

## Data Models And Decisions The Fundamentals Of

*Combines topics from two traditionally distinct quantitative subjects, probability/statistics and management science/optimization, in a unified treatment of quantitative methods and models for management. Stresses those fundamental concepts that are most important for the practical analysis of management decisions: modeling and evaluating uncertainty explicitly, understanding the dynamic nature of decision-making, using historical data and limited information effectively, simulating complex systems, and allocating scarce resources optimally.*

*“Get it done well and get it done fast” are twin, apparently opposing, demands. Data architects are increasingly expected to deliver quality data models in challenging timeframes, and agile developers are increasingly expected to ensure that their solutions can be easily integrated with the data assets of the overall organization. If you need to deliver quality solutions despite exacting schedules, “The Nimble Elephant” will help by describing proven techniques that leverage the libraries of published data model patterns to rapidly assemble extensible and robust designs. The three sections in the book provide guidelines for applying the lessons to your own situation, so that you can apply the techniques and patterns immediately to your current assignments. The first section, Foundations for Data Agility, addresses some perceived aspects of friction between “data” and “agile” practitioners. As a starting point for resolving the differences, pattern levels of granularity are classified, and their interdependencies exposed. A context of various types of models is established (e.g. conceptual / logical / physical, and industry / enterprise / project), and you will learn how to customize patterns within specific model types. The second section, Steps Towards Data Agility, shares guidelines on generalizing and specializing, with cautions on the dangers of going too far. Creativity in using patterns beyond their intended purpose is encouraged. The short-term “You Ain’t Gonna Need It” (YAGNI) philosophy of agile practitioners, and the longer-term strategic perspectives of architects, are compared and evaluated. Consideration is given to the potential of enterprise views contributing to project-specific models. Other topics include industry models, iterative modeling, creation of patterns when none exist, and patterns for rules-in-data. The section ends with a perspective on the modeler’s possible role in agile projects, followed by a case study. The final section, A Bridge to the Land of Object Orientation, provides a pathway for re-skilling traditional data modelers who want to expand their options by actively engaging with the ranks of object-oriented developers. I’m delighted to see that John has put his extensive experience and broad knowledge of data modeling into print! John’s ability to simplify the complex, and to share his knowledge and enthusiasm – and humor – with colleagues, comes through in this very useful and readable book. I recommend it to anyone working with data. — Monika Remenyi, Senior Data Architect, Telstra John Giles has written a compelling and engaging book about the importance of data modeling patterns in the world of agile computing. His book is clearly and simply written, and it is full of excellent examples drawn from his extensive experience as a practitioner. You will see the enthusiasm and passion that John clearly has for his work in data modeling. And you will see in his book that any interchange with John will always have its fair share of good humor and wisdom! — Professor Ron Weber, Dean, Faculty of IT, Monash University*

*Managing Data in Motion describes techniques that have been developed for significantly reducing the complexity of managing system interfaces and enabling scalable architectures. Author April Reeve brings over two decades of experience to present a vendor-neutral approach to moving data between computing environments and systems. Readers will learn the techniques, technologies, and best practices for managing the passage of data between computer systems and integrating disparate data together in an enterprise environment. The average enterprise’s computing environment is comprised of hundreds to thousands computer systems that have been built, purchased, and acquired over time. The data from these various systems needs to be integrated for reporting and analysis, shared for business transaction processing, and converted from one format to another when old systems are replaced and new systems are acquired. The management of the “data in motion” in organizations is rapidly becoming one of the biggest concerns for business and IT management. Data warehousing and conversion, real-time data integration, and cloud and “big data” applications are just a few of the challenges facing organizations and businesses today. Managing Data in Motion tackles these and other topics in a style easily understood by business and IT managers as well as programmers and architects. Presents a vendor-neutral overview of the different technologies and techniques for moving data between computer systems including the emerging solutions for unstructured as well as structured data types Explains, in non-technical terms, the architecture and components required to perform data integration Describes how to reduce the complexity of managing system interfaces and enable a scalable data architecture that can handle the dimensions of “Big Data”*

*For MIS specialists and nonspecialists alike, a comprehensive, readable, understandable guide to the concepts and applications of decision support systems.*

*A Flaw in Human Judgment*

*Data Modeling for MongoDB*

*11th International Conference, MDAI 2014, Tokyo, Japan, October 29-31, 2014, Proceedings*

