Agile Data Warehouse Design
Collaborative Dimensional Modeling
From Whiteboard To Star Schema | 70f2e0bc884604978724eb8cbf0c52c4

Agile Database Techniques Agile Data Science 2.0 Agile Data Warehouse Design Designing Data-Intensive Applications Corporate Information Factory Data Warehouse Design Solutions Agile Data Warehousing The Data Warehouse Toolkit Data Warehouse Design Multi-Domain Master Data Management Mastering Data Warehouse Design Choose your WoW More Agile Testing Agile Data Warehousing Project Management The Agile Samurai Data Pipelines Pocket Reference An Introduction to Agile Data Engineering Using Data Vault 2.0 Building a Scalable Data Warehouse with Data Vault 2.0 The Unified Star Schema: An Agile and Resilient Approach to Data Warehouse and Analytics Design The Data Vault Guru Agile Analytics Agile Modeling Kimball's Data Warehouse Toolkit Classics Data Model Scorecard Refactoring Databases Google BigQuery: The Definitive Guide Data Model Patterns The Data Warehouse Lifecycle Toolkit Modeling the Agile Data Warehouse with Data Vault The Modern Data Warehouse in Azure The Data Warehouse ETL Toolkit Snowflake Cookbook Data Modeling Essentials Agile Data Warehousing for the Enterprise DW 2.0: The Architecture for the Next Generation of Data Warehousing Jumpstart Snowflake Building the Data Warehouse The Data Model Resource Book Agile Data Science Rapid Data Warehouse Design

**Agile Database Techniques**

Contains a six-stage plan for starting new warehouse projects and
guiding programmers step-by-step until they become a world-class, Agile development team. It describes also how to avoid or contain the fierce opposition that radically new methods can encounter from the traditionally-minded IS departments found in many large companies.

**Agile Data Science 2.0**

Describes Agile Modeling Driven Design (AMDD) and Test-Driven Design (TDD) approaches, database refactoring, database encapsulation strategies, and tools that support evolutionary techniques Agile software developers often use object and relational database (RDB) technology together and as a result must overcome the impedance mismatch The author covers techniques for mapping objects to RDBs and for implementing concurrency control, referential integrity, shared business logic, security access control, reports, and XML An agile foundation describes fundamental skills that all agile software developers require, particularly Agile DBAs Includes object modeling, UML data modeling, data normalization, class normalization, and how to deal with legacy databases Scott W. Ambler is author of Agile Modeling (0471202827), a contributing editor with Software Development (www.sdmagazine.com), and a featured speaker at software conferences worldwide

**Agile Data Warehouse Design**

Data Modeling Essentials, Third Edition, covers the basics of data modeling while focusing on developing a facility in techniques, rather than a simple familiarization with "the rules". In order to enable students to apply the basics of data modeling to real models, the book addresses the realities of developing systems in real-world situations by assessing the merits of a variety of possible solutions as well as using language and diagramming methods that represent
industry practice. This revised edition has been given significantly expanded coverage and reorganized for greater reader comprehension even as it retains its distinctive hallmarks of readability and usefulness. Beginning with the basics, the book provides a thorough grounding in theory before guiding the reader through the various stages of applied data modeling and database design. Later chapters address advanced subjects, including business rules, data warehousing, enterprise-wide modeling and data management. It includes an entirely new section discussing the development of logical and physical modeling, along with new material describing a powerful technique for model verification. It also provides an excellent resource for additional lectures and exercises. This text is the ideal reference for data modelers, data architects, database designers, DBAs, and systems analysts, as well as undergraduate and graduate-level students looking for a real-world perspective. Thorough coverage of the fundamentals and relevant theory. Recognition and support for the creative side of the process. Expanded coverage of applied data modeling includes new chapters on logical and physical database design. New material describing a powerful technique for model verification. Unique coverage of the practical and human aspects of modeling, such as working with business specialists, managing change, and resolving conflict.

**Designing Data-Intensive Applications**

Three books by the bestselling authors on Data Warehousing! The most authoritative guides from the inventor of the technique all for a value price. The Data Warehouse Toolkit, 3rd Edition (9781118530801) Ralph Kimball invented a data warehousing technique called "dimensional modeling" and popularized it in his first Wiley book, The Data Warehouse Toolkit. Since this book was first published in 1996, dimensional modeling has become the most
widely accepted technique for data warehouse design. Over the past 10 years, Kimball has improved on his earlier techniques and created many new ones. In this 3rd edition, he will provide a comprehensive collection of all of these techniques, from basic to advanced. The Data Warehouse Lifecycle Toolkit, 2nd Edition (9780470149775) Complete coverage of best practices from data warehouse project inception through on-going program management. Updates industry best practices to be in sync with current recommendations of Kimball Group. Streamlines the lifecycle methodology to be more efficient and user-friendly The Data Warehouse ETL Toolkit (9780764567575) shows data warehouse developers how to effectively manage the ETL (Extract, Transform, Load) phase of the data warehouse development lifecycle. The authors show developers the best methods for extracting data from scattered sources throughout the enterprise, removing obsolete, redundant, and innaccurate data, transforming the remaining data into correctly formatted data structures, and then physically loading them into the data warehouse. This book provides complete coverage of proven, time-saving ETL techniques. It begins with a quick overview of ETL fundamentals and the role of the ETL development team. It then quickly moves into an overview of the ETL data structures, both relational and dimensional. The authors show how to build useful dimensional stuctures, providing practical examples of beginning through advanced techniques.

