

Dax Patterns 2015

PowerPivot is an amazing new add-in for Excel 2013 that allows business intelligence pros to process large amounts data. Although it is simple to use in a demo environment, analysts are likely to run into real-life scenarios that are difficult to solve. This guide, dedicated solely to the PowerPivot tool, provides techniques and solutions to real-world problems, including showing the Top N customers by using slicer filters, comparing budget to actuals, drilling across data instead of through data, and joining data from two different sources in a single analysis.

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

their business questions. Within this book, you will learn:

- Agile dimensional modeling using Business Event Analysis & Modeling (BEAM) Modelstorming: data modeling that is quicker, more inclusive, more productive, and frankly more fun!
- Telling dimensional data stories using the 7Ws (who, what, when, where, how many, why and how)
- Modeling by example not abstraction; using data story themes, not crow's feet, to describe detail
- Storyboarding the data warehouse to discover conformed dimensions and plan iterative development
- Visual modeling: sketching timelines, charts and grids to model complex process measurement - simply Agile design documentation: enhancing star schemas with BEAM dimensional shorthand notation
- Solving difficult DW/BI performance and usability problems with proven dimensional design patterns

LawrenceCorr is a data warehouse designer and educator. As Principal of DecisionOne Consulting, he helps clients to review and simplify their data warehouse designs, and advises vendors on visual data modeling techniques. He regularly teaches agile dimensional modeling courses worldwide and has taught dimensional DW/BI skills to thousands of students. Jim Stagnitto is a data warehouse and master data management architect specializing in the healthcare, financial services, and information service industries. He is the founder of the data warehousing and data mining consulting firm Llumino.

A pattern is a general, reusable solution to a frequent or common challenge. This book is the second edition of the most comprehensive collection of ready-to-use

solutions in DAX, that you can use in Microsoft Power BI, Analysis Services Tabular, and Power Pivot for Excel. The book includes the following patterns: Time-related calculations, Standard time-related calculations, Month-related calculations, Week-related calculations, Custom time-related calculations, Comparing different time periods, Semi-additive calculations, Cumulative total, Parameter table, Static segmentation, Dynamic segmentation, ABC classification, New and returning customers, Related distinct count, Events in progress, Ranking, Hierarchies, Parent-child hierarchies, Like-for-like comparison, Transition matrix, Survey, Basket analysis, Currency conversion, Budget.

Implement business intelligence (BI), data modeling, and data analytics within Microsoft products such as Power BI, SQL Server, and Excel Key Features Understand the ins and outs of DAX expressions and querying functions with the help of easy-to-follow examples Manipulate data of varying complexity and optimize BI workflows to extract key insights Create, monitor, and improve the performance of models by writing clean and robust DAX queries Book Description Data Analysis Expressions (DAX) is known for its ability to increase efficiency by extracting new information from data that is already present in your model. With this book, you'll learn to use DAX's functionality and flexibility in the BI and data analytics domains. You'll start by learning the basics of DAX, along with understanding the importance of good data models, and how to write efficient DAX formulas by using variables and formatting styles. You'll then explore how DAX queries work with the help of examples. The

book will guide you through optimizing the BI workflow by writing powerful DAX queries. Next, you'll learn to manipulate and load data of varying complexity within Microsoft products such as Power BI, SQL Server, and Excel Power Pivot. You'll then discover how to build and extend your data models to gain additional insights, before covering progressive DAX syntax and functions to understand complex relationships in DAX. Later, you'll focus on important DAX functions, specifically those related to tables, date and time, filtering, and statistics. Finally, you'll delve into advanced topics such as how the formula and storage engines work to optimize queries. By the end of this book, you'll have gained hands-on experience in employing DAX to enhance your data models by extracting new information and gaining deeper insights. What you will learn Understand DAX, from the basics through to advanced topics, and learn to build effective data models Write and use DAX functions and expressions with the help of hands-on examples Discover how to handle errors in your DAX code, and avoid unwanted results Load data into a data model using Power BI, Excel Power Pivot, and SSAS Tabular Cover DAX functions such as date, time, and time intelligence using code examples Gain insights into data by using DAX to create new information Understand the DAX VertiPaq engine and how it can help you optimize data models Who this book is for This book is for data analysts, business analysts, BI developers, or SQL users who want to make the best use of DAX in the BI and data analytics domain with the help of examples. Some understanding of BI concepts is mandatory to fully

understand the concepts covered in the book.

Deliver eye-catching and insightful business intelligence with Microsoft Power BI Desktop. This new edition has been updated to cover all the latest features of Microsoft's continually evolving visualization product. New in this edition is help with storytelling—adapted to PCs, tablets, and smartphones—and the building of a data narrative. You will find coverage of templates and JSON style sheets, data model annotations, and the use of composite data sources. Also provided is an introduction to incorporating Python visuals and the much awaited Decomposition Tree visual. Pro Power BI Desktop shows you how to use source data to produce stunning dashboards and compelling reports that you mold into a data narrative to seize your audience's attention. Slice and dice the data with remarkable ease and then add metrics and KPIs to project the insights that create your competitive advantage. Convert raw data into clear, accurate, and interactive information with Microsoft's free self-service BI tool. This book shows you how to choose from a wide range of built-in and third-party visualization types so that your message is always enhanced. You will be able to deliver those results on PCs, tablets, and smartphones, as well as share results via the cloud. The book helps you save time by preparing the underlying data correctly without needing an IT department to prepare it for you.

