Expert Performance Indexing In Sql Server 2019 To

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Expert Performance Indexing for SQL Server 2012 Jason Strate 2012-09-07 Expert Performance Indexing for SQL Server 2012 is a deep dive into perhaps the single-most important facet of good performance: indexes, and how to best use them. The book begins in the shallow waters with explanations of the types of indexes and how they are stored in databases. Moving deeper into the topic, and further into the book, you will look at the statistics that are accumulated both by indexes and on indexes. All of this will help you progress towards properly achieving your database performance goals. What you'll learn from Expert Performance Indexing for SQL Server 2012 will help you understand what indexes are doing in the database and what can be done to mitigate and improve their effects on performance. The final destination is a guided tour through a number of real-world scenarios and approaches that can be taken to investigate, mitigate, and improve the performance of your database. Defines indexes and provides an understanding of their role Uncovers and explains the statistics that are kept in indexes Teaches strategies and approaches for indexing databases

Introducing Microsoft SQL Server 2019 Kellyn Gorman 2020-04-27 Explore the impressive storage and analytic tools available with the in-cloud and on-premises versions of Microsoft SQL Server 2019. Key FeaturesGain insights into what’s new in SQL Server 2019Understand use cases and customer scenarios that can be implemented with SQL Server 2019Discover new cross-platform tools that simplify management and analysisBook Description Microsoft SQL Server comes equipped with industry-leading features and the best online transaction processing capabilities. If you are looking to work with data processing and management, getting up to speed with Microsoft Server 2019 is key. Introducing SQL Server 2019 takes you through the latest features in SQL Server 2019 and their importance. You will learn to unlock faster querying speeds and understand how to leverage the new and improved security features to build robust data management solutions. Further chapters will assist you with integrating, managing, and analyzing all data, including relational, NoSQL, and unstructured big data using SQL Server 2019. Dedicated sections in the book will also demonstrate how you can use SQL Server 2019 to leverage data processing platforms, such as Apache Hadoop and Spark, and containerization technologies like Docker and Kubernetes to control your data and efficiently monitor it. By the end of this book, you'll be well versed with all the features of Microsoft SQL Server 2019 and understand how to use them confidently to build robust data management solutions. What you will learnBuild a custom container image with a DockerfileDeploy and run the SQL Server 2019 container imageUnderstand how to use SQL server on LinuxMigrate existing paginated reports to Power BI

Report ServerLearn to query Hadoop Distributed File System (HDFS) data using Azure Data StudioUnderstand the benefits of In-Memory OLTPWho this book is for This book is for database administrators, architects, big data engineers, or anyone who has experience with SQL Server and wants to explore and implement the new features in SQL Server 2019. Basic working knowledge of SQL Server and relational database management system (RDBMS) is required.

Refactoring Legacy T-SQL for Improved Performance Lisa Bohm 2020-01-10 Breathe new life into older applications by refactoring T-SQL queries and code using modern techniques. This book shows you how to significantly improve the performance of older applications by finding common anti-patterns in T-SQL code, then rewriting those anti-patterns using new functionality that is supported in current versions of SQL Server, including SQL Server 2019. The focus moves through the different types of database objects and the code used to create them, discussing the limitations and anti-patterns commonly found for each object type in your database. Legacy code isn't just found in queries and external applications. It's also found in the definitions of underlying database objects such as views and tables. This book helps you quickly find problematic code throughout the database and points out where and how modern solutions can replace older code, thereby making your legacy applications run faster and extending their lifetimes. Author Lisa Bohm explains the logic behind each anti-pattern, helping you understand why each pattern is a problem and showing how it can be avoided. Good coding habits are discussed, including guidance on topics such as readability and maintainability. What You Will LearnFind specific areas in code to target for performance gainsIdentify pain points quickly and understand why they are problematicRewrite legacy T-SQL to reduce or eliminate hidden performance issuesWrite modern code with an awareness of readability and maintainabilityRecognize and correlate T-SQL anti-patterns with techniques for better solutionsMake a positive impact on application user experience in your organization Who This Book Is For Database administrators or developers who maintain older code, those frustrated with complaints about slow code when there is so much of it to fix, and those who want a head start in making a positive impact on application user experience in their organization