**Corporate Information Factory**

Explore the modern market of data analytics platforms and the benefits of using Snowflake computing, the data warehouse built for the cloud. With the rise of cloud technologies, organizations prefer to deploy their analytics using cloud providers such as Amazon Web Services (AWS), Microsoft Azure, or Google Cloud Platform. Cloud vendors are offering modern data platforms for building cloud
analytics solutions to collect data and consolidate into single storage solutions that provide insights for business users. The core of any analytics framework is the data warehouse, and previously customers did not have many choices of platform to use. Snowflake was built specifically for the cloud and it is a true game changer for the analytics market. This book will help onboard you to Snowflake, present best practices to deploy, and use the Snowflake data warehouse. In addition, it covers modern analytics architecture and use cases. It provides use cases of integration with leading analytics software such as Matillion ETL, Tableau, and Databricks. Finally, it covers migration scenarios for on-premise legacy data warehouses.

What You Will Learn
Know the key functionalities of Snowflake
Set up security and access with cluster
Bulk load data into Snowflake using the COPY command
Migrate from a legacy data warehouse to Snowflake
integrate the Snowflake data platform with modern business intelligence (BI) and data integration tools

Who This Book Is For
Those working with data warehouse and business intelligence (BI) technologies, and existing and potential Snowflake users

Data Warehouse Design Solutions

Printed in full color. Faced with a software project of epic proportions? Tired of over-committing and under-delivering? Enter the dojo of the agile samurai, where agile expert Jonathan Rasmusson shows you how to kick-start, execute, and deliver your agile projects. Combining cutting-edge tools with classic agile practices, The Agile Samurai gives you everything you need to deliver something of value every week and make rolling your software into production a non-event. Get ready to kick some software project butt. By learning the ways of the agile samurai you will discover: how to create plans and schedules your customer and your team can believe in, what characteristics make a good agile team and how to form your own, how to gather requirements in a
fraction of the time using agile user stories what to do when you discover your schedule is wrong, and how to look like a pro correcting it how to execute fiercely by leveraging the power of agile software engineering practices By the end of this book you will know everything you need to set up, execute, and successfully deliver agile projects, and have fun along the way. If you're a project lead, this book gives you the tools to set up and lead your agile project from start to finish. If you are an analyst, programmer, tester, usability designer, or project manager, this book gives you the insight and foundation necessary to become a valuable agile team member. The Agile Samurai slices away the fluff and theory that make other books less-than-agile. It's packed with best practices, war stories, plenty of humor and hands-on tutorial exercises that will get you doing the right things, the right way. This book will make a difference.

**Agile Data Warehousing**

The Data Vault was invented by Dan Linstedt at the U.S. Department of Defense, and the standard has been successfully applied to data warehousing projects at organizations of different sizes, from small to large-size corporations. Due to its simplified design, which is adapted from nature, the Data Vault 2.0 standard helps prevent typical data warehousing failures. "Building a Scalable Data Warehouse" covers everything one needs to know to create a scalable data warehouse end to end, including a presentation of the Data Vault modeling technique, which provides the foundations to create a technical data warehouse layer. The book discusses how to build the data warehouse incrementally using the agile Data Vault 2.0 methodology. In addition, readers will learn how to create the input layer (the stage layer) and the presentation layer (data mart) of the Data Vault 2.0 architecture including implementation best practices. Drawing upon years of practical experience and using
numerous examples and an easy to understand framework, Dan Linstedt and Michael Olschimke discuss: How to load each layer using SQL Server Integration Services (SSIS), including automation of the Data Vault loading processes. Important data warehouse technologies and practices. Data Quality Services (DQS) and Master Data Services (MDS) in the context of the Data Vault architecture. Provides a complete introduction to data warehousing, applications, and the business context so readers can get-up and running fast. Explains theoretical concepts and provides hands-on instruction on how to build and implement a data warehouse. Demystifies data vault modeling with beginning, intermediate, and advanced techniques. Discusses the advantages of the data vault approach over other techniques, also including the latest updates to Data Vault 2.0 and multiple improvements to Data Vault 1.0.

