Managing The Data Life Cycle Using Azure Data Factory

Technological advances and the rise of collaborative, interdisciplinary approaches have changed the practice of research. The 21st century researcher not only faces the challenge of managing increasingly complex datasets, but also new data sharing requirements from funders and journals. Success in today's research enterprise requires an understanding of how to work effectively with data, yet most researchers have never had any formal training in data management. Libraries have begun developing services and programs to help researchers meet the demands of the data-driven research enterprise, giving librarians exciting new opportunities to use their expertise and skills. The Medical Library Association Guide to Data Management for Librarians highlights the many ways that librarians are addressing researchers' changing needs at a variety of institutions, including academic, hospital, and government libraries. Each chapter ends with "pearls of wisdom," a bulleted list of 5-10 takeaway messages from the chapter that will help readers quickly put the ideas from the chapter into practice. From theoretical foundations to practical applications, this book provides a background for librarians who are new to data management as well as new ideas and approaches for experienced data librarians.

This report assesses the configuration-management and performance-verification options for the development and regulation of commercially available Explosive Detection Systems (EDS) and other systems designed for detection of explosives. In particular, the panel authoring this

report (1) assessed the advantages and disadvantages of methods used for configuration management and performance verification relative to the FAA's needs for explosives-detection equipment regulation, (2) outlined a "quality management program" that the FAA can follow that includes configuration management and performance verification and that will encourage commercial development and improvement of explosives-detection equipment while ensuring that such systems are manufactured to meet FAA certification requirements, and (3) outlined a performance-verification strategy that the FAA can follow to ensure that EDSs continue to perform at certification specifications in the airport environment.

How to plan your future strategy for efficient, cost-saving data management Businesses have historically treated data protection as an afterthought, as simply making an occasional copy of data that could be used in the future. Today, this attitude is changing rapidly. The ever-increasing amount of data, along with the emphasis on continuous availability, necessitates changes in the approach to data integrity, which results in management and protection becoming much more closely aligned. Digital Data Integrity throws light on the data integrity landscape of the future. It provides the reader with a brief overview of the historical methods and subsequent evolution of data protection. The text shows how the whole subject of data integrity is changing and describes and positions many of the new, enhanced, more intelligent protection technologies and methods. Digital Data Integrity: Takes a unique, forward look at data protection and management, highlighting the paradigm shift from simple backup and recovery to total data management. Details recent developments in compliance regulations in an accessible manner. Covers enhanced protection technologies such as advanced intelligent synthetic backups, data reduction methods, and data growth – online protection using

continuous data protection. Explains data life cycle management and data storage, using management, quality of service products and tools to achieve better data management, intelligent allocation of storage, and compliance with regulations. Contains information on quality control, looking at SLA (Service Level Agreements), protection by business unit and billing/charge back. Unique insight into hot topics such as next generation bare metal recovery and true system provisioning. This invaluable text will provide system administrators, and database administrators, as well as senior IT managers and decision makers with a thorough understanding of data management and protection. With contributions from Ray Schafer and Paul Mayer.

The data management system is one of the most important and viral Trends which has captured the market worldwide. The data management system is not Limited to just a few domains, but it is also being used in many other different sectors and areas such as information technology, Hospitality Services, schools and colleges and other institutions along with many private and government sectors. The data management system provides the accessibility of data within a computer system where there is no requirement of keeping the track of data in Big registers instead the data is stored in computer systems. The data which is stored in the system can be accessed, updated, replicated, duplicated and can be deleted by the user or administrator of that system. Is no doubt that the data management system has made the life very easy and with the help of this wonderful system the access to information has become easier.

Preserve the performance of your SAP HANA system with data tiering and data aging. --

A comprehensive guide to everything scientists need to know about data management, this

book is essential for researchers who need to learn how to organize, document and take care of their own data. Researchers in all disciplines are faced with the challenge of managing the growing amounts of digital data that are the foundation of their research. Kristin Briney offers practical advice and clearly explains policies and principles, in an accessible and in-depth text that will allow researchers to understand and achieve the goal of better research data management. Data Management for Researchers includes sections on: * The data problem – an introduction to the growing importance and challenges of using digital data in research. Covers both the inherent problems with managing digital information, as well as how the research landscape is changing to give more value to research datasets and code. * The data lifecycle – a framework for data's place within the research process and how data's role is changing. Greater emphasis on data sharing and data reuse will not only change the way we conduct research but also how we manage research data. * Planning for data management – covers the many aspects of data management and how to put them together in a data management plan. This section also includes sample data management plans. * Documenting your data – an often overlooked part of the data management process, but one that is critical to good management; data without documentation are frequently unusable. * Organizing your data – explains how to keep your data in order using organizational systems and file naming conventions. This section also covers using a database to organize and analyze content. * Improving data analysis – covers managing information through the analysis process. This section starts by comparing the management of raw and analyzed data and then describes ways to make analysis easier, such as spreadsheet best practices. It also examines practices for research code, including version control systems. * Managing secure and private data –

