Data Model Patterns A Metadata Map The Morgan Kaufmann Series In Data Management Systems

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UML and Data Modeling David C. Hay 2011-11-01 Here you will learn how to develop an attractive, easily readable, conceptual, business-oriented entity/relationship model, using a variation on the UML Class Model notation. This book has two audiences: • Data modelers (both analysts and database designers) who are convinced that UML has nothing to do with them; and • UML experts who don't realize that architectural data modeling really is different from object modeling (and that the differences are important). David Hay's objective is to finally bring these two groups together in peace. Here all modelers will receive guidance on how to produce a high quality (that is, readable) entity/relationship model to describe the data architecture of an organization. The notation involved happens to be the one for class models in the Unified Modeling Language, even though UML was originally developed to support object-oriented design. Designers have a different view of the world from those who develop business-oriented conceptual data models, which means that to use UML for architectural modeling requires some adjustments. These adjustments are described in this book. David Hay is the author of Enterprise Model Patterns: Describing the World, a comprehensive model of a generic enterprise. The diagrams were at various levels of abstraction, and they were all rendered in the slightly modified version of UML Class Diagrams presented here. This book is a handbook to describe how to build models such as these. By way of background, an appendix provides a history of the two groups, revealing the sources of their different attitudes towards the system development process. If you are an old-school ER modeler and now find yourself having to come up to speed on UML to get that next job (or keep the current one), this is your guidebook to success. If you are a long time object oriented programmer who has to interact with data modelers, this book is for you too. David has done the hard work of mapping out how to do a logical entity relationship model using standard (and accepted) UML diagram components. This book shows you step-by-step, with ample examples, how to get from here to there with the least pain possible for all concerned. Kent Graziano Certified Data Vault Master and Oracle ACE Past-President of ODTUG & RMOUG Brilliantly organized: three books hidden in one cohesive work. Not withstanding the tremendous value provided by cross-training data architects/modelers and object modelers/architects, making each better at what they do, Appendix B presents an absolutely awesome concise, yet

detailed, history of modeling objects and data that clearly documents the differences in the approaches over the years and helps bring it all into perspective. This book is packed with useful information. Even the footnotes add clarity and offer interesting and often humorous editorial insight making it a fun read. Whatever viewpoint the reader is coming from this book has something to offer as long as the reader maintains an open mind. Roland Berg Senior Architect Diligent Consulting, Inc. San Antonio, Texas

Data Model Patterns: A Metadata Map David C. Hay 2010-07-20 Data Model Patterns: A Metadata Map not only presents a conceptual model of a metadata repository but also demonstrates a true enterprise data model of the information technology industry itself. It provides a step-by-step description of the model and is organized so that different readers can benefit from different parts. It offers a view of the world being addressed by all the techniques, methods, and tools of the information processing industry (for example, object-oriented design, CASE, business process re-engineering, etc.) and presents several concepts that need to be addressed by such tools. This book is pertinent, with companies and government agencies realizing that the data they use represent a significant corporate resource recognize the need to integrate data that has traditionally only been available from disparate sources. An important component of this integration is management of the "metadata" that describe, catalogue, and provide access to the various forms of underlying business data. The "metadata repository" is essential to keep track of the various physical components of these systems and their semantics. The book is ideal for data management professionals, data modeling and design professionals, and data warehouse and database repository designers. A comprehensive work based on the Zachman Framework for information architecture—encompassing the Business Owner's, Architect's, and Designer's views, for all columns (data, activities, locations, people, timing, and motivation) Provides a step-by-step description of model and is organized so that different readers can benefit from different parts Provides a view of the world being addressed by all the techniques, methods and tools of the information processing industry (for example, object-oriented design, CASE, business process re-engineering, etc.) Presents many concepts that are not currently being addressed by such tools — and should be

Enterprise Model Patterns David C. Hay 2011-01-01 Here you'll find one key to the development of a successful information system: Clearly capture and communicate both the abstract and concrete building blocks of data that describe your organization. In 1995, David Hay published Data Model Patterns: Conventions of Thought - the groundbreaking book on how to use standard data models to describe the standard business situations. Enterprise Model Patterns: Describing the World builds on the concepts presented there, adds 15 years of practical experience, and presents a more comprehensive view. You will learn how to apply both the abstract and concrete elements of your enterprise's architectural data model through four levels of abstraction: Level 0: An abstract template that underlies the Level 1 model that follows, plus two meta models: • Information Resources. In addition to books, articles, and e-mail notes, it also includes photographs, videos, and sound recordings. • Accounting. Accounting is remarkable because it is itself a modeling language. It takes a very different approach than data modelers in that instead of using entities and entity classes that represent things in the world, it is concerned with accounts that represent bits of value to the organization. Level 1: An enterprise model that is generic enough to apply to any company or government agency, but concrete enough to be readily understood by all. It describes: • People and Organization. Who is involved with the business? The people involved are not only the employees within the organization, but customers, agents, and others with whom the organization comes in contact. Organizations of interest include the enterprise itself and its own internal departments, as well as customers, competitors, government agencies, and the like. • Geographic Locations. Where is business conducted? A geographic location may be either a geographic area (defined as any bounded area on the Earth), a geographic point (used to identify a particular location), or, if you are an oil company for example, a geographic solid (such as an oil reserve). • Assets. What tangible items are used to carry out the business? These are