*The Nimble Elephant*

*Head First Data Analysis*

*The Data Model Resource Book, Volume 1*

*Data Integration Best Practice Techniques and Technologies*

Updated new edition of Ralph Kimball’s groundbreaking book ondimensional modeling for data warehousing and businessintelligence! The first edition of Ralph Kimball’s The Data WarehouseToolkit introduced the industry to dimensional modeling,and now his books are considered the most authoritative guides inthis space. This new third edition is a complete library of updateddimensional modeling techniques, the most comprehensive collectionever. It covers new and enhanced star schema dimensional modelingpatterns, adds two new chapters on ETL techniques, includes new andexpanded business matrices for 12 case studies, and more. Authored by Ralph Kimball and Margy Ross, known worldwide aseducators, consultants, and influential thought leaders in datawarehousing and business intelligence Begins with fundamental design recommendations and progressesthrough increasingly complex scenarios Presents unique modeling techniques for business applicationssuch as inventory management, procurement, invoicing, accounting,customer relationship management, big data analytics, and more Draws real-world case studies from a variety of industries,including retail sales, financial services, telecommunications,education, health care, insurance, e-commerce, and more Design dimensional databases that are easy to understand andprovide fast query response with The Data WarehouseToolkit: The Definitive Guide to Dimensional Modeling, 3rdEdition.

A COMPLETE UPDATE AND REVISION OF THE CLASSIC TEXT “At last, a manual of operations for comparing the cost-effectiveness of a preventive service with a treatment intervention.” --American Journal of Preventive Medicine Twenty years after the first edition of COST-EFFECTIVENESS IN HEALTH AND MEDICINE established the practical benchmark for cost-effectiveness analysis, this completely revised edition of the classic text provides an essential resource to a new generation of practitioners, students, researchers, and policymakers. Produced by the Second Panel on Cost-Effectiveness in Health and Medicine--a team of 13 experts from fields including decision science, economics, ethics, psychology, and medicine--this new edition is a comprehensive guide to the use of cost-effectiveness analysis as an evaluative tool at the institutional and policy levels. As health care systems face increasing pressure to derive maximum value from expenditures, the guidelines in this new text represent not just the best information available, but a vital guide to health care decision-making in a challenging new era. Completely revised and enriched with examples and expanded coverage, this second edition of COST-EFFECTIVENESS IN HEALTH AND MEDICINE builds on its predecessor’s excellence, offering required reading for both analysts and decision makers.

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

This practical, field-tested reference doesn’t just explain the characteristics of finished, high-quality data models--it shows readers exactly how to build one. It presents rules and best practices in several notations, including IDEFIX, Martin, Chen, and Finkelstein. The book offers dozens of real-world examples and go beyond basic theory to provide users with practical guidance.

Agile Delivery of Data Models using a Pattern-based Approach

Translating Statistics to Make Decisions

A Handbook for Aligning the Business with IT using High-Level Data Models

Applying the Industry Standard on Data Model Quality

A Learner’s Guide to Big Numbers, Statistics, and Good Decisions

Data Modeling for the Business

Loss Models

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.

From the Nobel Prize-winning author of Thinking, Fast and Slow and the coauthor of Nudge, a revolutionary exploration of why people make bad judgments and how to make better ones--“a tour de force” (New York Times). Imagine that two doctors in the same city give different diagnoses to identical patients—or that two judges in the same courthouse give markedly different sentences to people who have committed the same crime. Suppose that different interviewers at the same firm make different decisions about indistinguishable job applicants—or that when a company is handling customer complaints, the resolution depends on who happens to answer the phone. Now imagine that the same doctor, the same judge, the same interviewer, or the same customer service agent makes different decisions depending on whether it is morning or afternoon, or Monday rather than Wednesday. These are examples of noise: variability in judgments that should be identical. In Noise, Daniel Kahneman, Olivier Sibony, and Cass R. Sunstein show the detrimental effects of noise in many fields, including medicine, law, economic forecasting, forensic science, bail, child protection, strategy, performance reviews, and personnel selection. Wherever there is judgment, there is noise. Yet, most of the time, individuals and organizations alike are unaware of it. They neglect noise. With a few simple remedies, people can reduce both noise and bias, and so make far better decisions. Packed with original ideas, and offering the same kinds of research-based insights that made Thinking, Fast and Slow and Nudge groundbreaking New York Times bestsellers, Noise explains how and why humans are so susceptible to noise in judgment—and what we can do about it.

