

Download Data Modeling Made Simple With Embarcadero Erstudio Data Architect Adapting To Agile Data Modeling In A Big Data World

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Data Modeling Made Simple-Steve Hoberman
2009 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 Made Simple-Steve Hoberman
2015-12-29 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 Made Simple with CA ERwin Data Modeler R8-Donna Burbank 2011 Learn how to do data modeling using CA ERwin Data Modeler r8!

Data Modeling Made Simple with Erwin DM-Harris Jeff 2020-06

Data Modeling Made Simple with CA ERwin Data Modeler r8-Donna Burbank 2011-08-01 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 Made Simple with PowerDesigner-Steve Hoberman 2011-04-01
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 features 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,

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 with ER/Studio

Data Architect-Steve Hoberman 2015-11-06

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 Made Simple with

PowerDesigner-Steve Hoberman 2011

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 for the Business-Steve Hoberman 2009-04-01 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

Patterns of Data Modeling-Michael Blaha
2010-06-01 Best-selling author and database expert with more than 25 years of experience modeling application and enterprise data, Dr. Michael Blaha provides tried and tested data model patterns, to help readers avoid common modeling mistakes and unnecessary frustration on their way to building effective data models. Unlike the typical methodology book, Patterns of Data Modeling provides advanced techniques for those who have mastered the basics. Recognizing that database representation sets the path for software, determines its flexibility, affects its quality, and influences whether it succeeds or fails, the text focuses on databases rather than programming. It is one of the first books to apply the popular patterns perspective to database

systems and data models. It offers practical advice on the core aspects of applications and provides authoritative coverage of mathematical templates, antipatterns, archetypes, identity, canonical models, and relational database design.

Data Modeling Essentials-Graeme Simsion
2004-12-03 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 Made Simple with Embarcadero ER/Studio Data Architect-Steve Hoberman 2015-10 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

The Data Model Resource Book, Volume 1-

Len Silverston 2011-08-08 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.

Mastering Data Modeling-

John Carlis 2000-11-10 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 Theory and Practice-Graeme

Simsion 2007-03-01 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 Simsion 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.

Data Model Scorecard-Steve Hoberman
2015-11-01 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).

The Rosedata Stone: Achieving a Common Business Language using the Business

Terms Model-Steve Hoberman 2020-03-05

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.

Data Modeling for MongoDB-Steve Hoberman
2014-06-01 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.

Domain Modeling Made Functional-Scott Wlaschin 2018-01-25 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 Visualization Made Simple-Kristen Sosulski 2018-09-27 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.

Data Modeling Fundamentals-Paulraj Ponniah 2007-06-30 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.

Hands-On Big Data Modeling-James Lee
2018-11-30 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 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.

R for Data Science-Hadley Wickham
2016-12-12 "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"--

Data Modeling, A Beginner's Guide-Andy Oppel
2009-11-23 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.

NoSQL and SQL Data Modeling-Ted Hills

2016-04-01 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 technospeak 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

After Action Review-Artie Mahal 2018-02-15

Master the After Action Review (AAR) to improve the outcome of any personal or professional activity. From the beginning of time, humans have survived and thrived by learning from their experiences - both good and bad - and then tweaked their actions for better results next time. This continual quest for improvement stems from the difference between "what was" and "what could be." Even if we're not consciously aware of it, we're constantly seeking improvement in this very same way. If we turn to this analysis in a more intentional and methodical way, with an eye towards continuous improvement (CI), then next time around the outcomes can be more rewarding and desirable. After Action Review (AAR) is a continuous improvement approach for reflecting on the work of a group or team. Learn how to apply both informal and formal AAR approaches. Along with a complete walkthrough, the book includes

resources and materials you can use in your work right now. For example, the Group Insights template will help you distinguish "likes" from "wishes," and the Planning Template will show you how to optimize the time spent during the AAR. Chapter 1 covers basic facilitation skills needed to conduct an AAR including active listening, questioning, information gathering and analysis, public speaking, presenting, intervening, and managing group dynamics. Chapter 2 explains the AAR in detail including its value proposition and frameworks. Chapter 3 explores the informal AAR and Chapter 4 the formal AAR.