any physical things that are manipulated, sometimes as products, but also as the means to producing products and services. • Activities. How is the business carried out? This model not only covers services offered, but also projects and any other kinds of activities. In addition, the model describes the events that cause activities to happen. • Time. All data is positioned in time, but some more than others. Level 2: A more detailed model describing specific functional areas: • Facilities • Human Resources • Communications and Marketing • Contracts • Manufacturing • The Laboratory Level 3: Examples of the details a model can have to address what is truly unique in a particular industry. Here you see how to address the unique bits in areas as diverse as: • Criminal Justice. The model presented here is based on the "Global Justice XML Data Model" (GJXDM). • Microbiology • Banking. The model presented here is the result of working for four different banks and then adding some thought to come up with something different from what is currently in any of them. • Highways. The model here is derived from a project in a Canadian Provincial Highway Department, and addresses the question "what is a road?"

Measuring Data Quality for Ongoing Improvement Laura Sebastian-Coleman 2012-12-31 The Data Quality Assessment Framework shows you how to measure and monitor data quality, ensuring quality over time. You'll start with general concepts of measurement and work your way through a detailed framework of more than three dozen measurement types related to five objective dimensions of quality: completeness, timeliness, consistency, validity, and integrity. Ongoing measurement, rather than one time activities will help your organization reach a new level of data quality. This plain-language approach to measuring data can be understood by both business and IT and provides practical guidance on how to apply the DQAF within any organization enabling you to prioritize measurements and effectively report on results. Strategies for using data measurement to govern and improve the quality of data and guidelines for applying the framework within a data asset are included. You'll come away able to prioritize which measurement types to implement, knowing where to place them in a data flow and how frequently to measure.

Common conceptual models for defining and storing of data quality results for purposes of trend analysis are also included as well as generic business requirements for ongoing measuring and monitoring including calculations and comparisons that make the measurements meaningful and help understand trends and detect anomalies. Demonstrates how to leverage a technology independent data quality measurement framework for your specific business priorities and data quality challenges Enables discussions between business and IT with a non-technical vocabulary for data quality measurement Describes how to measure data quality on an ongoing basis with generic measurement types that can be applied to any situation

Common Information Models for an Open, Analytical, and Agile World Mandy Chessell 2015-04-08 Maximize the Value of Your Information Throughout Even the Most Complex IT Project Foreword by Tim Vincent, IBM Fellow and Vice President, CTO for IBM Analytics Group To drive maximum value from complex IT projects, IT professionals need a deep understanding of the information their projects will use. Too often, however, IT treats information as an afterthought: the "poor stepchild" behind applications and infrastructure. That needs to change. This book will help you change it. Five senior IBM architects show you how to use information-centric views to give data a central role in project design and delivery. Using Common Information Models (CIM), you learn how to standardize the way you represent information, making it easier to design, deploy, and evolve even the most complex systems. Using a complete case study, the authors explain what CIMs are, how to build them, and how to maintain them. You learn how to clarify the structure, meaning, and intent of any information you may exchange, and then use your CIM to improve integration, collaboration, and agility. In today's mobile, cloud, and analytics environments, your information is more valuable than ever. To build systems that make the most of it, start right here. Coverage Includes • Mastering best practices for building and maintaining a CIM • Understanding CIM components and artifacts: scope, perspectives, and depth of detail • Choosing the right patterns for structuring your CIM • Integrating a CIM into broader governance • Using

tools to manage your CIM more effectively • Recognizing the importance of non-functional characteristics, such as availability, performance, and security, in system design • Growing CIM value by expanding their scope and usage • Previewing the future of CIMs

Achieving Buzzword Compliance David C. Hay 2018-06-15 Understand the language and vocabulary of Data Architecture. The Data Architecture field is rife with terms that have become "fashionable". Some of the terms began with very specific, specialized, meanings – but as their use spread, they lost the precision of their technical definitions and become, well, "buzzwords". A buzzword is "a word or expression from a particular subject area that has become fashionable because it has been used a lot". Compliance is "the obeying of an accepted principle or instruction that states the way things are or should be done." The assignment is to take buzzwords and follow rules to use them correctly. We cut through the hype to arrive at buzzword compliance – the state where you fully understand the words that in fact have real meaning in the data architecture industry. This book will rationalize the various ways all these terms are defined. Of necessity, the book must address all aspects of describing an enterprise and its data management technologies. This includes a wide range of subjects, from entity/relationship modeling, through the semantic web, to database issues like relational and "beyond relational" ("NoSQL") approaches. In each case, the definitions for the subject are meant to be detailed enough to make it possible to understand basic principles—while recognizing that a full understanding will require consulting the sources where they are more completely described. The book's Glossary contains a catalogue of definitions and its Bibliography contains a comprehensive set of references.