What You Will Learn

- Deliver attention-grabbing information, turning data into insight
- Find new insights as you chop and tweak your data as never before
- Build a data narrative through interactive reports with drill-through and cross-page

slicing Mash up data from multiple sources into a cleansed and coherent data model Build interdependent charts, maps, and tables to deliver visually stunning information Create dashboards that help in monitoring key performance indicators of your business Adapt delivery to mobile devices such as phones and tablets Who This Book Is For Power users who are ready to step up to the big leagues by going beyond what Microsoft Excel by itself can offer. The book also is for line-of-business managers who are starved for actionable data needed to make decisions about their business. And the book is for BI analysts looking for an easy-to-use tool to analyze data and share results with C-suite colleagues they support.

Any data analytics solution requires data population and preparation. With the rise of data analytics solutions these years, the need for this data preparation becomes even more essential. Power BI is a helpful data analytics tool that is used worldwide by many users. As a Power BI (or Microsoft BI) developer, it is essential to learn how to prepare the data in the right shape and format needed. You need to learn how to clean the data and build it in the structure that can be modeled easily and used high performant for visualization. Data preparation and transformation is the backend work. If you consider building a BI system as going to a restaurant and ordering food. The visualization is the food you see on the table nicely presented. The quality, the taste, and everything else comes from the hard work in the kitchen. The part that you don't see or the backend in the world of Power BI is Power Query. You may be already familiar

with some other data preparation and data transformation technologies, such as T-SQL, SSIS, Azure Data Factory, Informatica, etc. Power Query is a data transformation engine capable of preparing the data in the format you need. The good news is that to learn Power Query; you don't need to know programming. Power Query is for citizen data engineers. However, this doesn't mean that Power Query is not capable of performing advanced transformation. Unfortunately, because Power Query and data preparation is the kitchen work of the BI system, many Power BI users skip the learning of it and become aware of it somewhere along their BI project. Once they get familiar with it, they realize there are tons of things they could have implemented easier, faster, and in a much more maintainable way using Power Query. In other words, they learn mastering Power Query is the key skill toward mastering Power BI. We have been working with Power Query since the very early release of that in 2013, named Data Explorer, and wrote blog articles and published videos about it. The number of articles we published under this subject easily exceeds hundreds. Through those articles, some of the fundamentals and key learnings of Power Query are explained. We thought it is good to compile some of them in a book. A good analytics solution combines a good data model, good data preparation, and good analytics and calculations. Reza has written another book about the Basics of modeling in Power BI and a book on Power BI DAX Simplified. This book is covering the data preparation and transformations aspects of it. This book is for you if

you are building a Power BI solution. Even if you are just visualizing the data, preparation and transformations are an essential part of analytics. You do need to have the cleaned and prepared data ready before visualizing it.

This book is compiled into a series of two books, which will be followed by a third book later; Getting started with Power Query in Power BI and Excel (this book)

Mastering Power Query in Power BI and Excel (already available to be purchased separately) Power Query dataflows (will be published later) Although this book is written for Power BI and all the examples are presented using the Power BI. However, the examples can be easily applied to Excel, Dataflows, and other tools and services using Power Query.

Manage Power BI within organizations. This book helps you systematize administration as Microsoft shifts Power BI from a self-service tool to an enterprise tool. You will learn best practices for many Power BI administrator tasks. And you will know how to manage artifacts such as reports, users, work spaces, apps, and gateways. The book also provides experience-based guidance on governance, licensing, and managing capacities. Good management includes policies and procedures that can be applied consistently and even automatically across a broad user base. This book provides a strategic road map for the creation and implementation of policies and procedures that support Power BI best practices in enterprises. Effective governance depends not only on good policies, but also on the active and timely monitoring of adherence to those policies. This book helps you evaluate the tools to automate and simplify the

most common administrative and monitoring tasks, freeing up administrators to provide greater value to the organization through better user training and awareness initiatives. What You Will Learn Recognize the roles and responsibilities of the Power BI administrator Manage users and their work spaces Know when to consider using Power BI Premium Govern your Power BI implementation and manage Power BI tenants Create an effective security strategy for Power BI in the enterprise Collaborate and share consistent views of the data across all users Follow a life cycle management strategy for rollout of dashboards and reports Create internal training resources backed up by accurate documentation Monitor Power BI to better understand risks and compliance manage costs, and track implementation Who This Book Is For IT professionals tasked with maintaining their corporate Power BI environments, Power BI administrators and power users interested in rolling out Power BI more widely in their organizations, and IT governance professionals tasked with ensuring adherence to policies and regulations

This book provides a comprehensive introduction to actuarial mathematics, covering both deterministic and stochastic models of life contingencies, as well as more advanced topics such as risk theory, credibility theory and multi-state models. This new edition includes additional material on credibility theory, continuous time multi-state models, more complex types of contingent insurances, flexible contracts such as universal life, the risk measures VaR and TVaR. Key Features: Covers much of the syllabus material on the modeling

examinations of the Society of Actuaries, Canadian Institute of Actuaries and the Casualty Actuarial Society. (SOA-CIA exams MLC and C, CSA exams 3L and 4.) Extensively revised and updated with new material. Orders the topics specifically to facilitate learning. Provides a streamlined approach to actuarial notation. Employs modern computational methods. Contains a variety of exercises, both computational and theoretical, together with answers, enabling use for self-study. An ideal text for students planning for a professional career as actuaries, providing a solid preparation for the modeling examinations of the major North American actuarial associations. Furthermore, this book is highly suitable reference for those wanting a sound introduction to the subject, and for those working in insurance, annuities and pensions.