many researchers are dealing with data that require extra security. This section outlines what data falls into this category and some of the policies that apply, before addressing the best practices for keeping data secure. * Short-term storage – deals with the practical matters of storage and backup and covers the many options available. This section also goes through the best practices to insure that data are not lost. * Preserving and archiving your data – digital data can have a long life if properly cared for. This section covers managing data in the long term including choosing good file formats and media, as well as determining who will manage the data after the end of the project. * Sharing/publishing your data – addresses how to make data sharing across research groups easier, as well as how and why to publicly share data. This section covers intellectual property and licenses for datasets, before ending with the altmetrics that measure the impact of publicly shared data. * Reusing data – as more data are shared, it becomes possible to use outside data in your research. This chapter discusses strategies for finding datasets and lays out how to cite data once you have found it. This book is designed for active scientific researchers but it is useful for anyone who wants to get more from their data: academics, educators, professionals or anyone who teaches data management, sharing and preservation. "An excellent practical treatise on the art and practice of data management, this book is essential to any researcher, regardless of subject or discipline." —Robert Buntrock, Chemical Information Bulletin

Science is built on trust. The assumption is that scientists will conduct their work with integrity, honesty, and a strict adherence to scientific protocols. Written by geoscientists for geoscientists, Scientific Integrity and Ethics in the Geosciences acquaints readers with the fundamental principles of scientific ethics and shows how they apply to everyday work in the

classroom, laboratory, and field. Resources are provided throughout to help discuss and implement principles of scientific integrity and ethics. Volume highlights include: Examples of international and national codes and policies Exploration of the role of professional societies in scientific integrity and ethics References to scientific integrity and ethics in publications and research data Discussion of science integrity, ethics, and geoethics in education Extensive coverage of data applications Scientific Integrity and Ethics in the Geosciences is a valuable resource for students, faculty, instructors, and scientists in the geosciences and beyond. It is also useful for geoscientists working in industry, government, and policymaking. Read an interview with the editors to find out more: https://eos.org/editors-vox/ethics-crucial-for-the-future-of-the-geosciences

The Global Financial Crisis and the Eurozone crisis that has followed have drawn attention to weaknesses in financial records, information and data. These weaknesses have led to operational risks in financial institutions, flawed bankruptcy and foreclosure proceedings following the Crisis, and inadequacies in financial supervisors' access to records and information for the purposes of a prudential response. Research is needed to identify the practices that will provide the records, information and data needed to support more effective financial analysis and risk management. The unique contribution of this volume is in bringing together researchers in distinct domains that seldom interact to identify theoretical, technological, policy and practical issues related to the management of financial records, information and data. The book will, therefore, appeal to researchers or advanced practitioners in the field of finance and those with an interest in risk management, computer science, cognitive science, sociology, management information systems, information science, and

archival science as applied to the financial domain.

An integrated, strategic approach to higher-value analytics Leaders and Innovators: How Data-Driven Organizations Are Winning with Analytics shows how businesses leverage enterprise analytics to gain strategic insights for profitability and growth. The key factor is integrated, end-to-end capabilities that encompass data management and analytics from a business and IT perspective; with analytics running inside a database where the data reside, everyday analytical processes become streamlined and more efficient. This book shows you what analytics is, what it can do, and how you can integrate old and new technologies to get more out of your data. Case studies and examples illustrate real-world scenarios in which an optimized analytics system revolutionized an organization's business. Using in-database and in-memory analytics along with Hadoop, you'll be equipped to improve performance while reducing processing time from days or weeks to hours or minutes. This more strategic approach uncovers the opportunities hidden in your data, and the detailed guidance to optimal data management allows you to break through even the biggest data challenges. With data coming in from every angle in a constant stream, there has never been a greater need for proactive and agile strategies to overcome these struggles in a volatile and competitive economy. This book provides clear guidance and an integrated strategy for organizations seeking greater value from their data and becoming leaders and innovators in the industry. Streamline analytics processes and daily tasks Integrate traditional tools with new and modern technologies Evolve from tactical to strategic behavior Explore new analytics methods and applications The depth and breadth of analytics capabilities, technologies, and potential makes it a bottomless well of insight. But too many organizations falter at implementation—too much,

not enough, or the right amount in the wrong way all fail to deliver what an optimized and integrated system could. Leaders and Innovators: How Data-Driven Organizations Are Winning with Analytics shows you how to create the system your organization needs to dramatically improve performance, increase profitability, and drive innovation at all levels for the present and future.