This open access book aims to set an agenda for research and action in the field of Digital Humanism through short essays written by selected thinkers from a variety of disciplines, including computer science, philosophy, education, law, economics, history, anthropology, political science, and sociology. This initiative emerged from the Vienna Manifesto on Digital Humanism and the associated lecture series. Digital Humanism deals with the complex relationships between people and machines in digital times. It acknowledges the potential of information technology. At the same time, it points to societal threats such as privacy violations and ethical concerns around artificial intelligence, automation and loss of jobs, ongoing monopolization on the Web, and sovereignty. Digital Humanism aims to address these topics with a sense of urgency but with a constructive mindset. The book argues for a Digital Humanism that analyses and, most importantly, influences the complex interplay of technology and humankind toward a better society and life while fully respecting universal human rights. It is a call to shaping technologies in accordance with human values and needs.

This book constitutes the proceedings of the 11th International Conference on Modeling Decisions for Artificial Intelligence, MDAI 2014, held in Tokyo, Japan, in October 2014. The 19 revised full papers presented together with an invited paper were carefully reviewed and selected from 38 submissions. They deal with the theory and tools for modeling decisions, as well as applications that encompass decision making processes and information fusion techniques and are organized in topical sections on aggregation operators and decision making, optimization, clustering and similarity, and data mining and data privacy.

The Fundamentals of Management Science

A Business Logic Framework Linking Business and Technology

Concepts and Resources for Managers

Data Model Scorecard

Link

The Decision Model

Distributed Data at Web Scale

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

Data, Models, and DecisionsThe Fundamentals of Management ScienceIngram

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

Written in plain English and based on successful client engagements, Data Modeling of Financial Derivatives: A Conceptual Approach introduces new and veteran data modelers, financial analysts, and IT professionals to the fascinating world of financial derivatives. Covering futures, forwards, options, swaps, and forward rate agreements, finance and modeling expert Robert Mamayev shows you step-by-step how to structure and describe financial data using advanced data modeling techniques. The book introduces IT professionals, in particular, to various financial and data modeling concepts that they may not have seen before, giving them greater proficiency in the financial language of derivatives—and greater ability to communicate with financial analysts without fear or hesitation. Such knowledge will be especially useful to those looking to pick up the necessary skills to become productive right away working in the financial sector. Financial analysts reading this book will come to grips with various data modeling concepts and therefore be in better position to explain the underlying business to their IT audience. Data Modeling of Financial Derivatives—which presumes no advanced knowledge of derivatives or data modeling—will help you: Learn the best entity–relationship modeling method out there—Barker’s CASE methodology—and its application in the financial industry Understand how to identify and creatively reuse data modeling patterns Gain an understanding of financial derivatives and their various applications Learn how to model derivatives contracts and understand the reasoning behind certain design decisions Resolve derivatives data modeling complexities parsimoniously so that your clients can understand them intuitively Packed with numerous examples, diagrams, and techniques, this book will enable you to recognize the various design patterns that you are most likely to encounter in your professional career and apply them successfully in practice. Anyone working with financial models will find it an invaluable tool and career booster. What you’ll learnYou will learn how to: Recognize and identify financial derivatives Reuse data modeling patterns and apply them to create something new Data model simple and complex options Data model SWAPS Data model futures and forward contracts Who this book is for Data modelers, financial analysts, IT professionals, and anyone with an interest in data modeling and business analysis. Table of Contents Introduction Notation Financial Contracts Primer Modeling Forward Contracts Modeling Futures Contracts Modeling Options Advanced Options Modeling – Designing Trading Strategies Swaps and Forward Rate Agreements (FRAs) Finishing Thoughts