MongoDB Recipes-Subhashini Chellappan

2019-12-13 Get the most out of MongoDB using a problem-solution approach. This book starts with recipes on the MongoDB query language, including how to query various data structures stored within documents. These self-contained code examples allow you to solve your MongoDB problems without fuss. MongoDB Recipes

describes how to use advanced querying in MongoDB, such as indexing and the aggregation framework. It demonstrates how to use the Compass function, a GUI client interacting with MongoDB, and how to apply data modeling to your MongoDB application. You'll see recipes on the latest features of MongoDB 4 allowing you to manage data in an efficient manner using MongoDB. What You Will Learn Work with the MongoDB document model Design MongoDB schemas Use the MongoDB query language Harness the aggregation framework Create replica sets and sharding in MongoDB Who This Book Is For Developers and professionals who work with MongoDB.

The Data Model Resource Book-Len Silverston 2009-01-09 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

Modeling with Data-Ben Klemens 2008-10-06
Modeling with Data fully explains how to execute computationally intensive analyses on very large data sets, showing readers how to determine the best methods for solving a variety of different problems, how to create and debug statistical models, and how to run an analysis and evaluate the results. Ben Klemens introduces a set of open and unlimited tools, and uses them to demonstrate data management, analysis, and simulation techniques essential for dealing with large data sets and computationally intensive procedures. He then demonstrates how to easily apply these tools to the many threads of statistical technique, including classical,

Bayesian, maximum likelihood, and Monte Carlo methods. Klemens's accessible survey describes these models in a unified and nontraditional manner, providing alternative ways of looking at statistical concepts that often befuddle students. The book includes nearly one hundred sample programs of all kinds. Links to these programs will be available on this page at a later date. Modeling with Data will interest anyone looking for a comprehensive guide to these powerful statistical tools, including researchers and graduate students in the social sciences, biology, engineering, economics, and applied mathematics.

Modeling Longitudinal Data-Robert E. Weiss 2006-12-06
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 reinforce 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.

Agile Data Warehouse Design-Lawrence Corr
2011-11 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.

Growing Business Intelligence-Larry Burns
2016-09-23 How do we enable our organizations to enjoy the often significant benefits of BI and analytics, while at the same time minimizing the cost and risk of failure? In this book, I am not going to try to be prescriptive; I won't tell you exactly how to build your BI environment. Instead, I am going to focus on a few core principles that will enable you to navigate the rocky shoals of BI architecture and arrive at a

destination best suited for your particular organization. Some of these core principles include:

- Have an overarching strategy, plan, and roadmap
- Recognize and leverage your existing technology investments
- Support both data discovery and data reuse
- Keep data in motion, not at rest
- Separate information delivery from data storage
- Emphasize data transparency over data quality
- Take an agile approach to BI development.

This book will show you how to successfully navigate both the jungle of BI technology and the minefield of human nature. It will show you how to create a BI architecture and strategy that addresses the needs of all organizational stakeholders. It will show you how to maximize the value of your BI investments. It will show you how to manage the risk of disruptive technology. And it will show you how to use agile methodologies to deliver on the promise of BI and analytics quickly, succinctly, and iteratively. This book is about many things. But principally, it's about success. The goal of any enterprise initiative is to succeed and to derive benefit—benefit that all

stakeholders can share in. I want you to be successful. I want your organization to be successful. This book will show you how. This book is for anyone who is currently or will someday be working on a BI, analytics, or Big Data project, and for organizations that want to get the maximum amount of value from both their data and their BI technology investment. This includes all stakeholders in the BI effort—not just the data people or the IT people, but also the business stakeholders who have the responsibility for the definition and use of data. There are six sections to this book: In Section I, What Kind of Garden Do You Want?, we will examine the benefits and risks of Business Intelligence, making the central point that BI is a business (not IT) process designed to manage data assets in pursuit of enterprise goals. We will show how data, when properly managed and used, can be a key enabler of several types of core business processes. The purpose of this section is to help you define the particular benefit(s) you want from BI. In Section II, Building the Bones, we will talk about how to

design and build out the “hardscape” (infrastructure) of your BI environment. This stage of the process involves leveraging existing technology investments and iteratively moving toward your desired target state BI architecture. In Section III, From the Ground Up, we explore the more detailed aspects of implementing your BI operational environment. In Section IV, Weeds, Pests and Critters, we talk about the myriad of things that can go wrong on a BI project, and discuss ways of mitigating these risks. In Section V, The Sustainable Garden, we talk about how to create a BI infrastructure that is easy and inexpensive to maintain. Finally, Section VI presents a case study illustrating the principles of this book, as applied to a fictional manufacturing company (the Blue Moon Guitar Company).