Data Modeling of Financial Derivatives Robert Mamayev 2014-02-28 Written in plain English and based on successful client engagements, Data Modeling of Financial Derivatives: A Conceptual Approach introduces new and veteran data modelers, financial analysts, and IT professionals to the fascinating world of financial derivatives. Covering futures, forwards, options, swaps, and forward rate agreements, finance and modeling expert Robert Mamayev shows you step-by-step how to structure and describe financial data using advanced data modeling techniques. The book introduces IT professionals, in particular, to various financial and data modeling concepts that they may not have seen before, giving them greater proficiency in the financial language of derivatives—and greater ability to communicate with financial analysts without fear or hesitation. Such knowledge will be especially useful to those looking to pick up the necessary skills to become productive right away working in the financial sector. Financial analysts reading this book will come to grips with various data modeling concepts and therefore be in better position to explain the underlying business to their IT audience. Data Modeling of Financial Derivatives—which presumes no advanced knowledge of derivatives or data modeling—will help you: Learn the best entity–relationship modeling method out there—Barker's CASE methodology—and its application in the financial industry Understand how to identify and creatively reuse data modeling patterns Gain an understanding of financial derivatives and their various applications Learn how to model derivatives contracts and understand the reasoning behind certain design decisions Resolve derivatives data modeling complexities parsimoniously so that your clients can understand them intuitively Packed with numerous examples, diagrams, and techniques, this book will enable you to recognize the various design patterns that you are most likely to encounter in your professional career and apply them successfully in practice. Anyone working with financial models will find it an invaluable tool and career booster.

Navigating the Labyrinth Laura Sebastian-Coleman 2018-05-09 An Executive Guide to Data Management

Architecture and Patterns for IT Service Management, Resource Planning, and Governance: Making Shoes for the Cobbler's Children Charles T. Betz 2011-11-02 Information technology supports efficient operations, enterprise integration, and seamless value delivery, yet itself is too often inefficient, un-integrated, and of unclear value. This completely rewritten version of the bestselling Architecture and Patterns for IT Service Management, Resource Planning and Governance retains the original (and still unique) approach: apply the discipline of enterprise

architecture to the business of large scale IT management itself. Author Charles Betz applies his deep practitioner experience to a critical reading of ITIL 2011, COBIT version 4, the CMMI suite, the IT portfolio management literature, and the Agile/Lean IT convergence, and derives a value stream analysis, IT semantic model, and enabling systems architecture (covering current topics such as CMDB/CMS, Service Catalog, and IT Portfolio Management). Using the concept of design patterns, the book then presents dozens of visual models documenting challenging problems in integrating IT management, showing how process, data, and IT management systems must work together to enable IT and its business partners. The edition retains the fundamental discipline of traceable process, data, and system analysis that has made the first edition a favored desk reference for IT process analysts around the world. This best seller is a must read for anyone charged with enterprise architecture, IT planning, or IT governance and management. Lean-oriented process analysis of IT management, carefully distinguished from an IT functional model Field-tested conceptual information model with definitions and usage scenarios, mapped to both the process and system architectures Integrated architecture for IT management systems Synthesizes Enterprise Architecture, IT Service Management, and IT Portfolio Management in a practical way

.NET Design Patterns Praseed Pai 2017-01-31 Explore the world of .NET design patterns and bring the benefits that the right patterns can offer to your toolkit today About This Book Dive into the powerful fundamentals of .NET framework for software development The code is explained piece by piece and the application of the pattern is also showcased. This fast-paced guide shows you how to implement the patterns into your existing applications Who This Book Is For This book is for those with familiarity with .NET development who would like to take their skills to the next level and be in the driver's seat when it comes to modern development techniques. Basic object-oriented C# programming experience and an elementary familiarity with the .NET framework library is required. What You Will Learn Put patterns and pattern catalogs into the right perspective Apply patterns for software development under C#/.NET Use GoF and

other patterns in real-life development scenarios Be able to enrich your design vocabulary and well articulate your design thoughts Leverage object/functional programming by mixing OOP and FP Understand the reactive programming model using Rx and RxJs Writing compositional code using C# LINQ constructs Be able to implement concurrent/parallel programming techniques using idioms under .NET Avoiding pitfalls when creating compositional, readable, and maintainable code using imperative, functional, and reactive code. In Detail Knowing about design patterns enables developers to improve their code base, promoting code reuse and making their design more robust. This book focuses on the practical aspects of programming in .NET. You will learn about some of the relevant design patterns (and their application) that are most widely used. We start with classic object-oriented programming (OOP) techniques, evaluate parallel programming and concurrency models, enhance implementations by mixing OOP and functional programming, and finally to the reactive programming model where functional programming and OOP are used in synergy to write better code. Throughout this book, we'll show you how to deal with architecture/design techniques, GoF patterns, relevant patterns from other catalogs, functional programming, and reactive programming techniques. After reading this book, you will be able to convincingly leverage these design patterns (factory pattern, builder pattern, prototype pattern, adapter pattern, facade pattern, decorator pattern, observer pattern and so on) for your programs. You will also be able to write fluid functional code in .NET that would leverage concurrency and parallelism! Style and approach This tutorial-based book takes a step-by-step approach. It covers the major patterns and explains them in a detailed manned along with code examples.

