Data Modeling For MongoDB: Building Well Designed And Supportable MongoDB Databases

Use of big data has proven to be beneficial within many different industries, especially in the field of engineering; however, infiltration of this type of technology into more traditional heavy industries, such as the railways, has been limited. Innovative Applications of Big Data in the Railway Industry is a pivotal reference source for the latest research findings on the utilization of data sets in the railway industry. Featuring extensive coverage on relevant areas such as driver support systems, railway safety management, and obstacle detection, this publication is an ideal resource for transportation planners, engineers, policymakers, and graduate-level engineering students seeking current research on a specific application of big data and its effects on transportation.

Build a working knowledge of data modeling concepts and best practices, along with how to apply these principles with ER/Studio. This second edition includes numerous updates and new sections including an overview of ER/Studio's support for agile development, as well as a description of some of ER/Studio's newer features for NoSQL, such as MongoDB's containment structure. You will build many ER/Studio data models along the way, applying best practices to master these ten objectives: 1.Know why a data model is needed and which ER/Studio models are the most appropriate for each situation 2.Understand each component on the data model and how to represent and create them in ER/Studio 3.Know how to leverage ER/Studio's latest features including those assisting agile teams and forward and reverse engineering of NoSQL databases 4.Know how to apply all the foundational features of ER/Studio 5.Be able to build relational and dimensional conceptual, logical, and physical data models in ER/Studio 6.Be able to apply techniques such as indexing, transforms, and forward engineering to turn a logical data model into an efficient physical design 7.Improve data model quality and impact analysis results by leveraging ER/Studio's lineage functionality and compare/merge utility 8.Be able to apply ER/Studio's data dictionary features 9.Learn ways of sharing the data model through reporting and through exporting the model in a variety of formats 10.Leverage ER/Studio's naming functionality to improve naming consistency, including the new Automatic Naming Translation feature. This book contains four sections: Section I introduces data modeling and the ER/Studio landscape. Learn why data modeling is so critical to software development and even more importantly, why data modeling is so critical to understanding the business. You will learn about the newest features in ER/Studio (including features on big data and agile), and the ER/Studio environment. By the end of this sectio

This powerful new book introduces cross-platform app design as an excellent starting point for mastering app development. The book contains numerous applications that can be adapted to different projects. The book introduces HTML5, CSS3, JavaScript, jQuery Mobile, Node.js, JSON, localStorage, sessionStorage, NoSQL using MongoDB, SQL using MySQL, templating using handlebars, and maps. A strong app-centric view emphasizes appropriate subsets of these technologies to help readers develop non-trivial apps. While apps continue to evolve and change, the technologies presented form the backbone of future cross-platform app development. Readers learn to work with all major mobile and web platforms using the book's active learning approach that has users type code in parallel as apps are developed. Exercises further encourage readers to make changes to the code and evaluate resulting app behavior. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Summary Getting MEAN, Second Edition teaches you how to develop full-stack web applications using the MEAN stack. This edition was completely revised and updated to cover MongoDB 4, Express 4, Node 11, and the latest mainstream release of JavaScript ES2015. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Juggling languages mid-application can radically slow down a full-stack web project. The MEAN stack—MongoDB, Express, Angular, and Node—uses JavaScript end to end, maximizing developer productivity and minimizing context switching. And you'll love the results! MEAN apps are fast, powerful, and beautiful. About the Book Getting MEAN, Second Edition teaches you how to develop full-stack web applications using the MEAN stack. Practical from the very beginning, the book helps you create a static site in Express and Node. Expanding on that solid foundation, you'll integrate a MongoDB database, build an API, and add an authentication system. Along the way, you'll get countless pro tips for building dynamic and responsive data-driven web applications! What's inside MongoDB 4, Express 4, Angular 7, and Node.js 11 MEAN stack architecture Mobile-ready web apps Best practices for efficiency and reusability About the Reader Readers should be comfortable with standard web application designs and ES2015-style JavaScript. About the Author Simon Holmes and Clive Harber are full-stack developers with decades of experience in JavaScript and other leading-edge web technologies. Table of Contents PART 1 - SETTING THE BASELINE Introducing full-stack development Designing a MEAN stack architecture PART 2 - BUILDING A NODE WEB APPLICATION Creating and setting up a MEAN project Building a static site with Node and Express Building a data model with MongoDB and Mongoose Writing a REST API: Exposing the MongoDB database to the application Consuming a REST API: Using an API from inside Express PART 3 - ADDING A DYNAMIC FRONT END WITH ANGULAR Creating an Angular application with TypeScript Building a single-page application with Angular: Foundations Building a single-page application with Angular: The next level PART 4 - MANAGING AUTHENTICATION AND USER SESSIONS Authenticating users, managing sessions, and securing APIs Using an authentication API in Angular applications

MongoDB Fundamentals will get you started using MongoDB for data processing in a cloud computing environment. Starting with the fundamentals of NoSQL, you'll build up to learning advanced data manipulation techniques and application development with the help of hands-on case-studies.

