of data that users need. Assuming no prior knowledge, Mastering Data Modeling sets forth several fundamental problems of data modeling, such as reconciling the software



developer's demand for rigor with the users' equally valid need to speak their own (sometimes vague) natural language. In addition, it describes the good habits that help you respond to these fundamental problems. With these good habits in mind, the book describes the Logical Data Structure (LDS) notation and the process of controlled evolution by which you can create low-cost, user-approved data models that resist premature obsolescence. Also included is an encyclopedic analysis of all data shapes that you will encounter. Most notably, the book describes The Flow, a loosely scripted process by which you and the users gradually but continuously improve an LDS until it faithfully represents the information needs. Essential implementation and technology issues are also covered. You will learn about such vital topics as: The fundamental problems of data modeling The good habits that help a data modeler be effective and economical LDS notation, which encourages these good habits How to read an LDS aloud--in declarative English sentences How to write a well-formed (syntactically correct) LDS How to get

users to name the parts of an LDS with words from their own business vocabulary How to visualize data for an LDS A catalog of LDS shapes that recur throughout all data models The Flow--the template for your conversations with users How to document an LDS for users, data modelers, and technologists How to map an LDS to a relational schema How LDS differs from other notations and why "Story interludes" appear throughout the book, illustrating real-world successes of the LDS notation and controlled evolution process. Numerous exercises help you master critical skills. In addition, two detailed, annotated sample conversations with users show you the process of controlled evolution in action. Data Modeling Made Simple North Holland 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.

*Data Modeling Fundamentals* Technics Publications, LLC

The nature of an information system; Naming; Relationships; Attributes; Types and categories and sets; Models; The record model; The other three popular models; The modelling of relationships; Elementary concepts; Philosophy.

The Data Model Resource Book, Volume 1 John Wiley & Sons

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 for MongoDB John Wiley & Sons

Annotation 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.