Complex Systems in Knowledge-based Environments: Theory, Models and Applications Andreas Tolk 2009-01-17 The tremendous growth in the availability of inexpensive computing power and easy availability of computers have generated tremendous interest in the design and imp-mentation of Complex Systems. Computer-based solutions offer great support in the design of Complex Systems. Furthermore, Complex

Systems are becoming incre- ingly complex themselves. This research book comprises a selection of state-of-the-art contributions to topics dealing with Complex Systems in a Knowledge-based En- ronment. Complex systems are ubiquitous. Examples comprise, but are not limited to System of Systems, Service-oriented Approaches, Agent-based Systems, and Complex Distributed Virtual Systems. These are application domains that require knowledge of engineering and management methods and are beyond the scope of traditional systems. The chapters in this book deal with a selection of topics which range from unc- tainty representation, management and the use of ontological means which support and are large-scale business integration. All contributions were invited and are based on the recognition of the expertise of the contributing authors in the field. By colle- ing these sources together in one volume, the intention was to present a variety of tools to the reader to assist in both study and work. The second intention was to show how the different facets presented in the chapters are complementary and contribute towards this emerging discipline designed to aid in the analysis of complex systems.

Executing Data Quality Projects Danette McGilvray 2008-09-01 Information is currency. Recent studies show that data quality problems are costing businesses billions of dollars each year, with poor data linked to waste and inefficiency, damaged credibility among customers and suppliers, and an organizational inability to make sound decisions. In this important and timely new book, Danette McGilvray presents her "Ten Steps approach to information quality, a proven method for both understanding and creating information quality in the enterprise. Her trademarked approach—in which she has trained Fortune 500 clients and hundreds of workshop attendees—applies to all types of data and to all types of organizations. * Includes numerous templates, detailed examples, and practical advice for executing every step of the "Ten Steps approach. * Allows for quick reference with an easy-to-use format highlighting key concepts and definitions, important checkpoints, communication activities, and best practices. * A companion Web site includes links to numerous data quality resources, including many of the planning and information-gathering templates featured in the text, quick summaries of key ideas from the Ten Step methodology, and other tools and information available online.

Web-Based Supply Chain Management and Digital Signal Processing: Methods for Effective Information Administration and Transmission Ramachandra, Manjunath 2009-10-31 Presents trends and techniques for successful intelligent decision-making andtransfer of products through digital signal processing.

Reference Modeling for Business Systems Analysis Fettke, Peter 2006-10-31 "This book provides insights into state-of-the-art modeling languages and methods used for reference modeling. A reference model provides a blueprint for information systems development and analysis. Well-established reference models for industrial, retail and other industries are described"--Provided by publisher.

Pro LINQ Object Relational Mapping in C# 2008 Vijay P. Mehta 2008-09-02 This book aims to give experienced .NET developers a thorough grounding in Object Relational Mapping methodologies and show how LINQ can be used to achieve them. It provides detailed A-Z coverage of the key concepts and ideas in a clear, easy to follow, manner. The book is split into two parts. The first provides a detailed explanation of the key concepts and technologies, while the second brings them to life in a detailed fictional case study using an architecture that can be easily adapted to a wide range of reader's circumstances.

Applying Domain-Driven Design and Patterns Jimmy Nilsson 2006-05-08 Patterns, Domain-Driven Design (DDD), and Test-Driven Development (TDD) enable architects and developers to create systems that are powerful, robust, and maintainable. Now, there's a comprehensive, practical guide to leveraging all these techniques primarily in Microsoft .NET environments, but the discussions are just as useful for Java developers. Drawing on seminal work by Martin Fowler (Patterns of Enterprise Application Architecture) and Eric Evans (Domain-Driven Design), Jimmy Nilsson shows how to create real-world architectures for any .NET application. Nilsson illuminates each principle with clear, well-annotated code examples based on C# 1.1 and 2.0. His examples and

discussions will be valuable both to C# developers and those working with other .NET languages and any databases–even with other platforms, such as J2EE. Coverage includes · Quick primers on patterns, TDD, and refactoring · Using architectural techniques to improve software quality · Using domain models to support business rules and validation · Applying enterprise patterns to provide persistence support via NHibernate · Planning effectively for the presentation layer and UI testing · Designing for Dependency Injection, Aspect Orientation, and other new paradigms

Information and Software Technologies Audrius Lopata 2020-10-08 This book constitutes the refereed proceedings of the 26th International Conference on Information and Software Technologies, ICIST 2020, held in Kaunas, Lithuania, in October 2020. The 23 full papers and 7 short papers presented were carefully reviewed and selected from 78 submissions. The papers are organized in topical sections on business intelligence for information and software system; software engineering; information technology applications.