A Guide to Modern Databases and the NoSQL Movement

Data Model Scorecard

NoSQL Distilled

Covers MongoDB version 3.0

Hands-On Big Data Modeling

Proceedings of the 6th International Technical Conference on Frontiers of HCET 2021

Mongoose for Application Development

Master a graph data modeling technique superior to traditional data modeling for both relational and NoSQL databases (graph, document, key-value, and column), leveraging cognitive psychology to improve big data designs. From Karen Lopez's Foreword: In this book, Thomas Frisendal continued usefulness of traditional data modeling notations and approaches: Are Entity Relationship Diagrams (ERDs) relevant to analytical data requirements? Are ERDs relevant in the new world of Big Data? Are ERDs still the best way to work with business users to understand Models too closely coupled? Are we correct in using the same notations for communicating with business users and developers? Should we refine our existing notations and tools to meet these new needs, or should we start again from a blank page? What new notations and a enterprise database systems? Frisendal takes us through the history of data modeling, enterprise data models and traditional modeling methods. He points out, quite contentiously, where he feels we have gone wrong and in a few places where we got it right. He then maps out identifying important issues about where data modeling may or may not fit in business modeling. The main subject of this work is a proposal for a new exploration-driven modeling approach and new modeling notations for business concept models, business solutions models, an leverage those for implementing into any target database or datastore. These new notations are based on a property graph approach to modeling data.

Build a variety of cross-platform applications with the world's most complete full-stack JavaScript framework— Meteor About This Book Develop a set of real-world applications each exploring different features of Meteor Make your app more appealing by adding reactivity and r feature of Meteor—the "full stack reactivity"—through building real-time applications with many third party libraries Who This Book Is For If you are a developer who is looking for taking your application development skills with Meteor to next level by getting your hands- You Will Learn See how Meteor fits in the modern web application development by using its reactive data system Make your front-end behave consistently across environments by implementing a predictable state container with Redux Get familiar with React and overview of Ar time geolocation Plugin into Meteor social media APIs like Twitter's streaming and Facebook's Messenger Add search functionality from scratch to your existing app and data Add responsiveness with Bootstrap 4 and Google's Material design using Less and Sass Distribute your Apache Cassandra to your existing stack. Learn how to scale your microservices with the high performant language neutral framework gRPC. Learn how to query multiple data sources using GraphQL. In Detail This book starts with the basic installation and overview of the main multiple versatile applications covering a wide range of topics from adding a front-end views with the hottest rendering technology React to implementing a microservices oriented architecture.All the code is written with ES6/7 which is the latest significantly improved JavaScri streaming, server to server data exchange, responsive styles on the front-end, full-text search functionality, and integration of many third-party libraries and APIs using npm. By the end of the book, you'll have the skills to quickly prototype and even launch your next app idea in takes an easy-to-follow project-based approach. Each project starts with the goal of what you will learn and an overview the technologies used.

Leverage the power of MongoDB 4.x to build and administer fault-tolerant database applications Key Features Master the new features and capabilities of MongoDB 4.x Implement advanced data modeling, querying, and administration techniques in MongoDB Includes rich case-s MongoDB developers Book Description MongoDB is the best platform for working with non-relational data and is considered to be the smartest tool for organizing data in line with business needs. The recently released MongoDB 4.x supports ACID transactions and makes the te fintech sectors. This book provides expertise in advanced and niche areas of managing databases (such as modeling and querying databases) along with various administration techniques in MongoDB, thereby helping you become a successful MongoDB expert. The book helps you function with the help of some interesting examples and large datasets. You will dive deeper into niche areas such as high-performance configurations, optimizing SQL statements, configuring large-scale sharded clusters, and many more. You will also master best practices in ov and backup procedures for database security. By the end of the book, you will have gained a practical understanding of administering database applications both on premises and on the cloud: you will also be able to scale database applications across all servers. What you will le as indexing and expressions Configure, monitor, and maintain a highly scalable MongoDB environment Master replication and data sharding to optimize read/write performance Administer MongoDB-based applications on premises or on the cloud Integrate MongoDB with big data Deploy MongoDB on Kubernetes containers Use MongoDB in IoT, mobile, and serverless environments Who this book is for This book is ideal for MongoDB developers and database administrators who wish to become successful MongoDB experts and build scalable and fault-toler be useful for database professionals who wish to become certified MongoDB professionals. Some understanding of MongoDB and basic database concepts is required to get the most out of this book.

Master modern web and network data modeling: both theory and applications. In Web and Network Data Science, a top faculty member of Northwestern University's prestigious analytics program presents the first fully-integrated treatment of both the business and academic el analytics. Some books in this field focus either entirely on business issues (e.g., Google Analytics and SEO): others are strictly academic (covering topics such as sociology, complexity theory, ecology, applied physics, and economics). This text gives today's managers and students concepts, principles, and theory in the context of real-world applications. Building on his pioneering Web Analytics course at Northwestern University, Thomas W. Miller covers usability testing, Web site performance, usage analysis, social media platforms, search engine optimizat this practical coverage with accessible and up-to-date introductions to both social network analysis and network science, demonstrating how these disciplines can be used to solve real business problems.

This book is a mini tutorial full of code examples and strategies to give you plenty of options when building your own applications with MongoDB.This book is ideal for people who want to develop applications on the Node.js stack quickly and efficiently. Prior knowledge of the st installation of the core components and builds all aspects of the example application. The focus of the book is on what Mongoose adds to your applications, so experienced Node.js developers will also benefit.