As technological and legal changes have hollowed out the protections that reporters and news organizations have depended upon for decades, information security concerns facing journalists as they report, produce, and disseminate the news have only intensified. From source prosecutions to physical attacks and online harassment, the last two decades have seen a dramatic increase in the risks faced by journalists at all levels even as the media industry confronts drastic cutbacks in budgets and staff. As a result, few professional or aspiring journalists have a comprehensive understanding of what is required to keep their sources, stories, colleagues, and reputations safe. This book is an essential guide to protecting news writers, sources, and organizations in the digital era. Susan E. McGregor provides a systematic understanding of the key technical, legal, and conceptual issues that anyone teaching, studying, or practicing journalism should know. Bringing together expert insights from both leading academics and security professionals who work at and with news organizations from BuzzFeed to the Associated Press, she lays out key principles and approaches for building information security into journalistic practice. McGregor draws on firsthand experience as a Wall Street Journal staffer, followed by a decade of researching, testing, and developing information security tools and practices. Filled with practical but evergreen advice that can enhance the security and efficacy of everything from daily beat reporting to long-term

investigative projects, Information Security Essentials is a vital tool for journalists at all levels. Data Warehousing in the Age of the Big Data will help you and your organization make the most of unstructured data with your existing data warehouse. As Big Data continues to revolutionize how we use data, it doesn't have to create more confusion. Expert author Krish Krishnan helps you make sense of how Big Data fits into the world of data warehousing in clear and concise detail. The book is presented in three distinct parts. Part 1 discusses Big Data, its technologies and use cases from early adopters. Part 2 addresses data warehousing, its shortcomings, and new architecture options, workloads, and integration techniques for Big Data and the data warehouse. Part 3 deals with data governance, data visualization, information life-cycle management, data scientists, and implementing a Big Data–ready data warehouse. Extensive appendixes include case studies from vendor implementations and a special segment on how we can build a healthcare information factory. Ultimately, this book will help you navigate through the complex layers of Big Data and data warehousing while providing you information on how to effectively think about using all these technologies and the architectures to design the next-generation data warehouse. Learn how to leverage Big Data by effectively integrating it into your data warehouse. Includes real-world examples and use cases that clearly demonstrate Hadoop, NoSQL, HBASE, Hive, and other Big Data technologies Understand how to optimize and tune your current data warehouse infrastructure and integrate newer infrastructure matching data processing workloads and requirements This block is concerned with the database lifecycle, which describes the stages a database goes through, from the time the need for a database is established until it is withdrawn from use. This block applies the practice developed in Block 3 to systematically develop, implement

and maintain a database design that supports the information requirements of an enterprise. It presents a simple framework for database development and maintenance.This is a very practical block and will require you to write and execute SQL statements for which you will need access to a computer installed with the course software (order code M359/CDR01) and database cards Scenarios and Hospital conceptual data model (order code M359/DBCARDS) Understand data science concepts and methodologies to manage and deliver top-notch solutions for your organization Key Features Learn the basics of data science and explore its possibilities and limitations Manage data science projects and assemble teams effectively even in the most challenging situations Understand management principles and approaches for data science projects to streamline the innovation process Book Description Data science and machine learning can transform any organization and unlock new opportunities. However, employing the right management strategies is crucial to guide the solution from prototype to production. Traditional approaches often fail as they don't entirely meet the conditions and requirements necessary for current data science projects. In this book, you'll explore the right approach to data science project management, along with useful tips and best practices to guide you along the way. After understanding the practical applications of data science and artificial intelligence, you'll see how to incorporate them into your solutions. Next, you will go through the data science project life cycle, explore the common pitfalls encountered at each step, and learn how to avoid them. Any data science project requires a skilled team, and this book will offer the right advice for hiring and growing a data science team for your organization. Later, you'll be shown how to efficiently manage and improve your data science projects through the use of DevOps and ModelOps. By the end of this book, you will be well versed with

various data science solutions and have gained practical insights into tackling the different challenges that you'll encounter on a daily basis. What you will learn Understand the underlying problems of building a strong data science pipeline Explore the different tools for building and deploying data science solutions Hire, grow, and sustain a data science team Manage data science projects through all stages, from prototype to production Learn how to use ModelOps to improve your data science pipelines Get up to speed with the model testing techniques used in both development and production stages Who this book is for This book is for data scientists, analysts, and program managers who want to use data science for business productivity by incorporating data science workflows efficiently. Some understanding of basic data science concepts will be useful to get the most out of this book.

Build a custom BimlExpress framework that generates dozens of SQL Server Integration Services (SSIS) packages in minutes. Use this framework to execute related SSIS packages in a single command. You will learn to configure SSIS catalog projects, manage catalog deployments, and monitor SSIS catalog execution and history. Data Integration Life Cycle Management with SSIS shows you how to bring DevOps benefits to SSIS integration projects. Practices in this book enable faster time to market, higher quality of code, and repeatable automation. Code will be created that is easier to support and maintain. The book teaches you how to more effectively manage SSIS in the enterprise environment by drawing on the art and science of modern DevOps practices. What You'll Learn Generate dozens of SSIS packages in minutes to speed your integration projects Reduce the execution of related groups of SSIS packages to a single command Successfully handle SSIS catalog deployments and their projects Monitor the execution and history of SSIS catalog projects Manage your enterprise

data integration life cycle through automated tools and utilities Who This Book Is For Database professionals working with SQL Server Integration Services in enterprise environments. The book is especially useful to those readers following, or wishing to follow, DevOps practices in their use of SSIS.

