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# The Data Warehouse Toolkit

Third Edition

The Definitive Guide  
to Dimensional  
Modeling

**Ralph Kimball**  
**Margy Ross**



# The Data Warehouse Toolkit The Definitive Guide To Dimensional Modeling

**Ralph Kimball**



## **The Data Warehouse Toolkit The Definitive Guide To Dimensional Modeling:**

**The Data Warehouse Toolkit** Ralph Kimball, Margy Ross, 2013-07-01 Updated new edition of Ralph Kimball's groundbreaking book on dimensional modeling for data warehousing and business intelligence. The first edition of Ralph Kimball's *The Data Warehouse Toolkit* introduced the industry to dimensional modeling and now his books are considered the most authoritative guides in this space. This new third edition is a complete library of updated dimensional modeling techniques, the most comprehensive collection ever. It covers new and enhanced star schema dimensional modeling patterns, adds two new chapters on ETL techniques, includes new and expanded business matrices for 12 case studies, and more. Authored by Ralph Kimball and Margy Ross, known worldwide as educators, consultants, and influential thought leaders in data warehousing and business intelligence. Begins with fundamental design recommendations and progresses through increasingly complex scenarios. Presents unique modeling techniques for business applications such as inventory management, procurement, invoicing, accounting, customer relationship management, big data analytics, and more. Draws real world case studies from a variety of industries including retail sales, financial services, telecommunications, education, health care, insurance, e-commerce, and more. Design dimensional databases that are easy to understand and provide fast query response with *The Data Warehouse Toolkit The Definitive Guide to Dimensional Modeling 3rd Edition*. *The Data Warehouse Toolkit* Ralph Kimball, Margy Ross, 2011-08-08 This old edition was published in 2002. The current and final edition of this book is *The Data Warehouse Toolkit The Definitive Guide to Dimensional Modeling 3rd Edition* which was published in 2013 under ISBN 9781118530801. The authors begin with fundamental design recommendations and gradually progress step by step through increasingly complex scenarios. Clear cut guidelines for designing dimensional models are illustrated using real world data warehouse case studies drawn from a variety of business application areas and industries including Retail sales and e-commerce, Inventory management, Procurement, Order management, Customer relationship management, CRM, Human resources management, Accounting, Financial services, Telecommunications, and utilities, Education, Transportation, Health care, and insurance. By the end of the book, you will have mastered the full range of powerful techniques for designing dimensional databases that are easy to understand and provide fast query response. You will also learn how to create an architected framework that integrates the distributed data warehouse using standardized dimensions and facts. *The Data Warehouse Toolkit* Ralph Kimball, 1996-02-16 one of the definitive books of our industry. If you take the time to read only one professional book, make it this book. W. H. Inmon. One of the most dramatic new developments in database design, the dimensional data warehouse is a powerful database model that significantly enhances managers' ability to quickly analyze large multidimensional data sets. Written by the leading proponent of this revolutionary new approach, this valuable book CD toolkit outfits you with all the nuts and bolts information you need to design, build, manage, and use dimensional data warehouses for virtually any type of business application, as well as software for querying dimensional data.

warehouses Employing many real life case studies of data warehouses Ralph Kimball provides clear cut guidelines on how to model data and design data warehouses to support advanced multidimensional decision support systems Beginning with the relatively simple example of a data warehouse for a grocery store he progresses step by step through an increasingly complex array of business applications in retail manufacturing banking insurance subscriptions and airline reservations By the end of the book you will have mastered the full range of powerful techniques for creating controlling and navigating dimensional business databases that are easy to understand and navigate On the CD ROM you ll find Software for querying dimensional data warehouses Working models of all the databases described in the book      **Kimball's Data Warehouse**

**Toolkit Classics, 3 Volume Set** Ralph Kimball,Margy Ross,Warren Thornthwaite,Joy Mundy,Bob Becker,Joe Caserta,2014-02-24 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 inaccurate 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 structures providing practical examples of beginning through advanced techniques      *The Data Warehouse Toolkit* Spencer M. Riley,2015-08-19 This updated and expanded second edition of the The Data Warehouse Toolkit The Definitive Guide to Dimensional Modeling provides a user friendly introduction to the subject Taking a clear structural framework it guides the reader through the subject s core elements A flowing writing style combines with the use of illustrations and diagrams throughout the text to ensure the reader understands even the most complex of concepts This succinct and enlightening overview is a required reading for all those interested in the subject We hope you find this book useful in shaping your future career Business