The Data Modeling Handbook

A User Driven Approach

Modeling Decisions for Artificial Intelligence

Hadoop Application Architectures

The Little Book of Big Decision Models

Mastering Data Modeling

A Guide for the Non-Statistician

This book is about marketing models and the process of model building. Our primary focus is on models that can be used by managers to support marketing decisions. It has long been known that simple models usually outperform judgments in predicting outcomes in a wide variety of contexts. For example, models of judgments tend to provide better forecasts of the outcomes than the judgments themselves (because the model eliminates the noise in judgments). And since judgments never fully reflect the complexities of the many forces that influence outcomes, it is easy to see why models of actual outcomes should be very attractive to (marketing) decision makers. Thus, appropriately constructed models can provide insights about structural relations between marketing variables. Since models explicate the relations, both the process of model building and the model that ultimately results can improve the quality of marketing decisions. Managers often use rules of thumb for decisions. For example, a brand manager will have defined a specific set of alternative brands as the competitive set within a product category. Usually this set is based on perceived similarities in brand characteristics, advertising messages, etc. If a new marketing initiative occurs for one of the other brands, the brand manager will have a strong inclination to react. The reaction is partly based on the manager’s desire to maintain some competitive parity in the marketing variables.

Focusing on life insurance and pensions, this book addresses various aspects of modelling in modern insurance: insurance liabilities; asset-liability management; securitization, hedging, and investment strategies. With contributions from internationally renowned academics in actuarial science, finance, and management science and key people in major life insurance and reinsurance companies, there is expert coverage of a wide range of topics, for example: models in life insurance and their roles in decision making; an account of the contemporary history of insurance and life insurance mathematics; choice, calibration, and evaluation of models; documentation and quality checks of data; new insurance regulations and accounting rules; cash flow projection models; economic scenario generators; model uncertainty and model risk; model-based decision-making at line management level; models and behaviour of stakeholders. With author profiles ranging from highly specialized model builders to decision makers at chief executive level, this book should prove a useful resource to students and academics of actuarial science as well as practitioners.

This book covers the underlying science and application issues related to aggregation operators, focusing on tools used in practical applications that involve numerical information. It will thus be required reading for engineers, statisticians and computer scientists of all kinds. Starting with detailed introductions to information fusion and integration, measurement and probability theory, fuzzy sets, and functional equations, the authors then cover numerous topics in detail, including the synthesis of judgements, fuzzy measures, weighted means and fuzzy integrals.

Work with data like a pro using this guide that breaks down how to organize, apply, and most importantly, understand what you are analyzing in order to become a true data ninja. From the stock market to genomics laboratories, census figures to marketing email blasts, we are awash with data. But as anyone who has ever opened up a spreadsheet packed with seemingly infinite lines of data knows, numbers aren’t enough: we need to know how to make those numbers talk. In The Model Thinker, social scientist Scott E. Page shows us the mathematical, statistical, and computational models—from linear regression to random walks and far beyond—that can turn anyone into a genius. At the core of the book is Page’s “many-model paradigm,” which shows the reader how to apply multiple models to organize the data, leading to wiser choices, more accurate predictions, and more robust designs. The Model Thinker provides a toolkit for business people, students, scientists, pollsters, and bloggers to make them better, clearer thinkers, able to leverage data and information to their advantage.

Data Driven Business Decisions

Decision Support Systems

The 70 most useful models to help you say Yes or No

Modeling Decisions

Models in Environmental Regulatory Decision Making

Student Solutions Manual to Accompany Loss Models

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 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 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 cover 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.

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 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 practical and human aspects of modeling, such as working with business specialists, managing change, and resolving conflict.