**The Data Warehouse Toolkit**

Build a modern data warehouse on Microsoft's Azure Platform that is flexible, adaptable, and fast—fast to snap together, reconfigure, and fast at delivering results to drive good decision making in your business. Gone are the days when data warehousing projects were lumbering dinosaur-style projects that took forever, drained budgets, and produced business intelligence (BI) just in time to tell you what to do 10 years ago. This book will show you how to assemble a data warehouse solution like a jigsaw puzzle by connecting specific Azure technologies that address your own needs and bring value to your business. You will see how to implement a range of architectural patterns using batches, events, and streams for both data lake technology and SQL databases. You will discover how to manage metadata and automation to accelerate the development of your warehouse while establishing resilience at every level. And you will know how to feed downstream analytic solutions such as Power BI and Azure Analysis Services to empower data-driven decision.
making that drives your business forward toward a pattern of success. This book teaches you how to employ the Azure platform in a strategy to dramatically improve implementation speed and flexibility of data warehousing systems. You will know how to make correct decisions in design, architecture, and infrastructure such as choosing which type of SQL engine (from at least three options) best meets the needs of your organization. You also will learn about ETL/ELT structure and the vast number of accelerators and patterns that can be used to aid implementation and ensure resilience. Data warehouse developers and architects will find this book a tremendous resource for moving their skills into the future through cloud-based implementations. What You Will Learn Choose the appropriate Azure SQL engine for implementing a given data warehouse Develop smart, reusable ETL/ELT processes that are resilient and easily maintained Automate mundane development tasks through tools such as PowerShell Ensure consistency of data by creating and enforcing data contracts Explore streaming and event-driven architectures for data ingestion Create advanced staging layers using Azure Data Lake Gen 2 to feed your data warehouse Who This Book Is For Data warehouse or ETL/ELT developers who wish to implement a data warehouse project in the Azure cloud, and developers currently working in on-premise environments who want to move to the cloud, and for developers with Azure experience looking to tighten up their implementation and consolidate their knowledge

**Data Warehouse Design**

The first book to cover Agile Modeling, a new modeling technique created specifically for XP projects eXtreme Programming (XP) has created a buzz in the software development community—much like Design Patterns did several years ago. Although XP presents a methodology for faster software
development, many developers find that XP does not allow for modeling time, which is critical to ensure that a project meets its proposed requirements. They have also found that standard modeling techniques that use the Unified Modeling Language (UML) often do not work with this methodology. In this innovative book, Software Development columnist Scott Ambler presents Agile Modeling (AM)—a technique that he created for modeling XP projects using pieces of the UML and Rational's Unified Process (RUP). Ambler clearly explains AM, and shows readers how to incorporate AM, UML, and RUP into their development projects with the help of numerous case studies integrated throughout the book. AM was created by the author for modeling XP projects—an element lacking in the original XP design. The XP community and its creator have embraced AM, which should give this book strong market acceptance. Companion Web site at www.agilemodeling.com features updates, links to XP and AM resources, and ongoing case studies about agile modeling.

**Multi-Domain Master Data Management**

The world of data warehousing is changing. Big Data & Agile are hot topics. But companies still need to collect, report, and analyze their data. Usually this requires some form of data warehousing or business intelligence system. So how do we do that in the modern IT landscape in a way that allows us to be agile and either deal directly or indirectly with unstructured and semi-structured data? The Data Vault System of Business Intelligence provides a method and approach to modeling your enterprise data warehouse (EDW) that is agile, flexible, and scalable. This book will give you a short introduction to Agile Data Engineering for Data Warehousing and Data Vault 2.0. I will explain why you should be trying to become Agile, some of the history and rationale for Data Vault 2.0, and then show you the basics for how to build a data warehouse model using
the Data Vault 2.0 standards. In addition, I will cover some details about the Business Data Vault (what it is) and then how to build a virtual Information Mart off your Data Vault and Business Vault using the Data Vault 2.0 architecture. So if you want to start learning about Agile Data Engineering with Data Vault 2.0, this book is for you.