The Data Warehouse Lifecycle Toolkit Ralph Kimball, Margy Ross, Warren Thornthwaite, Joy Mundy, Bob Becker, 2011-03-08 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 Kimball's Data Warehouse Toolkit Classics Ralph Kimball, Margy Ross, Bob Becker, Joy Mundy, Warren Thornthwaite, 2009-04-06 Cowritten by Ralph Kimball the world s leading data warehousing authority 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 This book is also available as part of the Kimball s Data Warehouse Toolkit Classics Box Set ISBN 9780470479575 with the following 3 books The Data Warehouse Toolkit 2nd Edition 9780471200246 The Data Warehouse Lifecycle Toolkit 2nd Edition 9780470149775 The Data Warehouse ETL Toolkit 9780764567575 **The Data Warehouse ETL Toolkit** Ralph Kimball, Joe Caserta, 2011-04-27 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 **The Microsoft Data Warehouse Toolkit** Joy Mundy, Warren Thornthwaite, 2007-03-22 This groundbreaking book is the first in the Kimball Toolkit series to be product specific Microsoft s BI toolset has undergone significant changes in the SQL Server 2005 development cycle SQL Server 2005 is the first viable full functioned data warehouse and business intelligence platform to be

offered at a price that will make data warehousing and business intelligence available to a broad set of organizations This book is meant to offer practical techniques to guide those organizations through the myriad of challenges to true success as measured by contribution to business value Building a data warehousing and business intelligence system is a complex business and engineering effort While there are significant technical challenges to overcome in successfully deploying a data warehouse the authors find that the most common reason for data warehouse project failure is insufficient focus on the business users and business problems In an effort to help people gain success this book takes the proven Business Dimensional Lifecycle approach first described in best selling The Data Warehouse Lifecycle Toolkit and applies it to the Microsoft SQL Server 2005 tool set Beginning with a thorough description of how to gather business requirements the book then works through the details of creating the target dimensional model setting up the data warehouse infrastructure creating the relational atomic database creating the analysis services databases designing and building the standard report set implementing security dealing with metadata managing ongoing maintenance and growing the DW BI system All of these steps tie back to the business requirements Each chapter describes the practical steps in the context of the SQL Server 2005 platform

**Intended Audience** The target audience for this book is the IT department or service provider consultant who is Planning a small to mid range data warehouse project Evaluating or planning to use Microsoft technologies as the primary or exclusive data warehouse server technology Familiar with the general concepts of data warehousing and business intelligence The book will be directed primarily at the project leader and the warehouse developers although everyone involved with a data warehouse project will find the book useful Some of the book s content will be more technical than the typical project leader will need other chapters and sections will focus on business issues that are interesting to a database administrator or programmer as guiding information The book is focused on the mass market where the volume of data in a single application or data mart is less than 500 GB of raw data While the book does discuss issues around handling larger warehouses in the Microsoft environment it is not exclusively or even primarily concerned with the unusual challenges of extremely large datasets

**About the Authors** JOY MUNDY has focused on data warehousing and business intelligence since the early 1990s specializing in business requirements analysis dimensional modeling and business intelligence systems architecture Joy co founded InfoDynamics LLC a data warehouse consulting firm then joined Microsoft WebTV to develop closed loop analytic applications and a packaged data warehouse Before returning to consulting with the Kimball Group in 2004 Joy worked in Microsoft SQL Server product development managing a team that developed the best practices for building business intelligence systems on the Microsoft platform Joy began her career as a business analyst in banking and finance She graduated from Tufts University with a BA in Economics and from Stanford with an MS in Engineering Economic Systems