Businesses now rely almost entirely on applications and databases, causing data and storage needs to increase at astounding rates. It is therefore imperative for a company to optimize and simplify the complexity of managing its data resources. Plenty of storage products are now available, however the challenge remains for companies to proactively manage their storage assets and align the resources to the various departments, divisions, geographical locations and business processes to achieve improved efficiency and profitability. Data Lifecycles identifies ways to incorporate an intelligent service platform to manage and map the storage of data. The authors give an overview of the latest trends and technologies in storage networking and cover critical issues such as world-wide compliance. Data Lifecycles: Provides a single-source guide to data and storage methodologies, processes, technologies and compliance issues. Addresses the need of an encompassing intelligent data and storage management platform for modern businesses. Gives an overview of the latest data technologies and concepts such as utility computing and information lifecycle management. Clearly defines and describes lifecycle management and strategies to ensure growth of critical business data. Shows how to dramatically reduce the total cost of storage ownership and provide rapid return on investment. Enables customers to make decisions directed toward the purchase of storage tools and storage management solutions. This text is an ideal introduction to modern data lifecycle management for network managers, system administrators, storage/system

architects, network managers, information management directors as well as CIO/CTOs and their teams, senior IT managers and decision makers, and database administrators.
Building on their 1995 groundbreaking book on electronic records retention, David Stephens and Roderick Wallace have authored a comprehensive new book that defines a practical methodology for applying the principles of records retention to computer-based recordkeeping environments. The book also addresses the implications of the international records management standard, the first-ever global standard on records management, which endorsed the concept of records retention as a best practice for managing the life cycle of information (ISO 15489-1); the U.S. Department of Defense standard prescribing requirements pertaining to records management software applications (DoD 5015.2-STD,); and the U.S. Internal Revenue Services-issued Revenue Procedure 98-25, which imposes certain long-term data retention requirements on corporate taxpayers.
"This is a great book! I have to admit I wasn't enthusiastic about the idea of a book with such a narrow topic initially, but, frankly, it's the first professional book I've read page to page in one sitting in a long time. It should be of interest to DBAs, data architects and modelers, programmers who have to write database programs, and yes, even managers. This book is a winner." - Karen Watterson, Editor SQL Server Professional "Malcolm Chisholm has produced a very readable book. It is well-written and with excellent examples. It will, I am sure, become the Reference Book on Reference Data." - Clive Finkelstein, "Father" of Information Engineering, Managing Director, Information Engineering Services Pty Ltd Reference data plays a key role in your business

databases and must be free from defects of any kind. So why is it so hard to find information on this critical topic? Recognizing the dangers of taking reference data for granted, Managing Reference Data in Enterprise Databases gives you precisely what you've been seeking: A complete guide to the implementation and management of reference data of all kinds. This book begins with a thorough definition of reference data, then proceeds with a detailed examination of all reference data issues, fully describing uses, common difficulties, and practical solutions. Whether you're a database manager, architect, administrator, programmer, or analyst, be sure to keep this easy-to-use reference close at hand. Features Solves special challenges associated with maintaining reference data. Addresses a wide range of reference data issues, including acronyms, redundancy, mapping, life cycles, multiple languages, and querying. Describes how reference data interacts with other system components, what problems can arise, and how to mitigate these problems. Offers examples of standard reference data types and matrices for evaluating management methods. Provides a number of standard reference data tables and more specialized material to help you deal with reference data, via a companion Web site

As data management and integration continue to evolve rapidly, storing all your data in one place, such as a data warehouse, is no longer scalable. In the very near future, data will need to be distributed and available for several technological solutions. With this practical book, you'll learnhow to migrate your enterprise from a complex and

tightly coupled data landscape to a more flexible architecture ready for the modern world of data consumption. Executives, data architects, analytics teams, and compliance and governance staff will learn how to build a modern scalable data landscape using the Scaled Architecture, which you can introduce incrementally without a large upfront investment. Author Piethein Strengholt provides blueprints, principles, observations, best practices, and patterns to get you up to speed. Examine data management trends, including technological developments, regulatory requirements, and privacy concerns Go deep into the Scaled Architecture and learn how the pieces fit together Explore data governance and data security, master data management, self-service data marketplaces, and the importance of metadata

This book provides insight into the Life Cycle Management (LCM) concept and the progress in its implementation. LCM is a management concept applied in industrial and service sectors to improve products and services, while enhancing the overall sustainability performance of business and its value chains. In this regard, LCM is an opportunity to differentiate through sustainability performance on the market place, working with all departments of a company such as research and development, procurement and marketing, and to enhance the collaboration with stakeholders along a company’s value chain. LCM is used beyond short-term business success and aims at long-term achievements by minimizing environmental and socio-economic burden, while maximizing economic and social value.