**Mastering Data Warehouse Design**

Master the most agile and resilient design for building analytics applications: the Unified Star Schema (USS) approach. The USS has many benefits over traditional dimensional modeling. Witness the power of the USS as a single star schema that serves as a foundation for all present and future business requirements of your organization. Data warehouse legend Bill Inmon and business intelligence innovator, Francesco Puppini, explain step-by-step why the Unified Star Schema is the recommended approach for business intelligence designs today, and show through many examples how to build and use this new solution. This book contains two parts. Part I, Architecture, explains the benefits of data marts and data warehouses, covering how organizations progressed to their current state of analytics, and to the challenges that result from current business intelligence architectures. Chapter 1 covers the drivers behind and the characteristics of the data warehouse and data mart. Chapter 2 introduces dimensional modeling concepts, including fact tables, dimensions, star joins, and snowflakes. Chapter 3 recalls the evolution of the data mart. Chapter 4 explains Extract, Transform, and Load (ETL), and the value ETL brings to reporting. Chapter 5 explores the Integrated Data Mart Approach, and Chapter 6 explains how to monitor this environment. Chapter 7 describes the different types of metadata within the data warehouse environment. Chapter 8 progresses through the evolution to our current modern data warehouse environment. Part II, the Unified Star Schema, covers the
Unified Star Schema (USS) approach and how it solves the challenges introduced in Part I. There are eight chapters within Part II: · Chapter 9, Introduction to the Unified Star Schema: Learn about its architecture and use cases, as well as how the USS approach differs from the traditional approach. · Chapter 10, Loss of Data: Learn about the loss of data and the USS Bridge. Understand that the USS approach does not create any join, and for this reason, it has no loss of data. · Chapter 11, The Fan Trap: Get introduced to the Oriented Data Model convention, and learn the dangers of a fan trap through an example. Differentiate join and association, and realize that an “in-memory association” is the preferred solution to the fan trap. · Chapter 12, The Chasm Trap: Become familiar with the Cartesian product, and then follow along with an example based on LinkedIn, which illustrates that a chasm trap produces unwanted duplicates. See that the USS Bridge is based on a union, which does not create any duplicates. · Chapter 13, Multi-Fact Queries: Distinguish between multiple facts “with direct connection” versus multiple facts “with no direct connection”. Explore how BI tools are capable of building aggregated virtual rows. · Chapter 14, Loops: Learn more about loops and five traditional techniques to solve them. Follow along with an implementation, which will illustrate the solution based on the USS approach. · Chapter 15, Non-Conformed Granularities: Learn about non-conformed granularities, and learn that the Unified Star Schema introduces a solution called “re-normalization”. · Chapter 16, Northwind Case Study. Witness how easy it is to detect the pitfalls of Northwind using the ODM convention. Follow along with an implementation of the USS approach on the Northwind database with various BI tools.

Choose your WoW

Written by a team of global experts, this book explains how to design next-generation data warehouses using a structured approach
inspired by the modern principles of software engineering. All of the design techniques featured in the book are placed within a practical framework so that solutions can be applied immediately. Data Warehouse Design: Modern Principles and Methodologies explains how to transform databases into data warehouses, allowing organizations to integrate and analyze data across the enterprise in order to make informed business decisions. Readers can access a CASE (computer aided software engineering) tool developed by the authors from www.qbx-tool.com which implements the discussed methodologies in a practical way.

**More Agile Testing**

Data is at the center of many challenges in system design today. Difficult issues need to be figured out, such as scalability, consistency, reliability, efficiency, and maintainability. In addition, we have an overwhelming variety of tools, including relational databases, NoSQL datastores, stream or batch processors, and message brokers. What are the right choices for your application? How do you make sense of all these buzzwords? In this practical and comprehensive guide, author Martin Kleppmann helps you navigate this diverse landscape by examining the pros and cons of various technologies for processing and storing data. Software keeps changing, but the fundamental principles remain the same. With this book, software engineers and architects will learn how to apply those ideas in practice, and how to make full use of data in modern applications. Peer under the hood of the systems you already use, and learn how to use and operate them more effectively. Make informed decisions by identifying the strengths and weaknesses of different tools. Navigate the trade-offs around consistency, scalability, fault tolerance, and complexity. Understand the distributed systems research upon which modern databases are built. Peek behind the scenes of major online services, and learn from
Agile Data Warehousing Project Management

A cutting-edge response to Ralph Kimball's challenge to the data warehouse community that answers some tough questions about the effectiveness of the relational approach to data warehousing. Written by one of the best-known exponents of the Bill Inmon approach to data warehousing. Addresses head-on the tough issues raised by Kimball and explains how to choose the best modeling technique for solving common data warehouse design problems. Weighs the pros and cons of relational vs. dimensional modeling techniques. Focuses on tough modeling problems, including creating and maintaining keys and modeling calendars, hierarchies, transactions, and data quality.

The Agile Samurai

Using Agile methods, you can bring far greater innovation, value, and quality to any data warehousing (DW), business intelligence (BI), or analytics project. However, conventional Agile methods must be carefully adapted to address the unique characteristics of DW/BI projects. In Agile Analytics, Agile pioneer Ken Collier shows how to do just that. Collier introduces platform-agnostic Agile solutions for integrating infrastructures consisting of diverse operational, legacy, and specialty systems that mix commercial and custom code. Using working examples, he shows how to manage analytics development teams with widely diverse skill sets and how to support enormous and fast-growing data volumes. Collier's techniques offer optimal value whether your projects involve "back-end" data management, "front-end" business analysis, or both. Part I focuses on Agile project management techniques and delivery team coordination, introducing core practices that shape the way your Agile DW/BI project community can collaborate toward success.
Part II presents technical methods for enabling continuous delivery of business value at production-quality levels, including evolving superior designs; test-driven DW development; version control; and project automation. Collier brings together proven solutions you can apply right now—whether you're an IT decision-maker, data warehouse professional, database administrator, business intelligence specialist, or database developer. With his help, you can mitigate project risk, improve business alignment, achieve better results—and have fun along the way.

**Data Pipelines Pocket Reference**

Cowritten by Ralph Kimball, the world's leading data warehousing authority, whose previous books have sold more than 150,000 copies. Delivers real-world solutions for the most time- and labor-intensive portion of data warehousing—data staging, or the extract, transform, load (ETL) process. Delineates best practices for extracting data from scattered sources, removing redundant and inaccurate data, transforming the remaining data into correctly formatted data structures, and then loading the end product into the data warehouse. Offers proven time-saving ETL techniques, comprehensive guidance on building dimensional structures, and crucial advice on ensuring data quality.