WARREN THORNTON has been building data warehousing and business intelligence systems since 1980 Warren worked at Metaphor for eight years where he managed the consulting organization and implemented many major

data warehouse systems After Metaphor Warren managed the enterprise wide data warehouse development at Stanford University He then co founded InfoDynamics LLC a data warehouse consulting firm with his co author Joy Mundy Warren joined up with WebTV to help build a world class multi terabyte customer focused data warehouse before returning to consulting with the Kimball Group In addition to designing data warehouses for a range of industries Warren speaks at major industry conferences and for leading vendors and is a long time instructor for Kimball University Warren holds an MBA in Decision Sciences from the University of Pennsylvania s Wharton School and a BA in Communications Studies from the University of Michigan RALPH KIMBALL PH D has been a leading visionary in the data warehouse industry since 1982 and is one of today s most internationally well known authors speakers consultants and teachers on data warehousing He writes the Data Warehouse Architect column for Intelligent Enterprise formerly DBMS magazine *CD-ROM to Accompany The Data Warehouse Toolkit* Ralph Kimball,1996 **The Microsoft Data Warehouse Toolkit** Joy Mundy,Warren Thornthwaite,2011-02-25 Best practices and invaluable advice from world renowned data warehouse experts In this book leading data warehouse experts from the Kimball Group share best practices for using the upcoming Business Intelligence release of SQL Server referred to as SQL Server 2008 R2 In this new edition the authors explain how SQL Server 2008 R2 provides a collection of powerful new tools that extend the power of its BI toolset to Excel and SharePoint users and they show how to use SQL Server to build a successful data warehouse that supports the business intelligence requirements that are common to most organizations Covering the complete suite of data warehousing and BI tools that are part of SQL Server 2008 R2 as well as Microsoft Office the authors walk you through a full project lifecycle including design development deployment and maintenance Features more than 50 percent new and revised material that covers the rich new feature set of the SQL Server 2008 R2 release as well as the Office 2010 release Includes brand new content that focuses on PowerPivot for Excel and SharePoint Master Data Services and discusses updated capabilities of SQL Server Analysis Integration and Reporting Services Shares detailed case examples that clearly illustrate how to best apply the techniques described in the book The accompanying Web site contains all code samples as well as the sample database used throughout the case studies The Microsoft Data Warehouse Toolkit Second Edition provides you with the knowledge of how and when to use BI tools such as Analysis Services and Integration Services to accomplish your most essential data warehousing tasks Three Volume Set of Ralph Kimball's Toolkit Books Ralph Kimball,2000-06-12 Ralph Kimball s three data warehousing books The Data Warehouse Toolkit The Data Warehouse Lifecycle Toolkit and The Data Webhouse Toolkit provide you with everything you will need to create manage and use your data warehouse His first book The Data Warehouse Toolkit is the definitive guide to building a data warehouse Kimball uses actual case studies of existing data warehouses developed for specific types of business applications such as retail manufacturing banking insurance subcriptions and airline reservations Using the techniques learned in Kimball s first book The Data Warehouse Lifecycle Toolkit carries them to the larger issues of

delivering complete data marts and data warehouses The book shows you all the practical details involved in planning designing developing deploying and growing data warehouses The Data Webhouse Toolkit is a groundbreaking guide which introduces the Webhouse a powerful new way of capturing valuable information flowing into a Web site and ordering it in ways that are useful to managers strategic decision makers and customers *Mastering Data Warehouse Design* Claudia Imhoff,Nicholas Galembo,Jonathan G.Geiger,2008-08 *The Data Warehouse Lifecycle Toolkit* Ralph Kimball,1998-08-27 A comprehensive thoughtful and detailed book that will be of inestimable value to anyone struggling with the complex details of designing building and maintaining an enterprise wide decision support system Highly recommended Robert S Craig Vice President Application Architectures Hurwitz Group Inc In his bestselling book The Data Warehouse Toolkit Ralph Kimball showed you how to use dimensional modeling to design effective and usable data warehouses Now he carries these techniques to the larger issues of delivering complete data marts and data warehouses Drawing upon their experiences with numerous data warehouse implementations he and his coauthors show you all the practical details involved in planning designing developing deploying and growing data warehouses Important topics include The Business Dimensional Lifecycle™ approach to data warehouse project planning and management Techniques for gathering requirements more effectively and efficiently Advanced dimensional modeling techniques to capture the most complex business rules The Data Warehouse Bus Architecture and other approaches for integrating data marts into super flexible data warehouses A framework for creating your technical architecture Techniques for minimizing the risks involved with data staging Aggregations and other effective ways to boost data warehouse performance Cutting edge Internet based data warehouse security techniques The CD ROM supplies you with Complete data warehouse project plan tasks and responsibilities A set of sample models that demonstrate the Bus Architecture Blank versions of the templates and tools described in the book Checklists to use at key points in the project **The Data Warehouse Lifecycle Toolkit** Ralph Kimball,2008 **The Data Warehouse Lifecycle Toolkit, 2nd Ed** Ralph Kimball,Margy Ross,Warren Thorthwaite,Bob Becker,Joy Mundy,2008-06 Market\_Desc Data warehouse Designers Data warehouse Architects Data warehouse Developers Data warehouse Managers Special Features The current first edition has sold more than 72 000 copies generating net revenue of more than 2 5 million The methods described in this book have been adopted by almost all leading data warehouse vendors Ralph Kimball and his co authors are recognized as the driving thought leaders in the data warehousing industry there is no direct competition The authors actively promote this methodology in training and consulting worldwide and in their writing in magazines and online About The Book The book covers best practices from data warehouse project inception through on going program management About 30 to 40% of the content in the book is updated and new This revised tutorial covers major lifecycle topics such as dimensional modeling tech architecture ETL BI etc It is targeted at both novice and experienced data warehouse professionals **Star Schema The Complete Reference** Christopher Adamson,2010-07-22 The definitive guide to