SQL Server Query Performance Tuning Grant Fritchey 2014-09-16 Queries not running fast enough? Wondering about the in-memory database features in 2014? Tired of phone calls from frustrated users? Grant Fritchey's book SQL Server Query Performance Tuning is the answer to your SQL Server query performance problems. The book is revised to cover the very latest in performance optimization features and techniques, especially including the newly-added, in-memory database features formerly known under the code name Project Hekaton. This book provides the tools you need to approach your queries with performance in mind. SQL Server Query Performance Tuning leads you through understanding the causes of poor performance, how to identify them, and how to fix them. You'll learn to be proactive in establishing performance baselines using tools like Performance Monitor and Extended Events. You'll learn to recognize bottlenecks and defuse them before the phone rings. You'll learn some quick solutions too, but emphasis is on designing for performance and getting it right, and upon heading off trouble before it occurs. Delight your users. Silence that ringing phone. Put the principles and lessons from SQL Server Query Performance Tuning into practice today. Covers the in-memory features from Project Hekaton Helps establish performance baselines and monitor against them Guides in troubleshooting and eliminating of bottlenecks that frustrate users

SQL Server Advanced Troubleshooting and Performance Tuning Dmitri Korotkevitch 2022-05-13 This practical book provides a comprehensive overview of troubleshooting and performance tuning best practices for Microsoft SQL Server. Database engineers, including database developers and administrators, will learn how to identify performance issues, troubleshoot the system in a holistic fashion, and properly prioritize tuning efforts to attain the best system performance possible. Author

Dmitri Korotkevitch, Microsoft Data Platform MVP and Microsoft Certified Master (MCM), explains the interdependencies between SQL Server database components. You'll learn how to quickly diagnose your system and discover the root cause of any issue. Techniques in this book are compatible with all versions of SQL Server and cover both on-premises and cloud-based SQL Server installations. Discover how performance issues present themselves in SQL Server Learn about SQL Server diagnostic tools, methods, and technologies Perform health checks on SQL Server installations Learn the dependencies between SQL Server components Tune SQL Server to improve performance and reduce bottlenecks Detect poorly optimized queries and inefficiencies in query execution plans Find inefficient indexes and common database design issues Use these techniques with Microsoft Azure SQL databases, Azure SQL Managed Instances, and Amazon RDS for SQL Server

SQL Server 2017 Administration Inside Out William Assaf 2018-02-26 Conquer SQL Server 2017 administration—from the inside out Dive into SQL Server 2017 administration—and really put your SQL Server DBA expertise to work. This supremely organized reference packs hundreds of timesaving solutions, tips, and workarounds—all you need to plan, implement, manage, and secure SQL Server 2017 in any production environment: on-premises, cloud, or hybrid. Four SQL Server experts offer a complete tour of DBA capabilities available in SQL Server 2017 Database Engine, SQL Server Data Tools, SQL Server Management Studio, and via PowerShell. Discover how experts tackle today’s essential tasks—and challenge yourself to new levels of mastery. • Install, customize, and use SQL Server 2017’s key administration and development tools • Manage memory, storage, clustering, virtualization, and other components • Architect and implement database infrastructure, including IaaS, Azure SQL, and hybrid cloud configurations • Provision SQL Server and Azure SQL databases • Secure SQL Server via encryption, row-level security, and data masking • Safeguard Azure SQL databases using platform threat protection, firewalling, and auditing • Establish SQL Server IaaS network security groups and user-defined routes • Administer SQL Server user security and permissions • Efficiently design tables using keys, data types, columns, partitioning, and views • Utilize BLOBs and external, temporal, and memory-optimized tables • Master powerful optimization techniques involving concurrency, indexing, parallelism, and execution plans • Plan, deploy, and perform disaster recovery in traditional, cloud, and hybrid environments For Experienced SQL Server Administrators and Other Database Professionals • Your role: Intermediate-to-advanced level SQL Server database administrator, architect, developer, or performance tuning expert • Prerequisites: Basic understanding of database administration procedures

The Definitive Guide to DAX Alberto Ferrari 2015-10-14 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