Data-governance programs focus on authority and accountability for the management of data as a valued organizational asset. Data Governance should not be about command-and-control, yet at times could become invasive or threatening to the work, people and culture of an organization. Non-Invasive Data Governance™ focuses on formalizing existing accountability for the management of data and improving formal communications, protection, and quality efforts through effective stewarding of data resources. Non-Invasive Data Governance will provide you with a complete set of tools to help you deliver a successful data governance program. Learn how: • Steward responsibilities can be identified and recognized, formalized, and engaged according to their existing responsibility rather than being assigned or handed to people as more work. • Governance of information can be applied to existing policies, standard operating procedures, practices, and methodologies, rather than being introduced or emphasized as new processes or methods. • Governance of information can support all data integration, risk management, business intelligence and master data management activities rather than imposing inconsistent rigor to these initiatives. • A practical and non-threatening approach can be applied to governing information and promoting stewardship of data as a cross-organization asset. • Best practices and key concepts of this non-threatening approach can be communicated effectively to leverage strengths and address opportunities to improve.

Executing Data Quality Projects, Second Edition presents a structured yet flexible

approach for creating, improving, sustaining and managing the quality of data and information within any organization. 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. Help is here! This book describes a proven Ten Step approach that combines a conceptual framework for understanding information quality with techniques, tools, and instructions for practically putting the approach to work – with the end result of high-quality trusted data and information, so critical to today's data-dependent organizations. The Ten Steps approach applies to all types of data and all types of organizations – for-profit in any industry, non-profit, government, education, healthcare, science, research, and medicine. This book includes numerous templates, detailed examples, and practical advice for executing every step. At the same time, readers are advised on how to select relevant steps and apply them in different ways to best address the many situations they will face. The layout allows for quick reference with an easy-to-use format highlighting key concepts and definitions, important checkpoints, communication activities, best practices, and warnings. The experience of actual clients and users of the Ten Steps provide real examples of outputs for the steps plus highlighted, sidebar case studies called Ten Steps in Action. This book uses projects as the vehicle for data quality work and the word broadly to include: 1) focused data quality improvement projects, such as improving data used in supply chain

management, 2) data quality activities in other projects such as building new applications and migrating data from legacy systems, integrating data because of mergers and acquisitions, or untangling data due to organizational breakups, and 3) ad hoc use of data quality steps, techniques, or activities in the course of daily work. The Ten Steps approach can also be used to enrich an organization's standard SDLC (whether sequential or Agile) and it complements general improvement methodologies such as six sigma or lean. No two data quality projects are the same but the flexible nature of the Ten Steps means the methodology can be applied to all. The new Second Edition highlights topics such as artificial intelligence and machine learning, Internet of Things, security and privacy, analytics, legal and regulatory requirements, data science, big data, data lakes, and cloud computing, among others, to show their dependence on data and information and why data quality is more relevant and critical now than ever before. Includes concrete instructions, numerous templates, and practical advice for executing every step of The Ten Steps approach Contains real examples from around the world, gleaned from the author's consulting practice and from those who implemented based on her training courses and the earlier edition of the book 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 templates featured in the text, quick summaries of key ideas from the Ten Steps methodology,

and other tools and information that are available online

Guiding chromatographers working in regulated industries and helping them to validate their chromatography data systems to meet data integrity, business and regulatory needs. This book is a detailed look at the life cycle and documented evidence required to ensure a system is fit for purpose throughout the lifecycle. Initially providing the regulatory, data integrity and system life cycle requirements for computerised system validation, the book then develops into a guide on planning, specifying, managing risk, configuring and testing a chromatography data system before release. This is followed by operational aspects such as training, integration and IT support and finally retirement. All areas are discussed in detail with case studies and practical examples provided as appropriate. The book has been carefully written and is right up to date including recently released FDA data integrity guidance. It provides detailed guidance on good practice and expands on the first edition making it an invaluable addition to a chromatographer's book shelf.

It has become increasingly accepted that important digital data must be retained and shared in order to preserve and promote knowledge, advance research in and across all disciplines of scholarly endeavor, and maximize the return on investment of public funds. To meet this challenge, colleges and universities are adding data services to existing infrastructures by drawing on the expertise of information professionals who are already involved in the acquisition, management and preservation of data in their

daily jobs. Data services include planning and implementing good data management practices, thereby increasing researchers' ability to compete for grant funding and ensuring that data collections with continuing value are preserved for reuse. This volume provides a framework to guide information professionals in academic libraries, presses, and data centers through the process of managing research data from the planning stages through the life of a grant project and beyond. It illustrates principles of good practice with use-case examples and illuminates promising data service models through case studies of innovative, successful projects and collaborations. Contributors include: James L. Mullins, Purdue University; MacKenzie Smith, University of California at Davis; Sherry Lake, University of Virginia; John Kunze, University of California; Bernard Reilly, Center for Research Libraries; Jacob Carlson, Purdue University; Melissa Levine, University of Michigan; Jenn Riley, University of North Carolina at Chapel Hill; Jan Brase, German National Library of Science and Technology; Seamus Ross, University of Toronto; Sarah Shreeves, University of Illinois at Urbana-Champaign; Jared Lyle, University of Michigan; Michele Kimpton, DuraSpace; Brian Schottlaender, University of California San Diego; Suzie Allard, University of Tennessee; Angus Whyte, Digital Curation Centre; Scott Brandt, Purdue University; Brian Westra, University of Oregon; Geneva Henry, Rice University; Gail Steinhart, Cornell University; and Cliff Lynch, Coalition for Networked Information. Charleston Insights in Library, Information, and Archival Sciences is a new series produced as a