Patterns of Information Management Mandy Chessell 2013-05-02 Use Best Practice Patterns to Understand and Architect Manageable, Efficient Information Supply Chains That Help You Leverage All Your Data and Knowledge In the era of "Big Data," information pervades every aspect of the organization. Therefore, architecting and managing it is a multi-disciplinary task. Now, two pioneering IBM® architects present proven architecture patterns that fully reflect this reality. Using their pattern language, you can accurately characterize the information issues associated with your own systems, and design solutions that succeed over both the short- and long-term. Building on the analogy of a supply chain, Mandy Chessell and Harald C. Smith explain how information can be transformed, enriched, reconciled, redistributed, and utilized in even the most complex environments. Through a realistic, end-to-end case study, they help you blend overlapping information management, SOA, and BPM technologies that are often viewed as competitive. Using this book's patterns, you can integrate all levels of your architecture–from holistic, enterprise, system-level views down to low-level design elements. You can fully address key non-functional requirements such as the amount,

quality, and pace of incoming data. Above all, you can create an IT landscape that is coherent, interconnected, efficient, effective, and manageable. Coverage Includes Understanding how a pattern language can help you address key information management challenges Defining information strategy and governance for organizations and users Creating orderly information flows you can reuse and synchronize as needed Managing information structure, meaning, and lifecycles Providing for efficient information access and storage when deploying new IT capabilities Moving information efficiently and reliably to support your processes Determining how information should be processed and maintained Improving quality and accessibility, and supporting higher-value analytics Protecting information via validation, transformation, enrichment, correction, security, and monitoring Planning new information management projects in the context of your existing IT resources
Data Modeling Theory and Practice Graeme Simsion 2007-03-01 Data Modeling Theory and Practice is for practitioners and academics who have learned the conventions and rules of data modeling and are looking for a deeper understanding of the discipline. The coverage of theory includes a detailed review of the extensive literature on data modeling and logical database design, referencing nearly 500 publications, with a strong focus on their relevance to practice. The practice component incorporates the largest-ever study of data modeling practitioners, involving over 450 participants in interviews, surveys and data modeling tasks. The results challenge many long-held assumptions about data modeling and will be of interest to academics and practitioners alike. Graeme Simsion brings to the book the practical perspective and intellectual clarity that have made his Data Modeling Essentials a classic in the field. He begins with a question about the nature of data modeling (design or description), and uses it to illuminate such issues as the definition of data modeling, its philosophical underpinnings, inputs and deliverables, the necessary behaviors and skills, the role of creativity, product diversity, quality measures, personal styles, and the differences between experts and novices. Data Modeling Theory and Practice is essential reading for anyone involved in data modeling practice, research, or teaching.

Information Modelling and Knowledge Bases XXIII J. Henno 2012-01-18 Information modelling and knowledge bases have become hot topics, not only in academic communities concerned with information systems and computer science, but also wherever information technology is applied in the world of business. This book presents the proceedings of the 21st European-Japanese Conference on Information Modelling and Knowledge Bases (EJC 2011), held in Tallinn, Estonia, in June 2011. The EJC conferences provide a worldwide forum for researchers and practitioners in the field to exchange results and experiences achieved in computer science and related disciplines such as conceptual analysis, design and specification of information systems, multimedia information modelling, multimedia systems, software engineering, knowledge and process management, cross cultural communication and context modelling. Attention is also paid to theoretical disciplines including cognitive science, artificial intelligence, logic, linguistics and analytical philosophy. The selected papers (16 full papers, 9 short papers, 2 papers based on panel sessions and 2 on invited presentations), cover a wide range of topics, including database semantics, knowledge representation, software engineering, www information management, context-based information retrieval, ontology, image databases, temporal and spatial databases, document data management, process management, cultural modelling and many others. Covering many aspects of system modelling and optimization, this book will be of interest to all those working in the field of information modelling and knowledge bases.
Developing High Quality Data Models Matthew West 2011-02-07 Developing High Quality Data Models provides an introduction to the key principles of data modeling. It explains the purpose of data models in both developing an Enterprise Architecture and in supporting Information Quality; common problems in data model development; and how to develop high quality data models, in particular conceptual, integration, and enterprise data models. The book is organized into four parts. Part 1 provides an overview of data models and data modeling including the basics of data model notation; types and uses of data models; and the place of data models in enterprise architecture. Part 2 introduces some general principles for data models, including principles for developing ontologically based data models; and applications of the principles for attributes, relationship types, and entity types. Part 3 presents an ontological framework for developing consistent data models. Part 4 provides the full data model that has been in development throughout the book. The model was created using Jotne EPM Technologys EDMVisualExpress data modeling tool. This book was designed for all types of modelers: from those who understand data modeling basics but are just starting to learn about data modeling in practice, through to experienced data modelers seeking to expand their knowledge and skills and solve some of the more challenging problems of data modeling. Uses a number of common data model patterns to explain how to develop data models over a wide scope in a way that is consistent and of high quality Offers generic data model templates that are reusable in many applications and are fundamental for developing more specific templates Develops ideas for creating consistent approaches to high quality data models
Roadmap to Successful Digital Health Ecosystems Evelyn Hovenga 2022-02-25 Roadmap to Successful Digital Health Ecosystems: A Global Perspective presents evidence-based solutions found on adopting open platforms, standard information models, technology neutral data repositories, and computable clinical data and knowledge (ontologies, terminologies, content models, process models, and guidelines), resulting in improved patient, organizational, and global health outcomes. The book helps engaging countries and stakeholders take action and commit to a digital health strategy, create a global environment and processes that will facilitate and induce collaboration, develop processes for monitoring and evaluating national digital health strategies, and enable learnings to be shared in support of WHO's global strategy for digital health. The book explains different perspectives and local environments for digital health implementation, including data/information and technology governance, secondary data use, need for effective data interpretation, costly adverse events, models of care, HR management, workforce planning, system connectivity, data sharing and linking, small and big data, change