Developing High Quality Data Models provides an introduction to the key principles of data modeling. It explains the purpose of data models in both developing an Enterprise Architecture and in supporting Information Quality; common problems in data model development; and how quality data models, in particular conceptual, integration, and enterprise data models. The book is organized into four parts. Part 1 provides an overview of data models and data modeling including the basics of data model notation; types and uses of data models; and the place of enterprise architecture. Part 2 introduces some general principles for data models, including principles for developing ontologically based data models; and applications of the principles for attributes, relationship types, and entity types. Part 3 presents an ontological framework for consistent data models. Part 4 provides the full data model that has been in development throughout the book. The model was created using Jotne EPM Technologys EDMVisualExpress data modeling tool. This book was designed for all types of modelers: from those who understand the basics but are just starting to learn about data modeling in practice, through to experienced data modelers seeking to expand their knowledge and skills and solve some of the more challenging problems of data modeling. Uses a number of common data model patterns to explain models over a wide scope in a way that is consistent and of high quality Offers generic data model templates that are reusable in many applications and are fundamental for developing more specific templates Develops ideas for creating consistent approaches to high quality data A hands-on guide to the use of quantitative methods and software for making successful business decisions The appropriate use of quantitative methods lies at the core of successful decisions made by managers, researchers, and students in the field of business. Providing a framework for the development of sound judgment and the ability to utilize quantitative and qualitative approaches. Data Driven Business Decisions introduces readers to the important role that data plays in understanding business outcomes, addressing four general areas that managers need to know: handling and Microsoft Excel®, uncertainty, the relationship between inputs and outputs, and complex decisions with trade-offs and uncertainty. Grounded in the author's own classroom approach to business statistics, the book reveals how to use data to understand the drivers which in turn allows for data-driven business decisions. A basic, non-mathematical foundation in statistics is provided, outlining for readers the tools needed to link data with business decisions: account for uncertainty in the actions of others and in patterns revealed by data; how to translate their analysis into simple business terms; and present results in simple tables and charts. The author discusses key data analytic frameworks, such as decision trees and multiple regression, and also explores additional topics, including: Use of the Excel® functions Solver Partial correlation and auto-correlation Interactions and proportional variation in regression models Seasonal adjustment and what it reveals Basic portfolio theory as an introduction to correlations Chapters are introduced with case studies that integrate simple ideas into the larger and are followed by further details, raw data, and motivating insights. Algebraic notation is used only when necessary, and throughout the book, the author utilizes real-world examples from diverse areas such as market surveys, finance, economics, and business ethics. Excel® and TreePlan are showcased to demonstrate execution of the techniques, and a related website features extensive programming instructions as well as insights, data sets, and solutions to problems included in the material. The enclosed CD contains the complete book in electronic format, presented data, supplemental material on the discussed case files, and links to exercises and solutions. Data Driven Business Decisions is an excellent book for MBA quantitative analysis courses or undergraduate general statistics courses. It also serves as a valuable reference for students and practitioners in the fields of statistics, business, and finance.

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 meet 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, structured approach 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 demanding but often 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 from 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 refine 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 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 notation 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" are included in 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 Essentials

Developing High Quality Data Models

From Data to Decisions

Information Fusion and Aggregation Operators

Perspectives on Digital Humanism

What You Need to Know to Make Data Work for You

How Decision Intelligence Connects Data, Actions, and Outcomes for a Better World

**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).**

**Why aren't the most powerful new technologies being used to solve the world's most important problems: hunger, poverty, conflict, employment, disease? In Link, Dr. Lorien Pratt answers these questions by exploring the solution that is emerging worldwide to take Artificial Intelligence to the next level: Decision Intelligence.**

**Examine and solve the common misconceptions and fallacies that non-statisticians bring to their interpretation of statistical results. Explore the many pitfalls that non-statisticians—and also statisticians who present statistical reports to non-statisticians—must avoid if statistical results are to be correctly used for evidence-based business decision making. Victoria Cox, senior statistician at the United Kingdom's Defence Science and Technology Laboratory (Dstl), distills the lessons of her long experience presenting the actionable results of complex statistical studies to users of widely varying statistical sophistication across many disciplines: from scientists, engineers, analysts, and information technologists to executives, military personnel, project managers, and officials across UK government departments, industry, academia, and international partners. The author shows how faulty statistical reasoning often undermines the utility of statistical results even among those with advanced technical training. Translating Statistics teaches statistically naive readers enough about statistical questions, methods, models, assumptions, and statements that they will be able to extract the practical message from statistical reports and better constrain what conclusions cannot be made from the results. To non-statisticians with some statistical training, this book offers brush-ups, reminders, and tips for the proper use of statistics and solutions to common errors. To fellow statisticians, the author demonstrates how to present statistical output to non-statisticians to ensure that the statistical results are correctly understood and properly applied to real-world tasks and decisions. The book avoids algebra and proofs, but it does supply code written in R for those readers who are motivated to work out examples. Pointing along the way to instructive examples of statistics gone awry, Translating Statistics walks readers through the typical course of a statistical study, progressing from the experimental design stage through the data collection process, exploratory data analysis, descriptive statistics, uncertainty, hypothesis testing, statistical modelling and multivariate methods, to graphs suitable for final presentation. The steady focus throughout the book is on how to turn the mathematical artefacts and specialist jargon that are second nature to statisticians into plain English for corporate customers and stakeholders. The final chapter neatly summarizes the book's lessons and insights for accurately communicating statistical reports to the non-statisticians who commission and act on them. What You'll Learn Recognize and avoid common errors and misconceptions that cause statistical studies to be misinterpreted and misused by non-statisticians in organizational settings Gain a practical understanding of the methods, processes, capabilities, and caveats of statistical studies to improve the application of statistical data to business decisions See how to code statistical solutions in R Who This Book Is For Non-statisticians—including both those with and without an introductory statistics course under their belts—who consume statistical reports in organizational settings, and statisticians who seek guidance for reporting statistical studies to non-statisticians in ways that will be accurately understood and will inform sound business and technical decisions**