collaboration between the organizers of the Charleston Library Conference and Purdue University Press. Volumes in the series focus on important topics in library and information science, presenting the issues in a relatively jargon-free way that is accessible to all types of information professionals.

This book contains the description of machines and systems as investments goods in production. These machines have a technological and economical life cycle over the time used. By explaining the paradigms of life cycle management, the book describes how the life cycle of such investment goods can be designed, operated and optimized to deliver maximum benefit in industrial environment. Additional examples from industry including case studies and calculations demonstrate practical applications and deliver benefit not only for academic or educational purpose but also for industrial practitioners.

Life Cycle Inventory (LCI) Analysis is the second phase in the Life Cycle Assessment (LCA) framework. Since the first attempts to formalize life cycle assessment in the early 1970, life cycle inventory analysis has been a central part. Chapter 1, Introduction to Life Cycle Inventory Analysis, discusses the history of inventory analysis from the 1970s through SETAC and the ISO standard. In Chapter 2, Principles of Life Cycle Inventory Modeling, the general principles of setting up an LCI model and LCI analysis are described by introducing the core LCI model and extensions that allow addressing reality better. Chapter 3, Development of Unit Process Datasets, shows that developing unit processes of high quality and transparency is not a trivial task, but is crucial for high-quality LCA studies. Chapter 4, Multi-functionality in Life Cycle Inventory Analysis: Approaches and Solutions, describes how multi-functional processes can

be identified. In Chapter 5, Data Quality in Life Cycle Inventories, the quality of data gathered and used in LCI analysis is discussed. State-of-the-art indicators to assess data quality in LCA are described and the fitness for purpose concept is introduced. Chapter 6, Life Cycle Inventory Data and Databases, follows up on the topic of LCI data and provides a state-of-the-art description of LCI databases. It describes differences between foreground and background data, recommendations for starting a database, data exchange and quality assurance concepts for databases, as well as the scientific basis of LCI databases. Chapter 7, Algorithms of Life Cycle Inventory Analysis, provides the mathematical models underpinning the LCI. Since Heijungs and Suh (2002), this is the first time that this aspect of LCA has been fundamentally presented. In Chapter 8, Inventory Indicators in Life Cycle Assessment, the use of LCI data to create aggregated environmental and resource indicators is described. Such indicators include the cumulative energy demand and various water use indicators. Chapter 9, The Link Between Life Cycle Inventory Analysis and Life Cycle Impact Assessment, uses four examples to discuss the link between LCI analysis and LCIA. A clear and relevant link between these phases is crucial.

Managing Data in Motion describes techniques that have been developed for significantly reducing the complexity of managing system interfaces and enabling scalable architectures. Author April Reeve brings over two decades of experience to present a vendor-neutral approach to moving data between computing environments and systems. Readers will learn the techniques, technologies, and best practices for managing the passage of data between computer systems and integrating disparate data together in an enterprise environment. The average enterprise's computing environment is comprised of hundreds to thousands computer

systems that have been built, purchased, and acquired over time. The data from these various systems needs to be integrated for reporting and analysis, shared for business transaction processing, and converted from one format to another when old systems are replaced and new systems are acquired. The management of the "data in motion" in organizations is rapidly becoming one of the biggest concerns for business and IT management. Data warehousing and conversion, real-time data integration, and cloud and "big data" applications are just a few of the challenges facing organizations and businesses today. Managing Data in Motion tackles these and other topics in a style easily understood by business and IT managers as well as programmers and architects. Presents a vendor-neutral overview of the different technologies and techniques for moving data between computer systems including the emerging solutions for unstructured as well as structured data types Explains, in non-technical terms, the architecture and components required to perform data integration Describes how to reduce the complexity of managing system interfaces and enable a scalable data architecture that can handle the dimensions of "Big Data"