Shows readers how to perform complex data analysis, create reports with the data analysis expressions language, and add hierarchies to data models to enable faster browsing.

Build agile and responsive business intelligence solutions Create a semantic model and analyze data using the tabular model in SQL Server 2016 Analysis Services to create corporate-level business intelligence (BI) solutions. Led by two BI experts, you will learn how to build, deploy, and query a tabular model by following detailed examples and best practices. This hands-on book shows you how to use the tabular model's in-memory database to perform rapid analytics—whether you are new to Analysis

Services or already familiar with its multidimensional model. Discover how to:

- Determine when a tabular or multidimensional model is right for your project
- Build a tabular model using SQL Server Data Tools in Microsoft Visual Studio 2015
- Integrate data from multiple sources into a single, coherent view of company information
- Choose a data-modeling technique that meets your organization's performance and usability requirements
- Implement security by establishing administrative and data user roles
- Define and implement partitioning strategies to reduce processing time
- Use Tabular Model Scripting Language (TMSL) to execute and automate administrative tasks
- Optimize your data model to reduce the memory footprint for VertiPaq
- Choose between in-memory (VertiPaq) and pass-through (DirectQuery) engines for tabular models
- Select the proper hardware and virtualization configurations
- Deploy and manipulate tabular models from C# and PowerShell using AMO and TOM libraries

Get code samples, including complete apps, at: <https://aka.ms/tabular/downloads>

About This Book

- For BI professionals who are new to SQL Server 2016 Analysis Services or already familiar with previous versions of the product, and who want the best reference for creating and maintaining tabular models.
- Assumes basic familiarity with database design and business analytics concepts.

Attention all SQL Pros, DAX is not just for writing Excel-based formulas! Get hands-on learning and expert advice on how to use the vast capabilities of the DAX language to solve common data modeling challenges. Beginning DAX with Power BI teaches key concepts such as mapping techniques from SQL to DAX, filtering, grouping, joining, pivoting, and using temporary tables, all aimed at the SQL professional. Join author Philip Seamark as he guides you on a journey through typical business data transformation scenarios and challenges, and teaches you, step-by-step, how to resolve challenges using DAX. Tips, tricks, and shortcuts are included and explained, along with examples of the SQL equivalent, in order to accelerate learning. Examples in the book range from beginner to advanced, with plenty of detailed explanation when walking through each scenario. What You'll Learn Turbocharge your Power BI model by adding advanced DAX programming techniques Know when to use calculated measures versus calculated columns Generate new tables on the fly from existing data Optimize, monitor, and tune Power BI to improve performance of your models Discover new ideas, tricks, and time-saving techniques for better models Who This Book Is For Business intelligence developers, business analysts, or any SQL user who wants to use Power BI as a reporting tool. A solid understanding of SQL is recommended,

as examples throughout the book include the DAX equivalents to SQL problem/solution scenarios. Renowned DAX experts Alberto Ferrari and Marco Russo teach you how to design data models for maximum efficiency and effectiveness. How can you use Excel and Power BI to gain real insights into your information? As you examine your data, how do you write a formula that provides the numbers you need? The answers to both of these questions lie with the data model. This book introduces the basic techniques for shaping data models in Excel and Power BI. It's meant for readers who are new to data modeling as well as for experienced data modelers looking for tips from the experts. If you want to use Power BI or Excel to analyze data, the many real-world examples in this book will help you look at your reports in a different way—like experienced data modelers do. As you'll soon see, with the right data model, the correct answer is always a simple one! By reading this book, you will:

- Gain an understanding of the basics of data modeling, including tables, relationships, and keys
- Familiarize yourself with star schemas, snowflakes, and common modeling techniques
- Learn the importance of granularity
- Discover how to use multiple fact tables, like sales and purchases, in a complex data model
- Manage calendar-related calculations by using date tables
- Track historical attributes, like previous addresses of customers or

manager assignments • Use snapshots to compute quantity on hand • Work with multiple currencies in the most efficient way • Analyze events that have durations, including overlapping durations • Learn what data model you need to answer your specific business questions About This Book • For Excel and Power BI users who want to exploit the full power of their favorite tools • For BI professionals seeking new ideas for modeling data

Rose decides to have a sleepover party for her birthday. What she thought was a great idea turns into a nightmare when the two most popular girls in the class declare they won't attend if Rose insists on inviting her best friend, Stacy.