MongoDB Applied Design Patterns

Building Scalable Web Apps and RESTful Services

MongoDB in Action

Learn MongoDB 4.x

The Definitive Guide to MongoDB

Patterns and Processes for the Popular Document-oriented Database

Data Modeling Made Simple with ER/Studio Data Architect

New technologies, such as improved testing and physical modeling methods, together with numerical studies and other novel techniques, have led to many developments in the fields of hydraulic and civil engineering in recent years. This book presents proceedings from HCET 2021, the 6th International Technical Conference on Frontiers of Hydraulic and Civil Engineering Technology, held in Sanya, China, on 28 and 29 August 2021. The conference highlighted the latest advances, innovations and applications in the fields of hydraulic and civil engineering, and served as a platform to promote and celebrate interdisciplinary study. The book contains 89 papers, selected from 178 contributions and divided into 4 sections: Modern Civil Engineering; Water and Hydraulic Engineering; Environment Engineering and Sciences; and Transdisciplinary Engineering and Technology. Topics covered involve both theoretical and practical knowledge and understanding, primarily in the areas of hydraulics and water resource engineering, civil engineering, environmental engineering and sciences, transportation engineering, coastal and ocean engineering and transdisciplinary engineering and technology. The book, which presents a wealth of exciting ideas that will open new research directions and foster multidisciplinary collaboration among specialists in various fields, will be of interest to all academics, researchers, practitioners and policymakers seeking to understand and tackle civil and hydraulic engineering challenges by adopting appropriate, sustainable, solutions.

Learn best practices for building bots by focusing on the technological implementation and UX in this practical book. You will cover key topics such as setting up a development environment for creating chatbots for multiple channels (Facebook Messenger, Skype, and KiK); building a chatbot (design to implementation); integrating to IFTT (If This Then That) and IoT (Internet of Things); carrying out analytics and metrics for chatbots; and most importantly monetizing models and business sense for chatbots. Build Better Chatbots is easy to follow with code snippets provided in the book and complete code open sourced and available to download. With Facebook opening up its Messenger platform for developers, followed by Microsoft opening up Skype for development, a new channel has emerged for brands to acquire, engage, and service customers on chat with chatbots. What You Will Learn Work with the bot development life cycle Master bot UX design Integrate into the bot ecosystem Maximize the business and monetization potential for bots Who This Book Is For Developers, programmers, and hobbyists who have basic programming knowledge. The book can be used by existing chatbot developers to gain a better understanding of analytics and the business side of bots.

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, and 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.

Build a working knowledge of data modeling concepts and best practices, along with how to apply these principles with ER/Studio. This second edition includes numerous updates and new sections including an overview of ER/Studio's support for agile development, as well as a description of some of ER/Studio's newer features for NoSQL, such as MongoDB's containment structure. You will build many ER/Studio data models along the way, applying best practices to master these ten objectives: Know why a data model is needed and which ER/Studio models are the most appropriate for each situation Understand each component on the data model and how to represent and create them in ER/Studio Know how to leverage ER/Studio's latest features including those assisting agile teams and forward and reverse engineering of NoSQL databases Know how to apply all the foundational features of ER/Studio Be able to build relational and dimensional conceptual, logical, and physical data models in ER/Studio Be able to apply techniques such as indexing, transforms, and forward engineering to turn a logical data model into an efficient physical design Improve data model quality and impact analysis results by leveraging ER/Studio's lineage functionality and compare/merge utility Be able to apply ER/Studio's data dictionary features Learn ways of sharing the data model through reporting and through exporting the model in a variety of formats Leverage ER/Studio's naming functionality to improve naming consistency, including the new Automatic Naming Translation feature. This book contains four sections: Section I introduces data modeling and the ER/Studio landscape. Learn why data modeling is so critical to software development and even more importantly, why data modeling is so critical to understanding the business. You will learn about the newest features in ER/Studio (including features on big data and agile), and the ER/Studio environment. By the end of this section, you will have created and saved your first data model in ER/Studio and be ready to start modeling in Section II! Section II explains all of the symbols and text on a data model, including entities, attributes, relationships, domains, and keys. By the time you finish this section, you will be able to 'read' a data model of any size or complexity, and create a complete data model in ER/Studio. Section III explores the three different levels of models: conceptual, logical, and physical. A conceptual data model (CDM) … Build an application from backend to browser with Node.js, and kick open the doors to real-time event programming. With this hands-on book, you'll learn how to create a social network application similar to LinkedIn and Facebook, but with a real-time twist. And you'll build it with just one programming language: JavaScript. If you're an experienced web developer unfamiliar with JavaScript, the book's first section introduces you to the project's core technologies: Node.js, Backbone.js, and the MongoDB data store. You'll then launch into the project—a highly responsive, highly scalable application—guided by clear explanations and lots of code examples. Learn about key modules in Node.js for building real-time apps Use the Backbone.js framework to write clean browser code, and maintain better data integration with MongoDB Structure project files as a foundation for code that will arrive later Create user accounts and learn how to secure the data Use Backbone.js templates to build the application's UIs, and integrate access control with Node.js Develop a contact list to help users link to and track other accounts Use Socket.io to create real-time chat functionality Extend your UIs to give users up-to-the-minute information