Product Lifecycle Management (2nd edition) explains what Product Lifecycle Management (PLM) is, and why it's needed. It describes the environment in which products are developed, realised and supported, before looking at the basic components of PLM, such as the product, processes, applications, and people. The final part addresses the implementation of PLM, showing the steps of a project or initiative, and typical activities. This new and expanded edition of Product Lifecycle Management is fully updated to reflect the many advances made in PLM since the release of the first edition. It includes descriptions of PLM technologies and examples of implementation projects in industry. Product Lifecycle Management will broaden

the reader's understanding of PLM, nurturing the skills needed to implement PLM successfully and to achieve world-class product performance across the lifecycle. "A 20-year veteran of PLM, I highly recommend this book. A clear and complete overview of PLM from definition to implementation. Everything is there - reasons, resources, strategy, implementation and PLM project management." Achim Heilmann, Manager, Global Technical Publications, Varian Medical Systems "Product Lifecycle Management is an important technology for European industry. This state-of-the art book is a reference for those implementing and researching PLM." Dr. Erastos Filos, Head of Sector "Intelligent Manufacturing Systems", European Commission "This book, written by one of the best experts in this field, is an ideal complement for PLM courses at Bachelor and Master level, as well as a well-founded reference book for practitioners." Prof. Dr.-Ing. Dr. h.c. Sandor Vajna, University of Magdeburg, Germany "This comprehensive book can help drive an understanding of PLM at all levels – from CEOs to CIOs, and from professors to students – that will help this important industry continue to expand and thrive." James Heppelmann, President and Chief Executive Officer, PTC "PLM is a mission-critical decision-making system leveraged by the world's most innovative companies to transform their process of innovation on a continuous basis. That is a powerful value proposition in a world where the challenge is to get better products to the market faster than ever before. That is the power of PLM." Tony Affuso, Chairman and CEO, Siemens PLM Software

Entity Information Life Cycle for Big Data walks you through the ins and outs of managing entity information so you can successfully achieve master data management (MDM) in the era of big data. This book explains big data's impact on MDM and the critical role of entity

information management system (EIMS) in successful MDM. Expert authors Dr. John R. Talburt and Dr. Yinle Zhou provide a thorough background in the principles of managing the entity information life cycle and provide practical tips and techniques for implementing an EIMS, strategies for exploiting distributed processing to handle big data for EIMS, and examples from real applications. Additional material on the theory of EIIM and methods for assessing and evaluating EIMS performance also make this book appropriate for use as a textbook in courses on entity and identity management, data management, customer relationship management (CRM), and related topics. Explains the business value and impact of entity information management system (EIMS) and directly addresses the problem of EIMS design and operation, a critical issue organizations face when implementing MDM systems Offers practical guidance to help you design and build an EIM system that will successfully handle big data Details how to measure and evaluate entity integrity in MDM systems and explains the principles and processes that comprise EIM Provides an understanding of features and functions an EIM system should have that will assist in evaluating commercial EIM systems Includes chapter review questions, exercises, tips, and free downloads of demonstrations that use the OYSTER open source EIM system Executable code (Java .jar files), control scripts, and synthetic input data illustrate various aspects of CSRUD life cycle such as identity capture, identity update, and assertions

Product Lifecycle Management (PLM) is an essential means to cope with the challenges of global competition. This is the first English-language book on PLM that introduces the reader to the basic terms and fundamentals of PLM. The text provides a solid foundation for starting a PLM development project. It gives ideas and examples of how PLM can be utilized. In addition,

it offers insight into how PLM can assist in creating opportunities and in making real eBusiness possible.

Biomedical research results in the collection and storage of increasingly large and complex data sets. Preserving those data so that they are discoverable, accessible, and interpretable accelerates scientific discovery and improves health outcomes, but requires that researchers, data curators, and data archivists consider the long-term disposition of data and the costs of preserving, archiving, and promoting access to them. Life Cycle Decisions for Biomedical Data examines and assesses approaches and considerations for forecasting costs for preserving, archiving, and promoting access to biomedical research data. This report provides a comprehensive conceptual framework for cost-effective decision making that encourages data accessibility and reuse for researchers, data managers, data archivists, data scientists, and institutions that support platforms that enable biomedical research data preservation, discoverability, and use.

Research Data Management and Data Literacies help researchers familiarize themselves with RDM, and with the services increasingly offered by libraries. This new volume looks at data-intensive science, or ‘Science 2.0’ as it is sometimes termed in commentary, from a number of perspectives, including the tasks academic libraries need to fulfil, new services that will come online in the near future, data literacy and its relation to other literacies, research support and the need to connect researchers across the academy, and other key issues, such as ‘data deluge,’ the importance of citations, metadata and data repositories. This book presents a solid resource that contextualizes RDM, including good theory and practice for researchers and professionals who find themselves tasked with managing research data. Gives guidance

on organizing, storing, preserving and sharing research data using Research Data Management (RDM) Contextualizes RDM within the global shift to data-intensive research Helps researchers and information professionals understand and optimize data-intensive ways of working Considers RDM in relation to varying needs of researchers across the sciences and humanities Presents key issues surrounding RDM, including data literacy, citations, metadata and data repositories