Excel 2016 In Depth Full Color: Figures and code appear as they do in Excel 2016 Beyond the Basics...Beneath the Surface...In Depth Do more in less time! Experienced with Excel? Don't let Excel 2016 make you feel like a beginner again! This new full-color edition of the bestselling book has been completely overhauled. Gone is unnecessary and rarely used content; emphasis is on the most-used and new aspects of Excel 2016. The result is a focused book where every topic is relevant and worth learning. Excel 2016 In Depth is the fastest, smartest way to master Excel 2016's full power and updated interface. You'll discover how to leverage Excel's new tools for charting, business analysis, data visualization, forecasting, and more. • Quickly

clean your data with Excel 2016's powerful Get & Transform tools • Discover Excel 2016's newest charts: waterfall, histogram, Pareto, sunburst, TreeMap, and Box and Whisker • Use Forecast Sheets to forecast the future, including seasonal adjustments • Pivot data on maps with 3D Maps, and animate your maps over time • Create formulas, charts, subtotals, and pivot tables faster than ever • Create amazing PowerPivot data mashups that integrate information from anywhere • Automate repetitive functions using Excel macros • Solve real-world business intelligence analysis problems • Use PowerPivot Data Model to create pivot tables from multiple data sets without VLOOKUP • Share workbooks on the Web and social networks • Leverage Excel to create highly interactive web pages and online surveys • Quickly apply attractive, consistent formats This book is part of Que's Content Update Program. As Microsoft updates features of Excel, sections of this book will be updated or new sections will be added to match the updates to the software. See inside for details. I have been dealing with many Power BI challenges in my professional life as a Power BI consultant and a trainer. Challenges normally come as calculation or DAX questions, or sometimes as a performance question. However, after digging deeper into the problem, soon, it will be revealed that the problem is related to a more fundamental challenge; data

modeling. If you have a Power BI implementation with many calculation-related or performance-related issues, I strongly suggest looking into your data model because that is where most of the problems start. A good data model is a great base, which upon that, you can build up many stories of calculations and analysis. A bad data model causes problems on every level that you add upon it, and might sometime cause the whole solution to collapse. Fortunately, data modeling is not rocket science. I explained the basic principles of the data modeling with examples in this book. Use this book as the learning path towards a better data model. Most of the tips mentioned in this book are product-agnostic (such as star-schema, dimension, and fact tables). However, this book is particularly designed and developed for a Power BI product user. This book is for you if you are building a Power BI solution. If your task is only visualizing the existing data, this book might not be needed for you. However, What I have seen in many cases, is that the requirement starts with just visualize the data, and then more data tables appear, and you get into the tunnel of data modeling without knowing the principles of it. This book is a guide for you through that tunnel.

Introduces machine learning and its algorithmic paradigms, explaining the principles behind automated learning approaches and the considerations underlying their usage.

Solve real-world business problems by learning how to create common industry key performance indicators and other calculations using DAX within Microsoft products such as Power BI, SQL Server, and Excel. Key Features Learn to write sophisticated DAX queries to solve business intelligence and data analytics challenges Handle performance issues and optimization within the data model, DAX calculations and more Solve business issues with Microsoft Excel, Power BI, and SQL Server using DAX queries Book Description DAX provides an extra edge by extracting key information from the data that is already present in your model. Filled with examples of practical, real-world calculations geared toward business metrics and key performance indicators, this cookbook features solutions that you can apply for your own business analysis needs. You'll learn to write various DAX expressions and functions to understand how DAX queries work. The book also covers sections on dates, time, and duration to help you deal with working days, time zones, and shifts. You'll then discover how to manipulate text and numbers to create dynamic titles and ranks, and deal with measure totals. Later, you'll explore common business metrics for finance, customers, employees, and projects. The book will also show you how to implement common industry metrics such as days of supply, mean time between failure, order cycle time and overall equipment effectiveness. In the

concluding chapters, you'll learn to apply statistical formulas for covariance, kurtosis, and skewness. Finally, you'll explore advanced DAX patterns for interpolation, inverse aggregators, inverse slicers, and even forecasting with a deseasonalized correlation coefficient. By the end of this book, you'll have the skills you need to use DAX's functionality and flexibility in business intelligence and data analytics. What you will learn

- Understand how to create common calculations for dates, time, and duration
- Create key performance indicators (KPIs) and other business calculations
- Develop general DAX calculations that deal with text and numbers
- Discover new ideas and time-saving techniques for better calculations and models
- Perform advanced DAX calculations for solving statistical measures and other mathematical formulas
- Handle errors in DAX and learn how to debug DAX calculations
- Understand how to optimize your data models

Who this book is for Business users, BI developers, data analysts, and SQL users who are looking for solutions to the challenges faced while solving analytical operations using DAX techniques and patterns will find this book useful. Basic knowledge of the DAX language and Microsoft services is mandatory.

Over 100 expert recipes to design, create, and deploy SSIS packages with this book and ebook. This book will take you through the step-by-step

process of implementing PowerPivot by using universal examples such as the Balance Sheet, Income Statement and Statement of Cash Flows. Once you understand the basic concepts, you can create your own workbooks that are fully linked and automated such as an SEC reporting package, management reporting dashboards, KPI report cards, etc. Power Pivot is Business Intelligence add-in to Microsoft Excel which breaks through some of the limitations of traditional pivot tables. PowerPivot increases data capacity, improves calculations, and connects data from multiple sources. This book is dedicated to finance professionals who prefer clean and efficient spreadsheets with better control over data quality and consistency.