Mastering MongoDB 3.x

Data Resource Data

Web Application Development with MEAN

Expert techniques to run high-volume and fault-tolerant database solutions using MongoDB 4.x, 2nd Edition

A Complete Guide to Getting Started with Chatbots

Building Distributed Applications in Gin

Building Applications with Spring 5 and Vue.js 2

Whether you're building a social media site or an internal-use enterprise application, this hands-on guide shows you the connection between MongoDB and the business problems it's designed to solve. You'll learn how to apply MongoDB design patterns to several challenging domains, such as ecommerce, content management, and online gaming. Using Python and JavaScript code examples, you'll discover how MongoDB lets you scale your data model while simplifying the development process. Many businesses launch NoSQL databases without understanding the techniques for using their features most effectively. This book demonstrates the benefits of document embedding, polymorphic schemas, and other MongoDB patterns for tackling specific big data use cases, including: Operational intelligence: Perform real-time analytics of business data Ecommerce: Use MongoDB as a product catalog master or inventory management system Content management: Learn methods for storing content nodes, binary assets, and discussions Online advertising networks: Apply techniques for frequency capping ad impressions, and keyword targeting and bidding Social networking: Learn how to store a complex social graph, modeled after Google+ Online gaming: Provide concurrent access to character and world data for a multiplayer role-playing game

Take a deep dive into web development using the Go programming language to build web apps and RESTful services to create reliable and efficient software. Web Development with Go provides Go language fundamentals and then moves on to advanced web development concepts and successful deployment of Go web apps to the cloud. Web Development with Go will teach you how to develop scalable real-world web apps, RESTful services, and backend systems with Go. The book starts off by covering Go programming language fundamentals as a prerequisite for web development. After a thorough understanding of the basics, the book delves into web development using the built-in package, net/http. With each chapter you'll be introduced to new concepts for gradually building a real-world web system. The book further shows you how to integrate Go with other technologies. For example, it provides an overview of using MongoDB as a means of persistent storage, and provides an end-to-end REST API sample as well. The book then moves on to demonstrate how to deploy web apps to the cloud using the Google Cloud platform. Web Development with Go provides: Fundamentals for building real-world web apps in Go Thorough coverage of prerequisites and practical code examples Demo web apps for attaining a deeper understanding of web development A reference REST API app which can be used to build scalable real-world backend services in Go A thorough demonstration of deploying web apps to the Cloud using the Google Cloud platform Go is a high-performance language while providing greater level of developer productivity, therefore Web Development with Go equips you with the necessary skills and knowledge required for effectively building robust and efficient web apps by leveraging the features of Go.

You can choose several data access frameworks when building Java enterprise applications that work with relational databases. But what about big data? This hands-on introduction shows you how Spring Data makes it relatively easy to build applications across a wide range of new data access technologies such as NoSQL and Hadoop. Through several sample projects, you'll learn how Spring Data provides a consistent programming model that retains NoSQL-specific features and capabilities, and helps you develop Hadoop applications across a wide range of use-cases such as data analysis, event stream processing, and workflow. You'll also discover the features Spring Data adds to Spring's existing JPA and JDBC support for writing RDBMS-based data access layers. Learn about Spring's template helper classes to simplify the use of database-specific functionality Explore Spring Data's repository abstraction and advanced query functionality Use Spring Data with Redis (key/value store), HBase (column-family), MongoDB (document database), and Neo4j (graph database) Discover the GemFire distributed data grid solution Export Spring Data JPA-managed entities to the Web as RESTful web services Simplify the development of HBase applications, using a lightweight object-mapping framework Build example big-data pipelines with Spring Batch and Spring Integration

An effective guide to learning how to build a large-scale distributed application using the wide range of functionalities in Gin Key Features Explore the commonly used functionalities of Gin to build web applications Become well-versed with rendering HTML templates with the Gin engine Solve commonly occurring challenges such as scaling, caching, and deployment Book Description Gin is a high-performance HTTP web framework used to build web applications and microservices in Go. This book is designed to teach you the ins and outs of the Gin framework with the help of practical examples. You'll start by exploring the basics of the Gin framework, before progressing to build a real-world RESTful API. Along the way, you'll learn how to write custom middleware and understand the routing mechanism, as well as how to bind user data and validate incoming HTTP requests. The book also demonstrates how to store and retrieve data at scale with a NoSQL database such as MongoDB, and how to implement a caching layer with Redis. Next, you'll understand how to secure and test your API endpoints with authentication protocols such as OAuth 2 and JWT. Later chapters will guide you through rendering HTML templates on the server-side and building a frontend application with the React web framework to consume API responses. Finally, you'll deploy your application on Amazon Web Services (AWS) and learn how to automate the deployment process with a continuous integration/continuous delivery (CI/CD) pipeline. By the end of this Gin book, you'll be able to design, build, and deploy a production-ready distributed application from scratch using the Gin framework. What you will learn Build a production-ready REST API with the Gin framework Scale web applications with event-driven architecture Use NoSQL databases for data persistence Set up authentication middleware with JWT and Auth0 Deploy a Gin-based RESTful API on AWS with Docker and Kubernetes Implement a CI/CD workflow for Gin web apps Who this book is for This book is for Go developers who are comfortable with the Go language and seeking to learn REST API design and development with the Gin framework. Beginner-level knowledge of the Go programming language is required to make the most of this book.