**An Introduction to Agile Data Engineering Using Data Vault 2.0**

The data warehousing bible updated for the new millennium. Updated and expanded to reflect the many technological advances occurring since the previous edition, this latest edition of the data warehousing "bible" provides a comprehensive introduction to building data marts, operational data stores, the Corporate Information Factory, exploration warehouses, and Web-enabled...
warehouses. Written by the father of the data warehouse concept, the book also reviews the unique requirements for supporting e-business and explores various ways in which the traditional data warehouse can be integrated with new technologies to provide enhanced customer service, sales, and support—both online and offline—including near-line data storage techniques.

**Building a Scalable Data Warehouse with Data Vault 2.0**

Janet Gregory and Lisa Crispin pioneered the agile testing discipline with their previous work, Agile Testing. Now, in More Agile Testing, they reflect on all they’ve learned since. They address crucial emerging issues, share evolved agile practices, and cover key issues agile testers have asked to learn more about. Packed with new examples from real teams, this insightful guide offers detailed information about adapting agile testing for your environment; learning from experience and continually improving your test processes; scaling agile testing across teams; and overcoming the pitfalls of automated testing. You’ll find brand-new coverage of agile testing for the enterprise, distributed teams, mobile/embedded systems, regulated environments, data warehouse/BI systems, and DevOps practices. You’ll come away understanding • How to clarify testing activities within the team • Ways to collaborate with business experts to identify valuable features and deliver the right capabilities • How to design automated tests for superior reliability and easier maintenance • How agile team members can improve and expand their testing skills • How to plan “just enough,” balancing small increments with larger feature sets and the entire system • How to use testing to identify and mitigate risks associated with your current agile processes and to prevent defects • How to address challenges within your product or organizational context • How to perform exploratory testing using “personas” and “tours” • Exploratory
testing approaches that engage the whole team, using test charters with session- and thread-based techniques • How to bring new agile testers up to speed quickly—without overwhelming them The eBook edition of More Agile Testing also is available as part of a two-eBook collection, The Agile Testing Collection (9780134190624).

The Unified Star Schema: An Agile and Resilient Approach to Data Warehouse and Analytics Design

Work with petabyte-scale datasets while building a collaborative, agile workplace in the process. This practical book is the canonical reference to Google BigQuery, the query engine that lets you conduct interactive analysis of large datasets. BigQuery enables enterprises to efficiently store, query, ingest, and learn from their data in a convenient framework. With this book, you'll examine how to analyze data at scale to derive insights from large datasets efficiently. Valliappa Lakshmanan, tech lead for Google Cloud Platform, and Jordan Tigani, engineering director for the BigQuery team, provide best practices for modern data warehousing within an autoscaled, serverless public cloud. Whether you want to explore parts of BigQuery you're not familiar with or prefer to focus on specific tasks, this reference is indispensable.

The Data Vault Guru

"Each chapter is a practice run for the way we all ought to design our data marts and hence our data warehouses."-Ralph Kimball, from the Foreword. Let the experts show you how to customize data warehouse designs for real business needs in Data Warehouse Design Solutions. To effectively design a data warehouse, you have to understand its many business uses. This guidebook shows you how business managers in different corporate functions actually use data warehouses to make decisions. You'll get a rich set of data
warehouse designs that flow from realistic business cases. Two top experts show you how to customize your data warehouse designs for real-life business needs including: * Sales and marketing * Production and inventory management * Budgeting and financial reporting * Quality control * Product delivery and fulfillment * Strategic business analysis such as determining market share, rates of return on investment, and other key analytic ratios. CD-ROM includes All sample data warehouse designs with accompanying preformatted reports in HTML for specific business uses such as marketing, sales, and financial analysis.

**Agile Analytics**

Data science teams looking to turn research into useful analytics applications require not only the right tools, but also the right approach if they’re to succeed. With the revised second edition of this hands-on guide, up-and-coming data scientists will learn how to use the Agile Data Science development methodology to build data applications with Python, Apache Spark, Kafka, and other tools. Author Russell Jurney demonstrates how to compose a data platform for building, deploying, and refining analytics applications with Apache Kafka, MongoDB, ElasticSearch, d3.js, scikit-learn, and Apache Airflow. You’ll learn an iterative approach that lets you quickly change the kind of analysis you’re doing, depending on what the data is telling you. Publish data science work as a web application, and affect meaningful change in your organization. Build value from your data in a series of agile sprints, using the data-value pyramid Extract features for statistical models from a single dataset Visualize data with charts, and expose different aspects through interactive reports Use historical data to predict the future via classification and regression Translate predictions into actions Get feedback from users after each sprint to keep your project on track
This is the digital version of the printed book (Copyright © 1996). Learning the basics of a modeling technique is not the same as learning how to use and apply it. To develop a data model of an organization is to gain insights into its nature that do not come easily. Indeed, analysts are often expected to understand subtleties of an organization’s structure that may have evaded people who have worked there for years. Here's help for those analysts who have learned the basics of data modeling (or "entity/relationship modeling") but who need to obtain the insights required to prepare a good model of a real business. Structures common to many types of business are analyzed in areas such as accounting, material requirements planning, process manufacturing, contracts, laboratories, and documents. In each chapter, high-level data models are drawn from the following business areas: The Enterprise and Its World The Things of the Enterprise Procedures and Activities Contracts Accounting The Laboratory Material Requirements Planning Process Manufacturing Documents Lower-Level Conventions