The Data Model Resource Book-Len

Silverston 2011-03-21 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.

Cassandra: The Definitive Guide—Jeff Carpenter 2016-06-29 Imagine what you could do if scalability wasn't a problem. With this hands-on guide, you'll learn how the Cassandra database management system handles hundreds of terabytes of data while remaining highly available across multiple data centers. This expanded second edition—updated for Cassandra 3.0—provides the technical details and practical examples you need to put this database to work

in a production environment. Authors Jeff Carpenter and Eben Hewitt demonstrate the advantages of Cassandra's non-relational design, with special attention to data modeling. If you're a developer, DBA, or application architect looking to solve a database scaling issue or future-proof your application, this guide helps you harness Cassandra's speed and flexibility. Understand Cassandra's distributed and decentralized structure Use the Cassandra Query Language (CQL) and cqlsh—the CQL shell Create a working data model and compare it with an equivalent relational model Develop sample applications using client drivers for languages including Java, Python, and Node.js Explore cluster topology and learn how nodes exchange data Maintain a high level of performance in your cluster Deploy Cassandra on site, in the Cloud, or with Docker Integrate Cassandra with Spark, Hadoop, Elasticsearch, Solr, and Lucene

Python for Data Analysis—Wes McKinney 2017-09-25 Get complete instructions for

manipulating, processing, cleaning, and crunching datasets in Python. Updated for Python 3.6, the second edition of this hands-on guide is packed with practical case studies that show you how to solve a broad set of data analysis problems effectively. You'll learn the latest versions of pandas, NumPy, IPython, and Jupyter in the process. Written by Wes McKinney, the creator of the Python pandas project, this book is a practical, modern introduction to data science tools in Python. It's ideal for analysts new to Python and for Python programmers new to data science and scientific computing. Data files and related material are available on GitHub. Use the IPython shell and Jupyter notebook for exploratory computing

Learn basic and advanced features in NumPy (Numerical Python) Get started with data analysis tools in the pandas library Use flexible tools to load, clean, transform, merge, and reshape data Create informative visualizations with matplotlib Apply the pandas groupby facility to slice, dice, and summarize datasets Analyze and manipulate regular and irregular time series

data Learn how to solve real-world data analysis problems with thorough, detailed examples

Design Patterns-Erich Gamma 1994-10-31 Capturing a wealth of experience about the design of object-oriented software, four top-notch designers present a catalog of simple and succinct solutions to commonly occurring design problems. Previously undocumented, these 23 patterns allow designers to create more flexible, elegant, and ultimately reusable designs without having to rediscover the design solutions themselves. The authors begin by describing what patterns are and how they can help you design object-oriented software. They then go on to systematically name, explain, evaluate, and catalog recurring designs in object-oriented systems. With Design Patterns as your guide, you will learn how these important patterns fit into the software development process, and how you can leverage them to solve your own design problems most efficiently. Each pattern describes the circumstances in which it is applicable, when

it can be applied in view of other design constraints, and the consequences and trade-offs of using the pattern within a larger design. All patterns are compiled from real systems and are based on real-world examples. Each pattern also includes code that demonstrates how it may be implemented in object-oriented programming languages like C++ or Smalltalk.

Spark: The Definitive Guide-Bill Chambers
2018-02-08 Learn how to use, deploy, and maintain Apache Spark with this comprehensive guide, written by the creators of the open-source cluster-computing framework. With an emphasis on improvements and new features in Spark 2.0, authors Bill Chambers and Matei Zaharia break down Spark topics into distinct sections, each with unique goals. You'll explore the basic operations and common functions of Spark's structured APIs, as well as Structured Streaming, a new high-level API for building end-to-end streaming applications. Developers and system administrators will learn the fundamentals of

monitoring, tuning, and debugging Spark, and explore machine learning techniques and scenarios for employing MLlib, Spark's scalable machine-learning library. Get a gentle overview of big data and Spark Learn about DataFrames, SQL, and Datasets—Spark's core APIs—through worked examples Dive into Spark's low-level APIs, RDDs, and execution of SQL and DataFrames Understand how Spark runs on a cluster Debug, monitor, and tune Spark clusters and applications Learn the power of Structured Streaming, Spark's stream-processing engine Learn how you can apply MLlib to a variety of problems, including classification or recommendation

The Data Warehouse Toolkit-Ralph Kimball
2011-08-08