management, and future vision. All proposed solutions are based on real-world scientific, social, and political evidence. • Provides a roadmap, based on examples already in place, to develop and implement digital health systems on a large-scale that are easily reproducible in different environments • Addresses World Health Organization (WHO)-identified research gaps associated with the feasibility and effectiveness of various digital health interventions • Helps readers improve future decision-making within a digital environment by detailing insights into the complexities of the health system • Presents evidence from real-world case studies from multiple countries to discuss new skills that suit new paradigms

Engineering Asset Management Dimitris Kiritsis 2011-02-03 Engineering Asset Management discusses state-of-the-art trends and developments in the emerging field of engineering asset management as presented at the Fourth World Congress on Engineering Asset Management (WCEAM). It is an excellent reference for practitioners, researchers and students in the multidisciplinary field of asset management, covering such topics as asset condition monitoring and intelligent maintenance; asset data warehousing, data mining and fusion; asset performance and level-of-service models; design and life-cycle integrity of physical assets; deterioration and preservation models for assets; education and training in asset management; engineering standards in asset management; fault diagnosis and prognostics; financial analysis methods for physical assets; human dimensions in integrated asset management; information quality management; information systems and knowledge management; intelligent sensors and devices; maintenance strategies in asset management; optimisation decisions in asset management; risk management in asset management; strategic asset management; and sustainability in asset management.

Metadata for Information Management and Retrieval David Haynes 2018-01-09 This new and updated second edition of a classic text provides a thought provoking introduction to metadata for all library and information students and professionals. Metadata for Information Management and Retrieval has been fully revised to bring it up to date with new technologies and standards. It builds on the concept of metadata through an exploration of its purposes and uses as well as considering the main aspects of metadata management. This new edition, containing new chapters on 'Very Large Data Collections' and the 'Politics and Ethics of Metadata', assesses the current theory and practice of metadata and examines key developments in terms of both policy and technology. Coverage includes: defining, describing and expressing metadatadata modellingmetadata and information retrievalbig data, linked data, and social mediaresearch data collections and open data repositoriesmetadata in information governance: compliance, risk and information securitymanaging intellectual property rightsthe politics of metadata: ethics, power and money. This book is essential reading for library and information students at undergraduate and postgraduate level and will also be useful reading for LIS professionals looking for an accessible introduction to metadata.

Pattern-Oriented Software Architecture, A Pattern Language for Distributed Computing Frank Buschmann 2007-04-23 The eagerly awaited Pattern-Oriented Software Architecture (POSA) Volume 4 is about a pattern language for distributed computing. The authors will guide you through the best practices and introduce you to key areas of building distributed software systems. POSA 4 connects many stand-alone patterns, pattern collections and pattern languages from the existing body of literature found in the POSA series. Such patterns relate to and are useful for distributed computing to a single language. The panel of experts provides you with a consistent and coherent holistic view on the craft of building distributed systems. Includes a foreword by Martin Fowler A must read for practitioners who want practical advice to develop a comprehensive language integrating patterns from key literature.

Graph Data Modeling for NoSQL and SQL Thomas Frisendal 2016-09-09 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 raises important questions about the 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 their needs? Are Logical and Physical Data 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 approaches will we need? How will we use those to build 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 the psychology of meaning and context, while 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, and physical data models with examples on how to leverage those for implementing into any target database or datastore. These new notations are based on a property graph approach to modeling data.

Information Modeling and Relational Databases Terry Halpin 2010-07-27 Information Modeling and Relational Databases, Second Edition, provides an introduction to ORM (Object-Role Modeling)and much more. In fact, it is the only book to go beyond introductory coverage and provide all of the in-depth instruction you need to transform knowledge from domain experts into a sound database design. This book is intended for anyone with a stake in the accuracy and efficacy of databases: systems analysts, information modelers, database designers and administrators, and programmers. Terry Halpin, a pioneer in the development of ORM, blends conceptual information with practical instruction that will let you begin using ORM effectively as soon as possible. Supported by examples, exercises, and useful background information, his step-by-step approach teaches you to develop a natural-language-based ORM model, and then, where needed, abstract ER and UML models from it. This book will quickly make you proficient in the modeling technique that is proving vital to the development of accurate and efficient databases that best meet real business objectives. Presents the most indepth coverage of Object-Role Modeling available anywhere, including a thorough update of the book for ORM2, as well as UML2 and E-R (Entity-Relationship) modeling. Includes clear coverage of relational database concepts, and the latest developments in SQL and XML, including a new chapter on the impact of XML on information modeling, exchange and transformation. New and improved case studies and exercises are provided for many topics.