**Kimball's Data Warehouse Toolkit Classics**

Refactoring has proven its value in a wide range of development projects—helping software professionals improve system designs, maintainability, extensibility, and performance. Now, for the first time, leading agile methodologist Scott Ambler and renowned consultant Pramodkumar Sadalage introduce powerful refactoring techniques specifically designed for database systems. Ambler and Sadalage demonstrate how small changes to table structures, data, stored procedures, and triggers can significantly enhance virtually any database design—without changing semantics. You’ll learn how to evolve database schemas in step with source code—and become far
more effective in projects relying on iterative, agile methodologies. This comprehensive guide and reference helps you overcome the practical obstacles to refactoring real-world databases by covering every fundamental concept underlying database refactoring. Using start-to-finish examples, the authors walk you through refactoring simple standalone database applications as well as sophisticated multi-application scenarios. You’ll master every task involved in refactoring database schemas, and discover best practices for deploying refactorings in even the most complex production environments. The second half of this book systematically covers five major categories of database refactorings. You’ll learn how to use refactoring to enhance database structure, data quality, and referential integrity; and how to refactor both architectures and methods. This book provides an extensive set of examples built with Oracle and Java and easily adaptable for other languages, such as C#, C++, or VB.NET, and other databases, such as DB2, SQL Server, MySQL, and Sybase. Using this book’s techniques and examples, you can reduce waste, rework, risk, and cost—and build database systems capable of evolving smoothly, far into the future.

**Data Model Scorecard**

Data Modeling for Agile Data Warehouse using Data Vault Modeling Approach. Includes Enterprise Data Warehouse Architecture. This is a complete guide to the data vault data modeling approach. The book also includes business and program considerations for the agile data warehousing and business intelligence program. There are over 200 diagrams and figures concerning modeling, core business concepts, architecture, business alignment, semantics, and modeling comparisons with 3NF and Dimensional modeling.

**Refactoring Databases**
The "father of data warehousing" incorporates the latest technologies into his blueprint for integrated decision support systems. Today's corporate IT and data warehouse managers are required to make a small army of technologies work together to ensure fast and accurate information for business managers. Bill Inmon created the Corporate Information Factory to solve the needs of these managers. Since the First Edition, the design of the factory has grown and changed dramatically. This Second Edition, revised and expanded by 40% with five new chapters, incorporates these changes. This step-by-step guide will enable readers to connect their legacy systems with the data warehouse and deal with a host of new and changing technologies, including Web access mechanisms, e-commerce systems, ERP (Enterprise Resource Planning) systems. The book also looks closely at exploration and data mining servers for analyzing customer behavior and departmental data marts for finance, sales, and marketing.

**Google BigQuery: The Definitive Guide**

This book helps you to understand Snowflake's unique architecture and ecosystem that places it at the forefront of cloud data warehouses. The recipes present in this book will enable you to develop proficiency in managing data on Snowflake and learn Snowflake's novel features such as data sharing, cloning, and time travel.

**Data Model Patterns**

Building upon his earlier book that detailed agile data warehousing programming techniques for the Scrum master, Ralph's latest work illustrates the agile interpretations of the remaining software engineering disciplines: Requirements management benefits from streamlined templates that not only define projects quickly, but
ensure nothing essential is overlooked. Data engineering receives two new "hyper modeling" techniques, yielding data warehouses that can be easily adapted when requirements change without having to invest in ruinously expensive data-conversion programs. Quality assurance advances with not only a stereoscopic top-down and bottom-up planning method, but also the incorporation of the latest in automated test engines. Use this step-by-step guide to deepen your own application development skills through self-study, show your teammates the world's fastest and most reliable techniques for creating business intelligence systems, or ensure that the IT department working for you is building your next decision support system the right way. Learn how to quickly define scope and architecture before programming starts Includes techniques of process and data engineering that enable iterative and incremental delivery Demonstrates how to plan and execute quality assurance plans and includes a guide to continuous integration and automated regression testing Presents program management strategies for coordinating multiple agile data mart projects so that over time an enterprise data warehouse emerges Use the provided 120-day road map to establish a robust, agile data warehousing program