This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. Introducing Microsoft Power BI enables you to evaluate when and how to use Power BI. Get inspired to improve business processes in your company by leveraging the available analytical and collaborative features of this environment. Be sure to watch for the publication of Alberto Ferrari and Marco Russo's upcoming retail book, *Analyzing Data with Power BI and Power Pivot for Excel* (ISBN 9781509302765). Go to the book's page at the Microsoft Press Store here for more details:<http://aka.ms/analyzingdata/details>. Learn

more about Power BI at
<https://powerbi.microsoft.com/>.

Power BI is a powerful self-service (and enterprise) business intelligence (BI) tool that was first made generally available by Microsoft in July 2015. Power BI is a complete BI package that covers the end to end BI process including data acquisition (get data), data modelling (prepare/model the data) and data visualisation (analyse the data). And there is a lot of good news about this tool including the fact that the skills needed to succeed with Power BI are fully transferable to Microsoft Excel. There are 3 learning areas required to master everything Power BI Desktop has to offer.

1. The M Language - used for data acquisition
2. The DAX Language - used to prepare and model data
3. Visualisation and analysis - used to present data in a compelling way

Power BI is probably the first commercial grade software product that brings all of these areas into a single software package that is completely accessible to a business user (you don't need to be an IT pro). This book focuses on number 2 above, the DAX language (Data Analysis Expressions). Super Charge Power BI Desktop is the second book written by Matt Allington and is a sister book to his first book Learn to Write DAX (first released Dec 2015). Super Charge Power BI Desktop uses the same learning and practice exercise framework as used in Learn to Write DAX however the entire book is written using

the Power BI Desktop user interface. Unfortunately simply reading a book is normally not enough for Excel users wanting to get the most out of Power BI Desktop and to learn the DAX language - most people will also need some practice. Super Charge Power BI Desktop is different to other books - it is written in such a way to clearly explain the concepts of Power BI data modelling while at the same time giving hands-on practice to deeply engage the reader to help the new knowledge and concepts stick. The book first presents the theory, then provides worked through sample exercises demonstrating each of the concepts, and finally it provides the reader with practice exercises and answers to maximize learning retention.

Learn the intricate workings of DAX and the mechanics that are necessary to solve advanced Power BI challenges. This book is all about DAX (Data Analysis Expressions), the formula language used in Power BI—Microsoft’s leading self-service business intelligence application—and covers other products such as PowerPivot and SQL Server Analysis Services Tabular. You will learn how to leverage the advanced applications of DAX to solve complex tasks. Often a task seems complex due to a lack of understanding, or a misunderstanding of core principles, and how certain components interact with each other. The authors of this book use solutions and examples to teach you how to solve complex

problems. They explain the intricate workings of important concepts such as Filter Context and Context Transition. You will learn how Power BI, through combining DAX building blocks (such as measures, table filtering, and data lineage), can yield extraordinary analytical power. Throughout Pro Dax with Power BI these building blocks are used to create and compose solutions for advanced DAX problems, so you can independently build solutions to your own complex problems, and gain valuable insight from your data.

What You Will Learn

- Understand the intricate workings of DAX to solve advanced problems
- Deconstruct problems into manageable parts in order to create your own recipes
- Apply predefined solutions for addressing problems, and link back step-by-step to the mechanics of DAX, to know the foundation of this powerful query language
- Get fully on board with DAX, a new and evolving language, by learning best practices

Who This Book Is For Anyone who wants to use Power BI to build advanced and complex models. Some experience writing DAX is helpful, but not essential if you have experience with other data query languages such as MDX or SQL.

Discover how you can combine data from various sources to create data models to suit your business requirements with the help of this clear and concise guide

Key Features Understand how Power Query overcomes the shortcomings of Excel Power Pivot in

handling complex data Create customized dashboards and multi-dimensional reports using Power Query and Power BI Learn the Power Query M language and write advanced queries using custom functions Book Description Power Query is a data connection technology that allows you to connect, combine, and refine data from multiple sources to meet your business analysis requirements. With this Power Query book, you'll be empowered to work with a variety of data sources to create interactive reports and dashboards using Excel and Power BI. You'll start by learning how to access Power Query across different versions of Excel and install the Power BI engine. After you've explored Power Pivot, you'll see why Excel users find it challenging to clean data in Power Pivot and learn how Power Query can help to tackle the problem. The book will show you how to transform data using the Query Editor and write functions in Power Query. A dedicated section will focus on functions such as IF, Index, and Modulo, and creating parameters to alter query paths in a table. You'll also work with dashboards, get to grips with multi-dimensional reporting, and create automated reports. As you advance, you'll cover the M formula language in Power Query, delve into the basic M syntax, and write the M query language with the help of examples such as loading all library functions offline in Excel and Power BI. Finally, the book will

demonstrate the difference between M and DAX and show how results are produced in M. By the end of this book, you'll be ready to create impressive dashboards and multi-dimensional reports in Power Query and turn data into valuable insights. What you will learn

- Convert worksheet data into a table format ready for query output
- Create a dynamic connection between an Access database and Excel workbook
- Reshape tabular data by altering rows, columns, and tables using various Power Query tools
- Create new columns automatically from filenames and sheet tabs, along with multiple Excel data files
- Streamline and automate reports from multiple sources
- Explore different customization options to get the most out of your dashboards
- Understand the difference between the DAX language and Power Query's M language

Who this book is for This Power Query book is for business analysts, data analysts, BI professionals, and Excel users looking to take their skills to the next level by learning how to collect, combine, and transform data into insights using Power Query. Working knowledge of Excel and experience in constructing and troubleshooting Excel formulas and functions is expected.