Troubleshooting SQL Server Jonathan Kehayias 2011 This book describes, diagnoses, and solves the most common problems with SQL Server 2005, 2008, and 2008 R2. The authors explain a basic approach to troubleshooting and the essential tools. They explore areas in which problems arise with regularity: high disk I/O (RAID misconfiguration, inadequate I/O throughput, poor workload distribution, SAN issues, disk partition misalignment); high CPU usage (insufficient memory, poorly written queries, inadequate indexing, inappropriate configuration option settings); memory mismanagement; missing indexes; blocking (caused mainly by poorly designed databases that lack proper keys and indexing, and applications that apply needlessly restrictive transaction isolation levels); deadlocking (Bookmark Lookup, Serializable Range Scan, Cascading Constraint); full transaction logs (lack of log backups, hefty index maintenance operations, long running transaction, problems with replication and mirroring environments); and accidentally-lost data. Finally, the authors discuss diagnosing tools such as the Performance Monitor, Dynamic Management Views, and server-side tracing. --

High Performance SQL Server Benjamin Nevarez 2021-01-23 Design and configure SQL Server instances and databases in support of high-throughput, mission-critical applications providing consistent response times in the face of variations in numbers of users and query volumes. In this new edition, with over 100 pages of additional content, every original chapter has been updated for SQL Server 2019, and the book also includes two new chapters covering SQL Server on Linux and Intelligent Query Processing. This book shows you how to configure SQL Server and design your databases to support a given instance and workload. You will learn advanced configuration options, in-memory technologies, storage and disk configuration, and more, all aimed toward enabling your desired application performance and throughput. Configuration doesn’t stop with implementation. Workloads change over time, and other impediments can arise to thwart desired performance. High Performance SQL Server covers monitoring and troubleshooting to aid you in detecting and fixing production performance problems and minimizing application outages. You will learn about a variety of tools, ranging from the traditional wait analysis methodology to the query store or indexing, and you will learn how improving performance is an iterative process. This book is an excellent complement to query performance tuning books and provides the other half of what you need to know by focusing on configuring the instances on which mission-critical queries are executed. What You Will Learn Understand SQL Server's database engine and how it processes queries Configure instances in support of high-throughput applications Provide consistent response times to varying user numbers and query volumes Design databases for high-throughput applications with focus on performance Record performance baselines and monitor SQL Server instances against them Troubleshot and fix performance problems Who This Book Is For SQL Server database administrators, developers, and data architects. The book is also of use to system administrators who are managing and are responsible for the physical servers on which SQL Server instances are run.

SQL Server 2022 Query Performance Tuning Grant Fritchey 2022-11-20 Troubleshoot slow-performing queries and make them run faster. Database administrators and SQL developers are constantly under pressure to provide more speed. This new edition has been redesigned and rewritten from scratch based on the last 15 years of learning, knowledge, and experience accumulated by the author. The book Includes expanded information on using extended events, automatic execution plan correction, and other advanced features now available in SQL Server. These modern features are covered while still providing the necessary fundamentals to better understand how statistics and indexes affect query performance. The book gives you knowledge and tools to help you identify poorly performing queries and understand the possible causes of that poor performance. The book also provides mechanisms for resolving the issues identified, whether on-premises, in containers, or on cloud

platform providers. You'll learn about key fundamentals, such as statistics, data distribution, cardinality, and parameter sniffing. You'll learn to analyze and design your indexes and your queries using best practices that ward off performance problems before they occur. You'll also learn to use important modern features, such as Query Store to manage and control execution plans, the automated performance tuning feature set, and memory-optimized OLTP tables and procedures. You will be able to troubleshoot in a systematic way. Query tuning doesn't have to be difficult. This book helps you to make it much easier. What You Will Learn Use Query Store to understand and easily change query performance Recognize and eliminate bottlenecks leading to slow performance Tune queries whether on-premises, in containers, or on cloud platform providers Implement best practices in T-SQL to minimize performance risk Design in the performance that you need through careful query and index design Understand how built-in, automatic tuning can assist your performance enhancement efforts Protect query performance during upgrades to the newer versions of SQL Server Who This Book Is For Developers and database administrators with responsibility for query performance in SQL Server environments, and anyone responsible for writing or creating T-SQL queries and in need of insight into bottlenecks (including how to identify them, understand them, and eliminate them)