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).

Applying the Industry Standard on Data Model Quality

Marketing Data Science

Web and Network Data Science

Seven Databases in Seven Weeks

Beginning Mobile Application Development in the Cloud

MongoDB: The Definitive Guide

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.

This book covers the latest release of MongoDB. You'll learn how to master various tasks related to the development and administration of a MongoDB database, along with best practices to optimize the workflow. The book also covers multiple financial and practical use cases that will enable you to use MongoDB for commercial data storage.

Data is getting bigger and more complex by the day, and so are your choices in handling it. Explore some of the most cutting-edge databases available - from a traditional relational database to newer NoSQL approaches - and make informed decisions about challenging data storage problems. This is the only comprehensive guide to the world of NoSQL databases, with in-depth practical and conceptual introductions to seven different technologies: Redis, Neo4J, CouchDB, MongoDB, HBase, Postgres, and DynamoDB. This second edition includes a new chapter on DynamoDB and updated content for each chapter. While relational databases such as MySQL remain as relevant as ever, the alternative, NoSQL paradigm has opened up new horizons in performance and scalability and changed the way we approach data-centric problems. This book presents the essential concepts behind each database alongside hands-on examples that make each technology come alive. With each database, tackle a real-world problem that highlights the concepts and features that make it shine. Along the way, explore five database models - relational, key/value, columnar, document, and graph - from the perspective of challenges faced by real applications. Learn how MongoDB and CouchDB are strikingly different, make your applications faster with Redis and more connected with Neo4J, build a cluster of HBase servers using cloud services such as Amazon's Elastic MapReduce, and more. This new edition brings a brand new chapter on DynamoDB, updated code samples and exercises, and a more up-to-date account of each database's feature set. Whether you're a programmer building the next big thing, or a data scientist seeking solutions to thorny problems, or a technology enthusiast venturing into new territory, you will find something to inspire you in this book. What You Need: You'll need a *nix shell (Mac OS or Linux preferred, Windows users will need Cygwin), Java 6 (or greater), and Ruby 1.8.7 (or greater). Each chapter will list the downloads required for that database.

What would happen if you optimized a data store for the operations application developers actually use? You'd arrive at MongoDB, the reliable document-oriented database. With this concise guide, you'll learn how to build elegant database applications with MongoDB and PHP. Written by the Chief Solutions Architect at 10gen—the company that develops and supports this open source database—this book takes you through MongoDB basics such as queries, read-write operations, and administration, and then dives into MapReduce, sharding, and other advanced topics. Get out of the relational database rut, and take advantage of a high-performing system optimized for operations and scale. Learn step-by-step the tools you need to build PHP applications with MongoDB Perform Create, Read, Update, and Delete (CRUD) operations, and learn how to perform queries to retrieve data Administer your database, and access and manipulate data with the MongoDB Shell Use functions to work with sets, arrays, and multiple documents to perform synchronous, asynchronous, and atomic operations Discover PHP's community tools and libraries, and why they're valuable Work with regular expressions, aggregation, MapReduce, replication, and sharding

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

Rapid Prototyping and Scalable Deployment

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

Mastering MongoDB 4.x

Modeling Techniques in Predictive Analytics

Getting MEAN with Mongo, Express, Angular, and Node

Building Well-Designed and Supportable MongoDB Databases

A Comprehensive Data Resource Understanding

An expert's guide to build fault tolerant MongoDB application About This Book Master the advanced modeling, querying, and administration techniques in MongoDB and become a MongoDB expert Covers the latest updates and Big Data features frequently used by professional MongoDB developers and administrators If your goal is to become a certified MongoDB professional, this book is your perfect companion Who This Book Is For Mastering MongoDB is a book for database developers, architects, and administrators who want to learn how to use MongoDB more effectively and productively. If you have experience in, and are interested in working with, NoSQL databases to build apps and websites, then this book is for you. What You Will Learn Get hands-on with advanced querying techniques such as indexing, expressions, arrays, and more. Configure, monitor, and maintain highly scalable MongoDB environment like an expert. Master replication and data sharding to optimize read/write performance. Design secure and robust applications based on MongoDB. Administer MongoDB-based applications on-premise or in the cloud Scale MongoDB to achieve your design goals Integrate MongoDB with big data sources to process huge amounts of data In Detail MongoDB has grown to become the de facto NoSQL database with millions of users—from small startups to Fortune 500 companies. Addressing the limitations of SQL schema-based databases, MongoDB pioneered a shift of focus for DevOps and offered sharding and replication maintainable by DevOps teams. The book is based on MongoDB 3.x and covers topics ranging from database querying using the shell, built in drivers, and popular ODM mappers to more advanced topics such as sharding, high availability, and integration with big data sources. You will get an overview of MongoDB and how to play to its strengths, with relevant use cases. After that, you will learn how to query MongoDB effectively and make use of indexes as much as possible. The next part deals with the administration of MongoDB installations on-premise or in the cloud. We deal with database internals in the next section, explaining storage systems and how they can affect performance. The last section of this book deals with replication and MongoDB scaling, along with integration with heterogeneous data sources. By the end this book, you will be equipped with all the required industry skills and knowledge to become a certified MongoDB developer and administrator. Style and approach This book takes a practical, step-by-step approach to explain the concepts of MongoDB. Practical use-cases involving real-world examples are used throughout the book to clearly explain theoretical concepts.