This comprehensive and authoritative guide will teach you the DAX language for business intelligence, data modeling, and analytics. Leading Microsoft BI consultants Marco Russo and Alberto Ferrari help you master everything from table

functions through advanced code and model optimization. You'll learn exactly what happens under the hood when you run a DAX expression, how DAX behaves differently from other languages, and how to use this knowledge to write fast, robust code. If you want to leverage all of DAX's remarkable power and flexibility, this no-compromise "deep dive" is exactly what you need. Perform powerful data analysis with DAX for Microsoft SQL Server Analysis Services, Excel, and Power BI Master core DAX concepts, including calculated columns, measures, and error handling Understand evaluation contexts and the CALCULATE and CALCULATETABLE functions Perform time-based calculations: YTD, MTD, previous year, working days, and more Work with expanded tables, complex functions, and elaborate DAX expressions Perform calculations over hierarchies, including parent/child hierarchies Use DAX to express diverse and unusual relationships Measure DAX query performance with SQL Server Profiler and DAX Studio

A limit order book is essentially a file on a computer that contains all orders sent to the market, along with their characteristics such as the sign of the order, price, quantity and a timestamp. The majority of organized electronic markets rely on limit order books to store the list of interests of market participants on their central computer. A limit order book contains all the information available on a

specific market and it reflects the way the market moves under the influence of its participants. This book discusses several models of limit order books. It begins by discussing the data to assess their empirical properties, and then moves on to mathematical models in order to reproduce the observed properties. Finally, the book presents a framework for numerical simulations. It also covers important modelling techniques including agent-based modelling, and advanced modelling of limit order books based on Hawkes processes. The book also provides in-depth coverage of simulation techniques and introduces general, flexible, open source library concepts useful to readers studying trading strategies in order-driven markets.

"When nature inspires our architecture-not just how it looks but how buildings and communities actually function-we will have made great strides as a society. Biophilic Design provides us with tremendous insight into the 'why,' then builds us a road map for what is sure to be the next great design journey of our times."

-Rick Fedrizzi, President, CEO and Founding Chairman, U.S. Green Building Council "Having seen firsthand in my company the power of biomimicry to stimulate a wellspring of profitable innovation, I can say unequivocally that biophilic design is the real deal. Kellert, Heerwagen, and Mador have compiled the wisdom of world-renowned experts to produce this exquisite book; it is must reading for scientists,

philosophers, engineers, architects and designers, and most especially businesspeople. Anyone looking for the key to a new type of prosperity that respects the earth should start here."

-Ray C. Anderson, founder and Chair, Interface, Inc.

The groundbreaking guide to the emerging practice of biophilic design. This book offers a paradigm shift in how we design and build our buildings and our communities, one that recognizes that the positive experience of natural systems and processes in our buildings and constructed landscapes is critical to human health, performance, and well-being. Biophilic design is about humanity's place in nature and the natural world's place in human society, where mutuality, respect, and enriching relationships can and should exist at all levels and should emerge as the norm rather than the exception. Written for architects, landscape architects, planners, developers, environmental designers, as well as building owners, *Biophilic Design: The Theory, Science, and Practice of Bringing Buildings to Life* is a guide to the theory, science, and practice of biophilic design. Twenty-three original and timely essays by world-renowned scientists, designers, and practitioners, including Edward O. Wilson, Howard Frumkin, David Orr, Grant Hildebrand, Stephen Kieran, Tim Beatley, Jonathan Rose, Janine Benyus, Roger Ulrich, Bert Gregory, Robert Berkebile, William Browning, and Vivian Loftness,

among others, address: * The basic concepts of biophilia, its expression in the built environment, and how biophilic design connects to human biology, evolution, and development. * The science and benefits of biophilic design on human health, childhood development, healthcare, and more. * The practice of biophilic design-how to implement biophilic design strategies to create buildings that connect people with nature and provide comfortable and productive places for people, in which they can live, work, and study. Biophilic design at any scale-from buildings to cities-begins with a few simple questions: How does the built environment affect the natural environment? How will nature affect human experience and aspiration? Most of all, how can we achieve sustained and reciprocal benefits between the two? This prescient, groundbreaking book provides the answers.

Offers information on the patterns and techniques of the formula language DAX.

Dax Patterns 2015 CreateSpace

Destiny is pre-determined. It is strictly monitored. It is unchangeable. Or is it? Madden's life is a whirlwind of privilege and perks. Born into the elite Purple ring, she is fated to be a Minister of the Seven. Although her position comes with the burden of great responsibility, she's nothing if not confident in her future. After all, Destiny Specialists have determined how she will fulfill her life's purpose, and they are

never wrong. Her classmate Dax, an Ash, is clinging to the opposite end of the spectrum. While everyone around her knows what destiny awaits them, Dax's fate is...missing. Isolated and ignored, she refuses to let her lack of status define her. After a stunning twist of fate, Dax and Madden's paths intertwine in ways neither could have possibly imagined. The two are forced to question their own past, present and future as they realize who they are is not necessarily who they were meant to be. ASH, the first book in the Destined series, is an unforgettable journey into an alternate future which will leave readers wondering just how much we can control our own fate. Destiny is calling. Will you fight for yours?