Expert Performance Indexing in SQL Server 2019 Jason Strate 2019-11-28 Take a deep dive into perhaps the single most important facet of good performance: indexes, and how to best use them. Recent updates to SQL Server have made it possible to create indexes in situations that in the past would have prevented their use. Other improvements covered in this book include new dynamic management views, the ability to pause and resume index maintenance, and the ability to more easily recover from failures during index creation and maintenance operations. This new edition also brings new content around the indexing of columnstore and in-memory tables, showing how these new types of tables and the queries that execute against them can also benefit from good indexing practices. The book begins with explanations of the types of indexes and how they are stored in databases. Moving deeper into the topic, and further into the book, you will look at the statistics that are accumulated both by indexes and on indexes. You will better understand what indexes are doing in the database and what can be done to mitigate and improve their effect on performance. You will get a look at the Index Advisor now available in Azure SQL Database, and learn how to review and maintain the health of your indexes. The final chapters present a guided tour through a number of scenarios showing approaches you can take to investigate, mitigate, and improve the performance of your database. What You Will Learn Properly index row store, columnstore, and in-memory tablesReview statistics to understand indexing choices made by the optimizerApply indexing strategies such as covering indexes, included columns, and index intersectionsRecognize and remove unnecessary indexesDesign effective indexes for full-text, spatial, and XML data typesManage the big picture: Encompass all indexes in a database, and all database instances on a server Who This Book Is For Database administrators and developers who are ready to lift the performance of their database environment by thoughtfully building indexes to speed up queries that matter the most and make a difference to the business

Learn Ethical Hacking from Scratch Zaid Sabih 2018-07-31 Learn how to hack systems like black hat hackers and secure them like security experts Key Features Understand how computer systems work and their vulnerabilities Exploit weaknesses and hack into machines to test their security Learn how to secure systems from hackers Book Description This book starts with the basics of ethical hacking, how to practice hacking safely and legally, and how to install and interact with Kali Linux and the Linux terminal. You will explore network hacking, where you will see how to test the security of wired and wireless networks. You'll also learn how to crack the password for any Wi-Fi network (whether it uses WEP, WPA, or WPA2) and spy on the connected devices. Moving on, you will discover how to gain access to remote computer systems using client-side and server-side attacks. You will also

get the hang of post-exploitation techniques, including remotely controlling and interacting with the systems that you compromised. Towards the end of the book, you will be able to pick up web application hacking techniques. You'll see how to discover, exploit, and prevent a number of website vulnerabilities, such as XSS and SQL injections. The attacks covered are practical techniques that work against real systems and are purely for educational purposes. At the end of each section, you will learn how to detect, prevent, and secure systems from these attacks. What you will learn Understand ethical hacking and the different fields and types of hackers Set up a penetration testing lab to practice safe and legal hacking Explore Linux basics, commands, and how to interact with the terminal Access password-protected networks and spy on connected clients Use server and client-side attacks to hack and control remote computers Control a hacked system remotely and use it to hack other systems Discover, exploit, and prevent a number of web application vulnerabilities such as XSS and SQL injections Who this book is for Learning Ethical Hacking from Scratch is for anyone interested in learning how to hack and test the security of systems like professional hackers and security experts.

SQL Server Execution Plans Grant Fritchey 2012 Every day, out in the various online forums devoted to SQL Server, and on Twitter, the same types of questions come up repeatedly: Why is this query running slowly? Why is SQL Server ignoring my index? Why does this query run quickly sometimes and slowly at others? My response is the same in each case: have you looked at the execution plan? An execution plan describes what's going on behind the scenes when SQL Server executes a query. It shows how the query optimizer joined the data from the various tables defined in the query, which indexes it used, if any, how it performed any aggregations or sorting, and much more. It also estimates the cost of all of these operations, in terms of the relative load placed on the system. Every Database Administrator, developer, report writer, and anyone else who writes T-SQL to access SQL Server data, must understand how to read and interpret execution plans.My book leads you right from the basics of capturing plans, through how to interrupt them in their various forms, graphical or XML, and then how to use the information you find there to diagnose the most common causes of poor query performance, and so optimize your SQL queries, and improve your indexing strategy.