Spillover of Adsorbed Species: International Symposium Proceedings Gerard Meurant 2000-04-01 Spillover of Adsorbed Species: International Symposium Proceedings

Fowler Martin Fowler 2012-03-09 The practice of enterprise application development has benefited from the emergence of many new enabling technologies. Multi-tiered object-oriented platforms, such as Java and .NET, have become commonplace. These new tools and technologies are capable of building powerful applications, but they are not easily implemented. Common failures in enterprise applications often occur because their developers do not understand the architectural lessons that experienced object developers have learned. Patterns of Enterprise Application Architecture is written in direct response to the stiff challenges that face enterprise application developers. The author, noted object-oriented designer Martin Fowler, noticed that despite changes in technology--from Smalltalk to CORBA to Java to .NET--the same basic design ideas can be adapted and applied to solve common problems. With the help of an expert group of contributors, Martin distills over forty recurring solutions into patterns. The result is an indispensable handbook of solutions that are applicable to any enterprise application platform. This book is actually two books in one. The first section is a short tutorial on developing enterprise applications, which you can read from start to finish to understand the scope of the book's lessons. The next section, the bulk of the book, is a detailed reference to the patterns themselves. Each

pattern provides usage and implementation information, as well as detailed code examples in Java or C#. The entire book is also richly illustrated with UML diagrams to further explain the concepts. Armed with this book, you will have the knowledge necessary to make important architectural decisions about building an enterprise application and the proven patterns for use when building them. The topics covered include · Dividing an enterprise application into layers · The major approaches to organizing business logic · An in-depth treatment of mapping between objects and relational databases · Using Model-View-Controller to organize a Web presentation · Handling concurrency for data that spans multiple transactions · Designing distributed object interfaces

Encyclopedia of Software Engineering Three-Volume Set (Print) Phillip A. Laplante 2010-11-22 Software engineering requires specialized knowledge of a broad spectrum of topics, including the construction of software and the platforms, applications, and environments in which the software operates as well as an understanding of the people who build and use the software. Offering an authoritative perspective, the two volumes of the Encyclopedia of Software Engineering cover the entire multidisciplinary scope of this important field. More than 200 expert contributors and reviewers from industry and academia across 21 countries provide easy-to-read entries that cover software requirements, design, construction, testing, maintenance, configuration management, quality control, and software engineering management tools and methods. Editor Phillip A. Laplante uses the most universally recognized definition of the areas of relevance to software engineering, the Software Engineering Body of Knowledge (SWEBOK®), as a template for organizing the material. Also available in an electronic format, this encyclopedia supplies software engineering students, IT professionals, researchers, managers, and scholars with unrivaled coverage of the topics that encompass this ever-changing field. Also Available Online This Taylor & Francis encyclopedia is also available through online subscription, offering a variety of extra benefits for researchers, students, and librarians, including: Citation tracking and alerts Active reference linking Saved searches and marked lists HTML and PDF format options Contact Taylor

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Non-Invasive Data Governance Robert Seiner 2019-01-02 Non-Invasive Data Governance biedt u een complete set tools om een succesvol data-governance-programma op te zetten.

Digital Mapping Techniques '99 David R. Soller 1999
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
Navigeren door het labyrint: Een handleiding voor het beheer van data Laura Sebastian-Coleman 2020-09-16 Als u een organisatie leidt of als u met uw managers moet communiceren over datamanagement, dan is Navigeren door het Labyrint uw gids. Organisaties die waarde willen halen uit hun data moeten die data goed beheren. Maar voor de meeste leidinggevenden lijkt datamanagement obscuur, gecompliceerd, en zeer technisch. Je hebt geen tijd om alle details te leren of hypes te herkennen. Navigeren door het Labyrint helpt je verder, gebaseerd op de best practices van DAMA's Data Management Body of Knowledge (DMBOK2). Het legt de grondbeginselen uit en zegt waarom ze zo belangrijk zijn. Het vertelt u wat u moet weten om in uw organisatie vertrouwen in data op te bouwen en hoe u waarde uit data kan halen.
Agile Analytics Ken Collier 2012 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.