Manage the huMONGOus amount of data collected through your web application with MongoDB. This authoritative introduction—written by a core contributor to the project—shows you the many advantages of using document-oriented databases, and demonstrates how this reliable, high-performance system allows for almost infinite horizontal scalability. This updated second edition provides guidance for database developers, advanced configuration for system administrators, and an overview of the concepts and use cases for other people on your project. Ideal for NoSQL newcomers and experienced MongoDB users alike, this guide provides numerous real-world schema design examples. Get started with MongoDB core concepts and vocabulary Perform basic write operations at different levels of safety and speed Create complex queries, with options for limiting, skipping, and sorting results Design an application that works well with MongoDB Aggregate data, including counting, finding distinct values, grouping documents, and using MapReduce Gather and interpret statistics about your collections and databases Set up replica sets and automatic failover in MongoDB Use sharding to scale horizontally, and learn how it impacts applications Delve into monitoring, security and authentication, backup/restore, and other administrative tasks

Learn how to leverage MongoDB with your Python applications, using the hands-on recipes in this book. You get complete code samples for tasks such as making fast geo queries for location-based apps, efficiently indexing your user documents for social-graph lookups, and many other scenarios. This guide explains the basics of the document-oriented database and shows you how to set up a Python environment with it. Learn how to read and write to MongoDB, apply idiomatic MongoDB and Python patterns, and use the database with several popular Python web frameworks. You'll discover how to model your data, write effective queries, and avoid concurrency problems such as race conditions and deadlocks. The recipes will help you: Read, write, count, and sort documents in a MongoDB collection Learn how to use the rich MongoDB query language Maintain data integrity in replicated/distributed MongoDB environments Use embedding to efficiently model your data without joins Code defensively to avoid keyerrors and other bugs Apply atomic operations to update game scores, billing systems, and more with the fast accounting pattern Use MongoDB with the Pylons 1.x, Django, and Pyramid web frameworks

Now , a leader of Northwestern University's prestigious analytics program presents a fully-integrated treatment of both the business and academic elements of marketing applications in predictive analytics. Writing for both managers and students, Thomas W. Miller explains essential concepts, principles, and theory in the context of real-world applications. Building on Miller's pioneering program, Marketing Data Science thoroughly addresses segmentation, target marketing, brand and product positioning, new product development, choice modeling, recommender systems, pricing research, retail site selection, demand estimation, sales forecasting, customer retention, and lifetime value analysis. Starting where Miller's widely-praised Modeling Techniques in Predictive Analytics left off, he integrates crucial information and insights that were previously segregated in texts on web analytics, network science, information technology, and programming. Coverage includes: The role of analytics in delivering effective messages on the web Understanding the web by understanding its hidden structures Being recognized on the web – and watching your own competitors Visualizing networks and understanding communities within them Measuring sentiment and making recommendations Leveraging key data science methods: databases/data preparation, classical/Bayesian statistics, regression/classification, machine learning, and text analytics Six complete case studies address exceptionally relevant issues such as: separating legitimate email from spam; identifying legally-relevant information for lawsuit discovery; gleaning insights from anonymous web surfing data, and more. This text's extensive set of web and network problems draw on rich public-domain data sources; many are accompanied by solutions in Python and/or R. Marketing Data Science will be an invaluable resource for all students, faculty, and professional marketers who want to use business analytics to improve marketing performance.

Learn how to build apps for mobile devices on Cloud platforms The marketplace for apps is ever expanding, increasing the potential to make money. With this guide, you'll learn how to build cross-platform applications for mobile devices that are supported by the power of Cloud-based services such as Amazon Web Services. An introduction to Cloud-based applications explains how to use HTML5 to create cross-platform mobile apps and then use Cloud services to enhance those apps. You'll learn how to build your first app with HTML5 and set it up in the Cloud, while also discovering how to use jQuery to your advantage. Highlights the skills and knowledge you need to create successful apps for mobile devices with HTML5 Takes you through the steps for building web applications for the iPhone and Android Details how to enhance your app through faster launching, touch vs. click, storage capabilities, and a cache Looks at how best to use JSON, FourSquare, jQuery, AJAX, and more Shares tips for creating hybrid apps that run natively If you're interested in having your application be one of the 200,000+ apps featured in the iPhone store or the 50,000+ in the Android store, then you need this book.

Building Node Applications with MongoDB and Backbone

Build Better Chatbots

Build Applications with Meteor

Modeling Techniques in Predictive Analytics with R and Python

Powerful and Scalable Data Storage

Innovative Applications of Big Data in the Railway Industry

A hands-on guide to using MongoDB and Atlas in the real world

This comprehensive guide book begins by explaining what makes MongoDB unique. A series of tutorials designed for MongoDB mastery then leads into detailed examples for leveraging MongoDB in e-commerce, social networking, analytics, and other common applications.