Architect and deploy a Power BI solution. This book will help you understand the many available options and choose the best combination for hosting, developing, sharing, and deploying a Power BI solution within your organization. Pro Power BI Architecture provides detailed examples and explains the different methods available for sharing and securing Power BI content so that only intended recipients can see it. Commonly encountered problems you will learn to handle include content unexpectedly changing while users are in the process of creating reports and building analysis, methods of sharing analyses that don't cover all the requirements of your business or organization, and inconsistent security models. The knowledge

provided in this book will allow you to choose an architecture and deployment model that suits the needs of your organization, ensuring that you do not spend your time maintaining your solution but on using it for its intended purpose and gaining business value from mining and analyzing your organization's data. What You'll Learn Architect and administer enterprise-level Power BI solutions Choose the right sharing method for your Power BI solution Create and manage environments for development, testing, and production Implement row level security in multiple ways to secure your data Save money by choosing the right licensing plan Select a suitable connection type—Live Connection, DirectQuery, or Scheduled Refresh—for your use case Set up a Power BI gateway to bridge between on-premises data sources and the Power BI cloud service Who This Book Is For Data analysts, developers, architects, and managers who want to leverage Power BI for their reporting solution Get more out of Microsoft Power BI turning your data into actionable insights About This Book From connecting to your data sources to developing and deploying immersive, mobile-ready dashboards and visualizations, this book covers it all Over 90 hands-on, technical recipes, tips, and use cases from across the Power BI platform including the Power BI Service and Mobile Applications Proven development techniques and guidance for

implementing custom solutions with DAX and M languages Who This Book Is For This book is for BI professionals who wish to enhance their knowledge of Power BI beyond and to enhance the value of the Power BI solutions they deliver to business users. Those who are looking at quick solutions to common problems while using Power BI will also find this book to be a very useful resource .Some experience with Power BI will be useful. What You Will Learn Cleanse, stage, and integrate your data sources with Power BI Abstract data complexities and provide users with intuitive, self-service BI capabilities Build business logic and analysis into your solutions via the DAX programming language and dynamic, dashboard-ready calculations Take advantage of the analytics and predictive capabilities of Power BI Make your solutions more dynamic and user specific and/or defined including use cases of parameters, functions, and row level security Understand the differences and implications of DirectQuery, Live Connections, and Import-Mode Power BI datasets and how to deploy content to the Power BI Service and schedule refreshes Integrate other Microsoft data tools such as Excel and SQL Server Reporting Services into your Power BI solution In Detail Microsoft Power BI is a business intelligence and analytics platform consisting of applications and services designed to provide coherent, visual and interactive insights of data. This book will provide

thorough, technical examples of using all primary Power BI tools and features as well as demonstrate high impact end-to-end solutions that leverage and integrate these technologies and services. Get familiar with Power BI development tools and services, go deep into the data connectivity and transformation, modeling, visualization and analytical capabilities of Power BI, and see Power BI's functional programming languages of DAX and M come alive to deliver powerful solutions to address common, challenging scenarios in business intelligence. This book will excite and empower you to get more out of Power BI via detailed recipes, advanced design and development tips, and guidance on enhancing existing Power BI projects. Style and approach This book consists of practical recipes on Power BI that target novices as well as intermediate Power BI users. It goes deep into the technical issues, covers additional protocols, and many more real-live examples.

A pattern is a general reusable solution to a commonly occurring problem. This book is a collection of ready-to-use data models and formulas in DAX, that you can use in Power Pivot for Excel and in Microsoft Analysis Services Tabular. Create your data model faster by using a DAX pattern! Power Query for Power BI and Excel is a book for people who are tired of copying and pasting data into Excel worksheets. Power Query, part of the Microsoft Power BI

suite, is a tool that automates the process of getting data into Excel and will save you hours of dull, repetitive, and error-prone work! Power Query makes it easy to extract data from many different data sources, filter that data, aggregate it, clean it and perform calculations on it, finally loading that data into either your worksheet or directly into the new Excel 2013 Data Model used by Power Pivot. This concise, practical book provides a complete guide to Power Query and how to use it to solve all of your Excel data-loading problems. Power Query for Power BI and Excel goes well beyond the surface of what Power Query can do. The book goes deep into the underlying M language, showing you how to do amazing things that aren't going to be possible from just the GUI interface that is covered in most other books. You'll have full command of the GUI, and you'll be able to drop into the M language to go beyond what the GUI provides. The depth in this book makes it a must-have item for anyone who is pushing Power BI and Excel to their limits in the pursuit of business intelligence from data analysis. Teaches the basics of using Power Query to load data into Excel Helps you solve common, data-related problems with Power Query Shows how to write your own solutions in the powerful M language