**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.**

**Get the best out of Power BI by building optimized data models for reporting and business needs**

**Fundamentals of Management Science**

**Expert Data Modeling with Power BI**

**The Data Warehouse Toolkit**

**Noise**

**A Best-Practice Approach to Building Quality Data Models**

**Modelling in Life Insurance - A Management Perspective**

Many regulations issued by the U.S. Environmental Protection Agency (EPA) are based on the results of computer models. Models help EPA explain environmental phenomena in settings where direct observations are limited or unavailable, and anticipate the effects of agency policies on the environment, human health and the economy. Given the critical role played by models, the EPA asked the National Research Council to assess scientific issues related to the agency's selection and use of models in its decisions. The book recommends a series of guidelines and principles for improving agency models and decision-making processes. The centerpiece of the book's recommended vision is a life-cycle approach to model evaluation which includes peer review, corroboration of results, and other activities. This will enhance the agency's ability to respond to requirements from a 2001 law on information quality and improve policy development and implementation.

Introduces Java Data Objects and its capabilities, explains how to make classes persistent, how to configure JDO, how to make queries, how to perform transactions, and its use in Web applications and J2EE environments.

Wouldn't it be great to understand all the data in your organisation? Just imagine being able to define, agree and manage information concepts that impact on business strategy? Then imagine that these information concepts can be linked to the physical database attributes that ultimately are used to create them. That's what this book is about. It focuses on the data model as the foundation for achieving this understanding. This book provides a framework for the enterprise data model, the business reasons behind it and the differences between conceptual, logical and physical data models. The question of how, and why, to use a data model artifact as part of the data governance toolkit for the whole enterprise is also addressed. This publication is not an in-depth manual on how to model data for a new database system or your next design project. It instead focuses at a level above these implementation projects and addresses the issues that organisations typical struggling with such as: \* How do we provide a framework within which we can manage our data assets? \* How do we develop applications that adhere to a set of data standards; without creating a nightmare of administration and governance that is both unwieldy and unusable? \* How can we get business value from our enterprise data? Chapter headings are: \* Chapter 1 - Introduction \* Chapter 2 - Information and Data \* Chapter 3 - Pillars of Value \* Chapter 4 - An Overview of Data Modelling \* Chapter 5 - Data Architecture \* Chapter 6 - The Enterprise Data Model \* Chapter 7 - Build the Model one Project at a Time \* Chapter 8 - Master Data \* Chapter 9 - Data Governance \* Chapter 10 - The Enterprise Data Framework This 2nd edition revises the original text to add extra details around key areas such as the enterprise data model framework and the pillars of value. It also improves the quality of the original text.

In the current fast-paced and constantly changing business environment, it is more important than ever for organizations to be agile, monitor business performance, and meet with increasingly stringent compliance requirements. Written by pioneering consultants and bestselling authors with track records of international success, The Decision Model: A Business Logic Framework Linking Business and Technology provides a platform for rethinking how to view, design, execute, and govern business logic. The book explains how to implement the Decision Model, a stable, rigorous model of core business logic that informs current and emerging technology. The authors supply a strong theoretical foundation, while succinctly defining the path needed to incorporate agile and iterative techniques for developing a model that will be the cornerstone for continual growth. Because the book introduces a new model with tentacles in many disciplines, it is divided into three sections: Section 1: A Complete overview of the Decision Model and its place in the business and technology world Section 2: A Detailed treatment of the foundation of the Decision Model and a formal definition of the Model Section 3: Specialized topics of interest on the Decision Model, including both business and technical issues The Decision Model provides a framework for organizing business rules into well-formed decision-based structures that are predictable, stable, maintainable, and normalized. More than this, the Decision Model directly correlates business logic to the business drivers behind it, allowing it to be used as a lever for meeting changing business objectives and marketplace demands. This book not only defines the Decision Model and but also demonstrates how it can be used to organize decision structures for maximum stability, agility, and technology independence and provide input into automation design.