**The Data Warehouse Lifecycle Toolkit**

You have to make sense of enormous amounts of data, and while the notion of “agile data warehousing might sound tricky, it can yield as much as a 3-to-1 speed advantage while cutting project costs in half. Bring this highly effective technique to your organization with the wisdom of agile data warehousing expert Ralph Hughes. Agile Data Warehousing Project Management will give you a thorough introduction to the method as you would practice it in the project room to build a serious “data mart. Regardless of where you are today, this step-by-step implementation guide will prepare you to join or even lead a team in visualizing, building, and validating a
single component to an enterprise data warehouse. Provides a thorough grounding on the mechanics of Scrum as well as practical advice on keeping your team on track. Includes strategies for getting accurate and actionable requirements from a team’s business partner. Revolutionary estimating techniques that make forecasting labor far more understandable and accurate. Demonstrates a blend of Agile methods to simplify team management and synchronize inputs across IT specialties. Enables you and your teams to start simple and progress steadily to world-class performance levels.

**Modeling the Agile Data Warehouse with Data Vault**

DW 2.0: The Architecture for the Next Generation of Data Warehousing is the first book on the new generation of data warehouse architecture, DW 2.0, by the father of the data warehouse. The book describes the future of data warehousing that is technologically possible today, at both an architectural level and technology level. The perspective of the book is from the top down: looking at the overall architecture and then delving into the issues underlying the components. This allows people who are building or using a data warehouse to see what lies ahead and determine what new technology to buy, how to plan extensions to the data warehouse, what can be salvaged from the current system, and how to justify the expense at the most practical level. This book gives experienced data warehouse professionals everything they need in order to implement the new generation DW 2.0. It is designed for professionals in the IT organization, including data architects, DBAs, systems design and development professionals, as well as data warehouse and knowledge management professionals. * First book on the new generation of data warehouse architecture, DW 2.0. * Written by the "father of the data warehouse", Bill Inmon, a columnist and newsletter editor of The Bill Inmon Channel on the Business Intelligence Network. * Long overdue comprehensive
coverage of the implementation of technology and tools that enable the new generation of the DW: metadata, temporal data, ETL, unstructured data, and data quality control.

**The Modern Data Warehouse in Azure**

**The Data Warehouse ETL Toolkit**

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

**Snowflake Cookbook**

Mining big data requires a deep investment in people and time. How can you be sure you’re building the right models? With this hands-on book, you’ll learn a flexible toolset and methodology for building effective analytics applications with Hadoop. Using lightweight tools such as Python, Apache Pig, and the D3.js library, your team will create an agile environment for exploring data, starting with an example application to mine your own email inboxes. You’ll learn an iterative approach that enables you to quickly change the kind of analysis you’re doing, depending on what the data is telling you. All example code in this book is available as working Heroku apps. Create analytics applications by using the agile big data development methodology Build value from your data in a series of agile sprints, using the data-value stack Gain insight by using several data structures to extract multiple features from a single dataset Visualize data with charts, and expose different aspects through interactive reports Use historical data to predict the future, and translate
predictions into action Get feedback from users after each sprint to keep your project on track

**Data Modeling Essentials**

An exciting new approach to dimensional data warehouse design, invented by the author. This how-to guide shows you how a revolutionary new approach to dimensional modeling invented by the author can be used throughout the data warehouse analysis and design phases to improve communication between IT and business users—and consequently—produce better results. Featuring proven techniques devised by the author, this book introduces Business Event Analysis and Modeling (BEAM), a powerful, yet simple, technique for modeling directly with business users. You'll learn how to run facilitated BEAM sessions with users to create consensus on data definitions and a sense of business ownership of the data warehouse design. Demonstrates how to use Business Event Analysis and Modeling (BEAM) to readily capture the 5W1H combinations that represent the unique business events of any organization.

Presents common reusable modeling techniques for handling the complexities of people and groups (the "who"), products and services (the "what"), geography (the "where") for each dimension type.

Offers extensive, detailed examples for translating each BEAM model into a dimensional (star schema) model. The companion website will include all sample models, document templates, and SQL code examples. These proven techniques will help you accomplish your end goal: ensuring that the data warehouse design meet the real needs of users.

**Agile Data Warehousing for the Enterprise**

The data vault methodology presents a unique opportunity to model the enterprise data warehouse using the same automation principles.
applicable in today's software delivery, continuous integration, continuous delivery and continuous deployment while still maintaining the standards expected for governing a corporation's most valuable asset: data. This book provides at first the landscape of a modern architecture and then as a thorough guide on how to deliver a data model that flexes as the enterprise flexes, the data vault. Whether the data is structured, semi-structured or even unstructured one thing is clear, there is always a model either applied early (schema-on-write) or applied late (schema-on-read). Today's focus on data governance requires that we know what we retain about our customers, the data vault provides that focus by delivering a methodology focused on all aspects about the customer and provides some of the best practices for modern day data compliance. The book will delve into every data vault modelling artefact, its automation with sample code, raw vault, business vault, testing framework, a build framework, sample data vault models, how to build automation patterns on top of a data vault and even offer an extension of data vault that provides automated timeline correction, not to mention variation of data vault designed to provide audit trails, metadata control and integration with agile delivery tools.