dimensional design for your data warehouse Learn the best practices of dimensional design Star Schema The Complete Reference offers in depth coverage of design principles and their underlying rationales Organized around design concepts and illustrated with detailed examples this is a step by step guidebook for beginners and a comprehensive resource for experts This all inclusive volume begins with dimensional design fundamentals and shows how they fit into diverse data warehouse architectures including those of W H Inmon and Ralph Kimball The book progresses through a series of advanced techniques that help you address real world complexity maximize performance and adapt to the requirements of BI and ETL software products You are furnished with design tasks and deliverables that can be incorporated into any project regardless of architecture or methodology Master the fundamentals of star schema design and slow change processing Identify situations that call for multiple stars or cubes Ensure compatibility across subject areas as your data warehouse grows Accommodate repeating attributes recursive hierarchies and poor data quality Support conflicting requirements for historic data Handle variation within a business process and correlation of disparate activities Boost performance using derived schemas and aggregates Learn when it s appropriate to adjust designs for BI and ETL tools

**Agile Data Warehouse Design** Lawrence Corr, Jim Stagnitto, 2011-11 Agile Data Warehouse Design is a step by step guide for capturing data warehousing business intelligence DW BI requirements and turning them into high performance dimensional models in the most direct way by modelstorming data modeling brainstorming with BI stakeholders This book describes BEAM an agile approach to dimensional modeling for improving communication between data warehouse designers BI stakeholders and the whole DW BI development team BEAM provides tools and techniques that will encourage DW BI designers and developers to move away from their keyboards and entity relationship based tools and model interactively with their colleagues The result is everyone thinks dimensionally from the outset Developers understand how to efficiently implement dimensional modeling solutions Business stakeholders feel ownership of the data warehouse they have created and can already imagine how they will use it to answer their business questions Within this book you will learn Agile dimensional modeling using Business Event Analysis 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 Lawrence Corr 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

Modeling the Agile

Data Warehouse with Data Vault Hans Hultgren, 2012-11-16 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 **Building and Maintaining a Data Warehouse** Fon Silvers, 2008-03-18 As it is with building a house most of the work necessary to build a data warehouse is neither visible nor obvious when looking at the completed product While it may be easy to plan for a data warehouse that incorporates all the right concepts taking the steps needed to create a warehouse that is as functional and user friendly as it is theoreti

## Adopting the Tune of Phrase: An Psychological Symphony within **The Data Warehouse Toolkit The Definitive Guide To Dimensional Modeling**

In a world eaten by screens and the ceaseless chatter of instant transmission, the melodic beauty and emotional symphony produced by the published word often diminish into the backdrop, eclipsed by the persistent noise and disturbances that permeate our lives. However, nestled within the pages of **The Data Warehouse Toolkit The Definitive Guide To Dimensional Modeling** a wonderful fictional prize overflowing with organic thoughts, lies an immersive symphony waiting to be embraced. Constructed by a wonderful composer of language, that charming masterpiece conducts visitors on an emotional trip, well unraveling the hidden melodies and profound impact resonating within each carefully constructed phrase. Within the depths of this emotional examination, we shall explore the book is key harmonies, analyze its enthralling writing style, and submit ourselves to the profound resonance that echoes in the depths of readers souls.

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### **The Data Warehouse Toolkit The Definitive Guide To Dimensional Modeling Introduction**

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