A Library of Universal Data Models for All Enterprises

A Conceptual Approach

Managing Data in Motion

Data, Models, and Decisions

Java Data Objects

Data Modeling and Database Design

The Model Thinker

**Leaders and Managers want quick answers, quick ways to reach solutions, ways and means to access knowledge that won't eat into their precious time and quick ideas that deliver a big result. The Little Book of Big Decision Models cuts through all the noise and gives managers access to the very best decision-making models that they need to to keep things moving forward. Every model is quick and easy to read and delivers the essential information and know-how quickly, efficiently and memorably.**

**Loss Models: From Data to Decisions, Fifth Edition continues to supply actuaries with a practical approach to the key concepts and techniques needed on the job. With updated material and extensive examples, the book successfully provides the essential methods for using available data to construct models for the frequency and severity of future adverse outcomes. The book continues to equip readers with the tools needed for the construction and analysis of mathematical models that describe the process by which funds flow into and out of an insurance system. Focusing on the loss process, the authors explore key quantitative techniques including random variables, basic distributional quantities, and the recursive method, and discuss techniques for classifying and creating distributions. Parametric, non-parametric, and Bayesian estimation methods are thoroughly covered along with advice for choosing an appropriate model. Throughout the book, numerous examples showcase the real-world applications of the presented concepts, with an emphasis on calculations and spreadsheet implementation. Loss Models: From Data to Decisions, Fifth Edition is an indispensable resource for students and aspiring actuaries who are preparing to take the SOA and CAS examinations. The book is also a valuable reference for professional actuaries, actuarial students, and anyone who works with loss and risk models.**

**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 model 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**

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

**Cassandra: The Definitive Guide**

**Cost-Effectiveness in Health and Medicine**

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**The Enterprise Data Model**

**Manage and work with business data effectively by learning data modeling techniques and leveraging the latest features of Power BI Key Features Understand data modeling techniques to get the best out of data using Power BI Define the relationships between data to extract valuable insights Solve a wide variety of business challenges by building optimal data models Book Description Microsoft Power BI is one of the most popular business intelligence tools available on the market for desktop and the cloud. This book will be your guide to understanding the ins and outs of data modeling and how to create data models using Power BI confidently. You'll learn how to connect data from multiple sources, understand data, define and manage relationships between data, and shape data models. In this book, you'll explore how to use data modeling and navigation techniques to define relationships and create a data model before defining new metrics and performing custom calculations using modeling features. As you advance through the chapters, the book will demonstrate how to create full-fledged data models, enabling you to create efficient data models and simpler DAX**

code with new data modeling features. With the help of examples, you'll discover how you can solve business challenges by building optimal data models and changing your existing data models to meet evolving business requirements. Finally, you'll learn how to use some new and advanced modeling features to enhance your data models to carry out a wide variety of complex tasks. By the end of this Power BI book, you'll have gained the skills you need to structure data coming from multiple sources in different ways to create optimized data models that support reporting and data analytics. What you will learn Implement virtual tables and time intelligence functionalities in DAX to build a powerful model Identify Dimension and Fact tables and implement them in Power Query Editor Deal with advanced data preparation scenarios while building Star Schema Explore best practices for data preparation and data modeling Discover different hierarchies and their common pitfalls Understand complex data models and how to decrease the level of model complexity with different data modeling approaches Who this book is for This MS Power BI book is for BI users, data analysts, and analysis developers who want to become well-versed with data modeling techniques to make the most of Power BI. Basic knowledge of Power BI and Star Schema will help you to understand the concepts covered in this book. A guide for data managers and analyzers shares guidelines for identifying patterns, predicting future outcomes, and presenting findings to others; drawing on current research in cognitive science and learning theory while covering such additional topics as assessing data quality, handling ambiguous information, and organizing data within market groups. Original. The Definitive Guide to Dimensional Modeling Semantic Modeling for Data