Future-Proof Software-Systems Frank J. Furrer 2019-09-25 This book focuses on software architecture and the value of architecture in the development of long-lived, mission-critical, trustworthy software-systems. The author introduces and demonstrates the powerful strategy of "Managed Evolution," along with the engineering best practice known as "Principle-based Architecting." The book examines in detail architecture principles for e.g., Business Value, Changeability, Resilience, and Dependability. The author argues that the software development community has a strong responsibility to produce and operate useful, dependable, and trustworthy software. Software should at the same time provide business value and guarantee many quality-of-service properties, including security, safety, performance, and integrity. As Dr. Furrer states, "Producing dependable software is a balancing act between investing in the implementation of business functionality and investing in the quality-of-service properties of the software-systems." The book presents extensive coverage of such concepts as: Principle-Based Architecting Managed Evolution Strategy The Future Principles for Business Value Legacy Software Modernization/Migration Architecture Principles for Changeability Architecture Principles for Resilience Architecture Principles for Dependability The text is supplemented with numerous figures, tables, examples and illustrative quotations. Future-Proof Software-Systems provides a set of good engineering practices, devised for integration into most software development processes dedicated to the creation of software-systems that incorporate Managed Evolution.

Django Design Patterns and Best Practices Arun Ravindran 2015-03-31 If you want to learn how best to utilize commonly found patterns and learn best practices in developing applications with Django, this is the book for you. This book, like Django itself, is accessible to amateur and professional developers alike and assumes little in the way of prior experience. Although written for Python 3, the majority of the code in this book works in Python 2 or can be easily translated.

Innovations in Information Systems Modeling: Methods and Best Practices Halpin, Terry 2009-03-31 Covers central topics in information systems modeling and architectures. Includes the latest developments in information systems modeling, methods, and best practices.

Business Metadata: Capturing Enterprise Knowledge W.H. Inmon 2010-07-28 Business Metadata: Capturing Enterprise Knowledge is the first book that helps businesses capture corporate (human) knowledge and unstructured data, and offer solutions for codifying it for use in IT and management. Written by Bill Inmon, one of the fathers of the data warehouse and well-known author, the book is filled with war stories, examples, and cases from current projects. It includes a complete metadata acquisition methodology and project plan to guide readers every step of the way, and sample unstructured metadata for use in self-testing and developing skills. This book is recommended for IT professionals, including those in consulting, working on systems that will deliver better knowledge management capability. This includes people in these positions: data architects, data analysts, SOA architects, metadata analysts, repository (metadata data warehouse) managers as well as vendors that have a metadata component as part of their systems or tools. First book that helps businesses capture corporate (human) knowledge and unstructured data, and offer solutions for codifying it for

use in IT and management Written by Bill Inmon, one of the fathers of the data warehouse and well-known author, and filled with war stories, examples, and cases from current projects Very practical, includes a complete metadata acquisition methodology and project plan to guide readers every step of the way Includes sample unstructured metadata for use in self-testing and developing skills

Django: Web Development with Python Samuel Dauzon 2016-08-31 From an idea to a prototype – a complete guide for web development with the Django framework About This Book Explore the best practices to develop applications of a superior quality with Django framework Unravel the common problems of web development in Django This course teaches you major Django functions and will help you improve your skills by developing models, forms, views, and templates Experience the challenges of working on an end-to-end social network project Who This Book Is For Web developers who want to use modern Python-based web frameworks like Django to build powerful web applications. The course is mostly self-contained and introduces web development with Python to a reader who is familiar with web development concepts and can help him become an expert in this trade. It's intended for all levels of web developers, both students and practitioners from novice to experts. What You Will Learn Use Django models to store information in the database and generate queries to access a database across models Quickly develop web pages to create, read, update, and delete data from the model using class-based views Generate very maintainable forms with Django Import data from local sources and external web services as well as exporting your data to third parties Deep dive into various aspects of Django from models and views to testing and deployment Familiarize yourself with the various nuances of web development such as browser attacks and databases In Detail Data science is hot right now, and the need for multitalented developers is greater than ever before. A basic grounding in building apps with a framework as minimalistic, powerful, and easy-to-learn as Django will be a useful skill to launch your career as an entrepreneur or web developer. Django is a web framework that was designed to strike a balance between rapid web development and high performance. This course will take you on a journey to become an efficient web developer thoroughly understanding the key concepts of Django framework. This learning path is divided into three modules. The course begins with basic concepts of the Django framework. The first module, Django Essentials, is like a practical guide, filled with many real-world examples to build highly effective Django web application. After getting familiar with core concepts of Django, it's time to practice your learning from the first module with the help of over 90 recipes available in this module. In the second module, Web Development with Django Cookbook, you'll learn varying complexities to help you create multilingual, responsive, and scalable websites with Django. By the end of this module, you will have a good understanding of the new features added to Django 1.8 and be an expert at web development processes.The next step is to discover the latest best practices and idioms in this rapidly evolving Django framework. This is what you'll be learning in our third module, Django Design Patterns and Best Practices. This module will teach you common design patterns to develop better Django code. By the end of the module, you will be able to leverage the Django framework to develop a fully functional web application with minimal effort. Style and approach This course includes all the resources that will help you jump into the web development field with Django and learn how to make scalable and robust web applications. The aim is to create a smooth learning path that will teach you how to get started with the powerful Django framework and perform various web development techniques in depth. Through this comprehensive course, you'll learn web development with Django from scratch to finish!