The Definitive Guide to MongoDB, Third Edition, is updated for MongoDB 3 and includes all of the latest MongoDB features, including the aggregation framework introduced in version 2.2 and hashed indexes in version 2.4. The Third Edition also now includes Python. MongoDB is the most popular of the "Big Data" NoSQL database technologies, and it's still growing. David Hows from 10gen, along with experienced MongoDB authors Peter Membrey and Eelco Plugge, provide their expertise and experience in teaching you everything you need to know to become a MongoDB pro.

Data Modeling for MongoDBBuilding Well-Designed and Supportable MongoDB DatabasesTechnics Publications

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 ForDevelopers and professionals who work with MongoDB.

Summary MongoDB in Action, Second Edition is a completely revised and updated version. It introduces MongoDB 3.0 and the document-oriented database model. This perfectly paced book gives you both the big picture you'll need as a developer and enough low-level detail to satisfy system engineers. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology This document-oriented database was built for high availability, supports rich, dynamic schemas, and lets you easily distribute data across multiple servers. MongoDB 3.0 is flexible, scalable, and very fast, even with big data loads. About the Book MongoDB in Action, Second Edition is a completely revised and updated version. It introduces MongoDB 3.0 and the document-oriented database model. This perfectly paced book gives you both the big picture you'll need as a developer and enough low-level detail to satisfy system engineers. Lots of examples will help you develop confidence in the crucial area of data modeling. You'll also love the deep explanations of each feature, including replication, auto-sharding, and deployment. What's Inside Indexes, queries, and standard DB operations Aggregation and text searching Map-reduce for custom aggregations and reporting Deploying for scale and high availability Updated for Mongo 3.0 About the Reader Written for developers. No previous MongoDB or NoSQL experience is assumed. About the Authors After working at MongoDB, Kyle Banker is now at a startup. Peter Bakkum is a developer with MongoDB expertise. Shaun Verch has worked on the core server team at MongoDB. A Genentech engineer, Doug Garrett is one of the winners of the MongoDB Innovation Award for Analytics. A software architect, Tim Hawkins has led search engineering at Yahoo Europe. Technical Contributor: Wouter Thielen. Technical Editor: Mihalis Tsoukalos. Table of Contents PART 1 GETTING STARTED A database for the modern web MongoDB through the JavaScript shell Writing programs using MongoDB PART 2 APPLICATION DEVELOPMENT IN MONGODB Document-oriented data Constructing queries Aggregation Updates, atomic operations, and deletes PART 3 MONGODB MASTERY Indexing and query optimization Text search WiredTiger and pluggable storage Replication Scaling your system with sharding Deployment and administration

Visualize Structure and Meaning

Web Development with Go

MongoDB and Python

Optimizing MongoDB Databases and their Applications

An expert's guide to building fault-tolerant MongoDB applications

A complete guide to dealing with Big Data using MongoDB

A Brief Guide to the Emerging World of Polyglot Persistence

The need to handle increasingly larger data volumes is one factor driving the adoption of a new class of nonrelational "NoSQL" databases. Advocates of NoSQL databases claim they can be used to build systems that are more performant, scale better, and are easier to program. NoSQL Distilled is a concise but thorough introduction to this rapidly emerging technology. Pramod J. Sadalage and Martin Fowler explain how NoSQL databases work and the ways that they may be a superior alternative to a traditional RDBMS. The authors provide a fast-paced guide to the concepts you need to know in order to evaluate whether NoSQL databases are right for your needs and, if so, which technologies you should explore further. The first part of the book concentrates on core concepts, including schemaless data models, aggregates, new distribution models, the CAP theorem, and map-reduce. In the second part, the authors explore architectural and design issues associated with implementing NoSQL. They also present realistic use cases that demonstrate NoSQL databases at work and feature representative examples using Riak, MongoDB, Cassandra, and Neo4j. In addition, by drawing on Pramod Sadalage's pioneering work, NoSQL Distilled shows how to implement evolutionary design with schema migration: an essential technique for applying NoSQL databases. The book concludes by describing how NoSQL is ushering in a new age of Polyglot Persistence, where multiple data-storage worlds coexist, and architects can choose the technology best optimized for each type of data access.

Unlock the power of the MEAN stack by creating attractive and real-world projects About This Book Learn about the different components that comprise a MEAN application to construct a fully functional MEAN application using the best third-party modules A step-by-step guide to developing the MEAN stack components from scratch to achieve maximum flexibility when building an e-commerce application Build optimum end-to-end web applications using the MEAN stack Who This Book Is For This learning path is for web developers who are interested in developing applications using JavaScript. This course is for developers who are interested in learning how to build modern and multiple web applications using MongoDB, Express, AngularJS, and Node.js. What You Will Learn Build modern, end-to-end web applications by employing the full-stack web development solution of MEAN Connect your Express application to MongoDB and use a Mongoose model and build a complex application from start to finish in MongoDB Employ AngularJS to build responsive UI components Implement multiple authentication strategies such as OAuth, JsonWebToken, and Sessions Enhance your website's usability with social logins such as Facebook, Twitter, and Google Secure your app by creating SSL certificates and run payment platforms in a live environment Implement a chat application from scratch using Socket.IO Create distributed applications and use the power of server-side rendering in your applications Extend a project with a real-time bidding system using WebSockets In Detail The MEAN stack is a collection of the most popular modern tools for web development. This course will help you to build a custom e-commerce app along with several other applications. You will progress to creating several applications with MEAN. The first module in this course will provide you with the skills you need to successfully create, maintain, and test a MEAN application. Starting with MEAN core frameworks, this course will explain each framework key concepts of MongoDB, Express, AngularJS, and Node.js. We will walk through the different tools and frameworks that will help expedite your daily development cycles. After this, the next module will show you how to create your own e-commerce application using the MEAN stack. It takes you step by step through the parallel process of learning and building to develop a production-ready, high-quality e-commerce site from scratch. It also shows you how to manage user authentication and authorization, check multiple payment platforms, add a product search and navigation feature, deploy a production-ready e-commerce site, and finally add your own real-life quality feature to the site. The final step in this course will enable you to build a better foundation for your AngularJS apps. You'll learn how to build complex real-life applications with the MEAN stack and a few more advanced projects. You will become familiar with WebSockets, build real-time web applications, create auto-destructing entities, and see how to work with monetary data in Mongo. You will also find out how to build real-time e-commerce applications. This learning path combines some of the best that Packt has to offer in one complete, curated package. It includes content from the following Packt products: MEAN Web Development by Amos Haviv Building an E-Commerce Application with MEAN by Adrian Mejia MEAN Blueprints by Robert Onodi Style and approach This course will begin with the introduction to MEAN,