This easy-to-follow guide provides R and Python recipes to help you learn and apply the top languages in the field of data analytics to your work in Microsoft Power BI. Data analytics expert and author Ryan Wade shows you how to use R and Python to perform tasks that are extremely hard to do, if not impossible, using native Power BI tools without Power BI Premium capacity. For

example, you will learn to score Power BI data using custom data science models, including powerful models from Microsoft Cognitive Services. The R and Python languages are powerful complements to Power BI. They enable advanced data transformation techniques that are difficult to perform in Power BI in its default configuration, but become easier through the application of data wrangling features that languages such as R and Python support. If you are a BI developer, business analyst, data analyst, or a data scientist who wants to push Power BI and transform it from being just a business intelligence tool into an advanced data analytics tool, then this is the book to help you to do that. What You Will Learn Create advanced data visualizations through R using the ggplot2 package Ingest data using R and Python to overcome the limitations of Power Query Apply machine learning models to your data using R and Python Incorporate advanced AI in Power BI via Microsoft Cognitive Services, IBM Watson, and pre-trained models in SQL Server Machine Learning Services Perform string manipulations not otherwise possible in Power BI using R and Python Who This Book Is For Power users, data analysts, and data scientists who want to go beyond Power BI's built-in functionality to create advanced visualizations, transform data in ways not otherwise supported, and automate data ingestion from sources such as SQL Server and Excel in a more succinct way Microsoft PowerPivot is a free add-on to Excel from Microsoft that allows users to produce new kinds of reports and analyses that were simply impossible before, and this book is the first to tackle DAX formulas, the core

capability of PowerPivot, from the perspective of the Excel audience. Written by the world's foremost PowerPivot blogger and practitioner, the book's concepts and approach are introduced in a simple, step-by-step manner tailored to the learning style of Excel users everywhere. The techniques presented allow users to produce, in hours or even minutes, results that formerly would have taken entire teams weeks or months to produce. It includes lessons on the difference between calculated columns and measures; how formulas can be reused across reports of completely different shapes; how to merge disjointed sets of data into unified reports; how to make certain columns in a pivot behave as if the pivot were filtered while other columns do not; and how to create time-intelligent calculations in pivot tables such as "Year over Year" and "Moving Averages" whether they use a standard, fiscal, or a complete custom calendar. The "pattern-like" techniques and best practices contained in this book have been developed and refined over two years of onsite training with Excel users around the world, and the key lessons from those seminars costing thousands of dollars per day are now available to within the pages of this easy-to-follow guide. This updated second edition covers new features introduced with Office 2015.

An easy-to-follow guide full of hands on examples of real-world Analysis Services cube development tasks. Each topic is explained and placed in context, and for the more inquisitive reader, there also more in-depth details of the concepts used. If you are an Analysis Services cube designer wishing to learn more advanced topic and best

practices for cube design, this book is for you. You are expected to have some prior experience with Analysis Services cube development.

Microsoft's revolutionary Power Pivot is a tool that allows users to create and transform data into reports and dashboards in new and much more powerful ways using the most-used analytical tool in the world: Excel. This book, written by a member of Microsoft's Power Pivot team, provides a practical step by step guide on creating a financial dashboard. The book covers in detail how to combine and shape the relevant data, build the dashboard in Excel, providing layout and design tips and tricks, prepare the model to work with fiscal dates, and show values used in many financial reports, including year-to-date, variance-to-target, percentage-of-total, and running totals reports. Accessibly written, this book offers readers a practical, real-world scenario and can be used as a day-to-day reference. Though the guide focuses on Power Pivot for Excel 2010, a chapter that discusses Power View—compatible with Excel 2013—and Power BI is also included.

ANALYZE HUGE AMOUNTS OF BUSINESS DATA FASTER, MORE EASILY, AND MORE ACCURATELY!
Use Microsoft's free PowerPivot add-in for Excel 2010 to analyze immense amounts of data from any source, perform state-of-the-art business analysis far more easily, and make better decisions in less time! Simple, step-by-step instructions walk you through installing PowerPivot, importing data, using PivotTables with PowerPivot, using super-powerful DAX functions and measures, reporting to print or SharePoint, and a whole

lot more. Whatever your Excel data analysis experience, this book will help you use PowerPivot to get the right answers, right now—without IT's help! Import and integrate data from spreadsheets, SQL Server, Access, Oracle, text files, Atom data feeds, and other sources Analyze multiple tables together, without complicated VLOOKUPS Format, sort, and filter data in the PowerPivot window Add calculated columns using new DAX functions Create powerful reports from PowerPivot data—and format them so executives instantly get your point Discover PivotTable tricks that work even better in PowerPivot Control multiple PivotTable elements on one worksheet, with one set of Excel 2010 Slicers Use DAX Measures to quickly perform tasks that were difficult or impossible with Calculated Fields Compare today's sales to yesterday's—or to sales from the parallel period last fiscal year. Use Named Sets to prepare asymmetric reports, show actuals for past months and plan for future months.

This book will show you how to use Power BI effectively to create a variety of visualizations and BI dashboards. Right from gathering data through various data sources, you will learn to perform effective visual analytics. By the end of this book, you will be able to gain unique, hidden insights into your data using Microsoft Power BI.

Power Query is one component of the Power BI (Business Intelligence) product from Microsoft, and "M" is the name of the programming language created by it. As more business intelligence pros begin using Power Pivot, they find that they do not have the Excel skills to clean the data in Excel; Power Query solves this

problem. This book shows how to use the Power Query tool to get difficult data sets into both Excel and Power Pivot, and is solely devoted to Power Query dashboarding and reporting.

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