Written by prominent thought leaders in the global fintech space, The AI Book aggregates diverse expertise into a single, informative volume and explains what artifical intelligence really means and how it can be used across financial services today. Key industry developments are explained in detail, and critical insights from cutting-edge practitioners offer first-hand information and lessons learned. Coverage includes: · Understanding the AI Portfolio: from machine learning to chatbots, to natural language processing (NLP); a deep dive into the Machine Intelligence Landscape; essentials on core technologies, rethinking enterprise, rethinking industries, rethinking humans; quantum computing and next-generation AI · AI experimentation and embedded usage, and the change in business model, value proposition, organisation, customer and co-worker experiences in today's Financial Services Industry · The future state of financial services and capital markets – what's next for the real-world implementation of AITech? · The innovating customer – users are not waiting for the financial services industry to work out how AI can re-shape their sector, profitability and competitiveness · Boardroom issues created and magnified by AI trends, including conduct, regulation & oversight in an algo-driven world, cybersecurity, diversity & inclusion, data privacy, the 'unbundled corporation' & the future of work, social responsibility, sustainability, and the new

leadership imperatives · Ethical considerations of deploying AI solutions and why explainable AI is so important

As you move data to the cloud, you need to consider a comprehensive approach to data governance, along with well-defined and agreed-upon policies to ensure your organization meets compliance requirements. Data governance incorporates the ways people, processes, and technology work together to ensure data is trustworthy and can be used effectively. This practical guide shows you how to effectively implement and scale data governance throughout your organization. Chief information, data, and security officers and their teams will learn strategy and tooling to support democratizing data and unlocking its value while enforcing security, privacy, and other governance standards. Through good data governance, you can inspire customer trust, enable your organization to identify business efficiencies, generate more competitive offerings, and improve customer experience. This book shows you how. You'll learn: Data governance strategies addressing people, processes, and tools Benefits and challenges of a cloud-based data governance approach How data governance is conducted from ingest to preparation and use How to handle the ongoing improvement of data quality Challenges and techniques in governing streaming data Data protection for authentication, security, backup, and monitoring How to build a data culture in your organization

"This is the first book to tackle the subject of meta data in data warehousing, and the

results are spectacular . . . David Marco has written about the subject in a way that is approachable, practical, and immediately useful. Building and Managing the Meta Data Repository: A Full Lifecycle Guide is an excellent resource for any IT professional." -Steve Murchie Group Product Manager, Microsoft Corporation Meta data repositories can provide your company with tremendous value if they are used properly and if you understand what they can, and can't, do. Written by David Marco, the industry's leading authority on meta data and well-known columnist for DM Review, this book offers all the guidance you'll need for developing, deploying, and managing a meta data repository to gain a competitive advantage. After illustrating the fundamental concepts, Marco shows you how to use meta data to increase your company's revenue and decrease expenses. You'll find a comprehensive look at the major trends affecting the meta data industry, as well as steps on how to build a repository that is flexible enough to adapt to future changes. This vendor-neutral guide alsoincludes complete coverage of meta data sources, standards, and architecture, and it explores the full gamut of practical implementation issues.Taking you step-by-step through the process of implementing a meta data repository, Marco shows you how to: - Evaluate meta data tools Build the meta data project plan - Design a custom meta data architecture - Staff a repository team - Implement data quality through meta data - Create a physical meta data model - Evaluate meta data delivery requirements The CD-ROM includes: - A sample implementation project plan - A function and feature checklist of meta data tool

requirements - Several physical meta datamodels to support specific business functions Visit our Web site at www.wiley.com/compbooks/ Visit the companion Web site at www.wiley.com/compbooks/marco

Research funders in the UK, USA and across Europe are implementing data management and sharing policies to maximize openness of data, transparency and accountability of the research they support. Written by experts from the UK Data Archive with over 20 years experience, this book gives post-graduate students, researchers and research support staff the data management skills required in today's changing research environment. The book features guidance on: how to plan your research using a data management checklist how to format and organize data how to store and transfer data research ethics and privacy in data sharing and intellectual property rights data strategies for collaborative research how to publish and cite data how to make use of other people's research data, illustrated with six real-life case studies of data use.

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.

Data Governance: The Definitive Guide"O'Reilly Media, Inc."

Life-Cycle Civil Engineering: Innovation, Theory and Practice contains the lectures and papers presented at IALCCE2020, the Seventh International Symposium on Life-Cycle Civil Engineering, held in Shanghai, China, October 27-30, 2020. It consists of a book of extended abstracts and a multimedia device containing the full papers of 230 contributions, including the Fazlur R. Khan lecture, eight keynote lectures, and 221 technical papers from all over the world. All major aspects of life-cycle engineering are addressed, with special emphasis on life-cycle design, assessment, maintenance and management of structures and infrastructure systems under various deterioration mechanisms due to various environmental hazards. It is expected that the proceedings

of IALCCE2020 will serve as a valuable reference to anyone interested in life-cycle of civil infrastructure systems, including students, researchers, engineers and practitioners from all areas of engineering and industry.

This book introduces Information Lifecycle Management (ILM), a powerful new strategy for managing enterprise information based on its value over time. The author explains emerging techniques for protecting storage systems and storage networks, and for integrating storage security into your overall security plan. He also presents new technical advances and opportunities to improve existing data-protection processes, including backup/restore, replication, and remote copy.