gradually progressing with building applications in each framework. Each transition is well explained, and each chapter begins with the required background knowledge.

Use this fast and complete guide to optimize the performance of MongoDB databases and the applications that depend on them. You will be able to turbo-charge the performance of your MongoDB applications to provide a better experience for your users, reduce your running costs, and avoid application growing pains. MongoDB is the world's most popular document database and the foundation for thousands of mission-critical applications. This book helps you get the best possible performance from MongoDB. MongoDB Performance Tuning takes a methodical and comprehensive approach to performance tuning that begins with application and schema design and goes on to cover optimization of code at all levels of an application. The book also explains how to configure MongoDB hardware and cluster configuration for optimal performance. The systematic approach in the book helps you treat the true causes of performance issues and get the best return on your tuning investment. Even when you're under pressure and don't know where to begin, simply follow the method in this book to set things right and get your MongoDB performance back on track. What You Will Learn Apply a methodical approach to MongoDB performance tuning Understand how to design an efficient MongoDB application Optimize MongoDB document design and indexing strategies Tune MongoDB queries, aggregation pipelines, and transactions Optimize MongoDB server resources: CPU, memory, disk Configure MongoDB Replica sets and Sharded clusters for optimal performance Who This Book Is For Developers and administrators of high-performance MongoDB applications who want to be sure they are getting the best possible performance from their MongoDB system. For developers who wish to create applications that are fast, scalable, and cost-effective. For administrators who want to optimize their MongoDB server and hardware configuration.

Become efficient in both frontend and backend web development with Spring and Vue Key Features Connect application's frontend and backend with Vue, Vuex, and Spring Boot Leverage the latest web standards to enhance code performance, readability, and cross-compatibility Build secure full-stack web applications with Spring Security Book Description Building Applications with Spring 5 and Vue.js 2, with its practical approach, helps you become a full-stack web developer. As well as knowing how to write frontend and backend code, a developer has to tackle all problems encountered in the application development life cycle – starting from the simple idea of an application, to the UI and technical designs, and all the way to implementation, testing, production deployment, and monitoring. With the help of this book, you'll get to grips with Spring 5 and Vue.js 2 as you learn how to develop a web application. From the initial structuring to full deployment, you'll be guided at every step of developing a web application from scratch with Vue.js 2 and Spring 5. You'll learn how to create different components of your application as you progress through each chapter, followed by exploring different tools in these frameworks to expedite your development cycle. By the end of this book, you'll have gained a complete understanding of the key design patterns and best practices that underpin professional full-stack web development. What you will learn Analyze requirements and design data models Develop a single-page application using Vue.js 2 and Spring 5 Practice concept, logical, and physical data modeling Design, implement, secure, and test RESTful API Add test cases to improve reliability of an application Monitor and deploy your application to production Who this book is for Building Applications with Spring 5.0 and Vue.js 2.0 is for you if you are developer who is new to Vue.js or Spring. It is assumed that you have some knowledge of HTML, CSS, and Java.

The topic of NoSQL databases has recently emerged, to face the Big Data challenge, namely the ever increasing volume of data to be handled. It is now recognized that relational databases are not appropriate in this context, implying that new database models and techniques are needed. This book presents recent research works, covering the following basic aspects: semantic data management, graph databases, and big data management in cloud environments. The chapters in this book report on research about the evolution of basic concepts such as data models, query languages, and new challenges regarding implementation issues.

Data Modeling Made Simple with Embarcadero ER/Studio Data Architect

NoSQL Data Models

Document-Oriented Data for Web Developers

MongoDB and PHP

MongoDB Recipes

With Data Modeling and Query Building Strategies

Spring Data

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

Graph Data Modeling for NoSQL and SQL

Adapting to Agile Data Modeling in a Big Data World

Building Cross-Platform Mobile and Web Apps for Engineers and Scientists: An Active Learning Approach

Trends and Challenges

Effective database design techniques for data architects and business intelligence professionals

A hands-on guide for Go developers to build and deploy distributed web apps with the Gin framework

MongoDB Performance Tuning