**DW 2.0: The Architecture for the Next Generation of Data Warehousing**

Multi-Domain Master Data Management delivers practical guidance and specific instruction to help guide planners and practitioners through the challenges of a multi-domain master data management (MDM) implementation. Authors Mark Allen and Dalton Cervo bring their expertise to you in the only reference you need to help your organization take master data management to the next level by incorporating it across multiple domains. Written in a business friendly style with sufficient program planning guidance, this book
covers a comprehensive set of topics and advanced strategies centered on the key MDM disciplines of Data Governance, Data Stewardship, Data Quality Management, Metadata Management, and Data Integration. Provides a logical order toward planning, implementation, and ongoing management of multi-domain MDM from a program manager and data steward perspective. Provides detailed guidance, examples and illustrations for MDM practitioners to apply these insights to their strategies, plans, and processes. Covers advanced MDM strategy and instruction aimed at improving data quality management, lowering data maintenance costs, and reducing corporate risks by applying consistent enterprise-wide practices for the management and control of master data.

**Jumpstart Snowflake**

A thorough update to the industry standard for designing, developing, and deploying data warehouse and business intelligence systems. The world of data warehousing has changed remarkably since the first edition of The Data Warehouse Lifecycle Toolkit was published in 1998. In that time, the data warehouse industry has reached full maturity and acceptance, hardware and software have made staggering advances, and the techniques promoted in the premiere edition of this book have been adopted by nearly all data warehouse vendors and practitioners. In addition, the term "business intelligence" emerged to reflect the mission of the data warehouse: wrangling the data out of source systems, cleaning it, and delivering it to add value to the business. Ralph Kimball and his colleagues have refined the original set of Lifecycle methods and techniques based on their consulting and training experience. The authors understand first-hand that a data warehousing/business intelligence (DW/BI) system needs to change as fast as its surrounding organization evolves. To that end, they walk you through the detailed steps of designing, developing, and deploying a DW/BI system.
You’ll learn to create adaptable systems that deliver data and analyses to business users so they can make better business decisions.

**Building the Data Warehouse**

Data models are the main medium used to communicate data requirements from business to IT, and within IT from analysts, modelers, and architects, to database designers and developers. Therefore it’s essential to get the data model right. But how do you determine right? That’s where the Data Model Scorecard® comes in. The Data Model Scorecard is a data model quality scoring tool containing ten categories aimed at improving the quality of your organization’s data models. Many of my consulting assignments are dedicated to applying the Data Model Scorecard to my client’s data models – I will show you how to apply the Scorecard in this book.

This book, written for people who build, use, or review data models, contains the Data Model Scorecard template and an explanation along with many examples of each of the ten Scorecard categories. There are three sections: In Section I, Data Modeling and the Need for Validation, receive a short data modeling primer in Chapter 1, understand why it is important to get the data model right in Chapter 2, and learn about the Data Model Scorecard in Chapter 3. In Section II, Data Model Scorecard Categories, we will explain each of the ten categories of the Data Model Scorecard. There are ten chapters in this section, each chapter dedicated to a specific Scorecard category: · Chapter 4: Correctness · Chapter 5: Completeness · Chapter 6: Scheme · Chapter 7: Structure · Chapter 8: Abstraction · Chapter 9: Standards · Chapter 10: Readability · Chapter 11: Definitions · Chapter 12: Consistency · Chapter 13: Data In Section III, Validating Data Models, we will prepare for the model review (Chapter 14), cover tips to help during the model review (Chapter 15), and then review a data model based upon an
actual project (Chapter 16).

**The Data Model Resource Book**

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

• As the official source of knowledge on DAD, it includes greatly improved and enhanced strategies with a revised set of goal diagrams based upon learnings from applying DAD in the field.

• It is an essential handbook to help coaches and teams make better decisions in their daily work, providing a wealth of ideas for experimenting with agile and lean techniques while providing specific guidance and trade-offs for those “it depends” questions.

• It makes a perfect study guide for Disciplined Agile certification. Why “fail fast” (as our industry likes to recommend) when you can learn quickly on your journey to high performance? With this handbook, you can make better decisions based upon proven, context-based strategies, leading to earlier success and better outcomes.

Data pipelines are the foundation for success in data analytics. Moving data from numerous diverse sources and transforming it to provide context is the difference between having data and actually gaining value from it. This pocket reference defines data pipelines and explains how they work in today’s modern data stack. You’ll learn common considerations and key decision points when implementing pipelines, such as batch versus streaming data.
ingestion and build versus buy. This book addresses the most common decisions made by data professionals and discusses foundational concepts that apply to open source frameworks, commercial products, and homegrown solutions. You'll learn: What a data pipeline is and how it works How data is moved and processed on modern data infrastructure, including cloud platforms Common tools and products used by data engineers to build pipelines How pipelines support analytics and reporting needs Considerations for pipeline maintenance, testing, and alerting

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