Pro SQL Server Internals Dmitri Korotkevitch 2016-11-29 Improve your ability to develop, manage, and troubleshoot SQL Server solutions by learning how different components work “under the hood,” and how they communicate with each other. The detailed knowledge helps in implementing and maintaining high-throughput databases critical to your business and its customers. You’ll learn how to identify the root cause of each problem and understand how different design and implementation decisions affect performance of your systems. New in this second edition is coverage of SQL Server 2016 Internals, including In-Memory OLTP, columnstore enhancements, Operational Analytics support, Query Store, JSON, temporal tables, stretch databases, security features, and other improvements in the new SQL Server version. The knowledge also can be applied to Microsoft Azure SQL Databases that share the same code with SQL Server 2016. Pro SQL Server Internals is a book for developers and database administrators, and it covers multiple SQL Server versions starting with SQL Server 2005 and going all the way up to the recently released SQL Server 2016. The book provides a solid road map for understanding the depth and power of the SQL Server database server and teaches how to get the most from the platform and keep your databases running at the level needed to support your business. The book: • Provides detailed knowledge of new SQL Server 2016 features and enhancements • Includes revamped coverage of columnstore indexes and In-Memory OLTP • Covers indexing and transaction strategies • Shows how various database objects and technologies are implemented internally, and when they should or should not be used • Demonstrates how SQL Server executes queries and works with data and transaction log What You Will Learn Design and develop database solutions with SQL Server. Troubleshoot design, concurrency, and performance issues. Choose the right database objects

and technologies for the job. Reduce costs and improve availability and manageability. Design disaster recovery and high-availability strategies. Improve performance of OLTP and data warehouse systems through in-memory OLTP and Columnstore indexes. Who This Book Is For Developers and database administrators who want to design, develop, and maintain systems in a way that gets the most from SQL Server. This book is an excellent choice for people who prefer to understand and fix the root cause of a problem rather than applying a 'band aid' to it.

SQL Server 2019 Administrator's Guide Marek Chmel 2020-09-11 Use Microsoft SQL Server 2019 to implement, administer, and secure a robust database solution that is disaster-proof and highly available Key FeaturesExplore new features of SQL Server 2019 to set up, administer, and maintain your database solution successfullyDevelop a dynamic SQL Server environment and streamline big data pipelinesDiscover best practices for fixing performance issues, database access management, replication, and securityBook Description SQL Server is one of the most popular relational database management systems developed by Microsoft. This second edition of the SQL Server Administrator's Guide will not only teach you how to administer an enterprise database, but also help you become proficient at managing and keeping the database available, secure, and stable. You'll start by learning how to set up your SQL Server and configure new and existing environments for optimal use. The book then takes you through designing aspects and delves into performance tuning by showing you how to use indexes effectively. You'll understand certain choices that need to be made about backups, implement security policy, and discover how to keep your environment healthy. Tools available for monitoring and managing a SQL Server database, including automating health reviews, performance checks, and much more, will also be discussed in detail. As you advance, the book covers essential topics such as migration, upgrading, and consolidation, along with the techniques that will help you when things go wrong. Once you've got to grips with integration with Azure and streamlining big data pipelines, you'll learn best practices from industry experts for maintaining a highly reliable database solution. Whether you are an administrator or are looking to get started with database administration, this SQL Server book will help you develop the skills you need to successfully create, design, and deploy database solutions. What you will learnDiscover SQL Server 2019's new features and how to implement themFix performance issues by optimizing queries and making use of indexesDesign and use an optimal database management strategyCombine SQL Server 2019 with Azure and manage your solution using various automation techniquesImplement efficient backup and recovery techniques in line with security policiesGet to grips with migrating, upgrading, and consolidating with SQL ServerSet up an AlwaysOn-enabled stable and fast SQL Server 2019 environmentUnderstand how to work with Big Data on SQL Server environmentsWho this book is for This book is for database administrators, database developers, and anyone who wants to administer large and multiple databases single-handedly using Microsoft's SQL Server 2019. Basic awareness of database concepts and experience with previous SQL Server versions is required.

Microsoft Azure SQL Database Step by Step Leonard Lobel 2014 Your hands-on guide to Azure SQL Database fundamentals Expand your expertise—and teach yourself the fundamentals of Windows Azure SQL Database. If you have previous programming experience but are new to Azure, this tutorial delivers the step-by-step guidance and coding exercises you need to master core topics and techniques. Discover how to: Perform Azure setup and configuration Explore design and security considerations Use programming and reporting services Migrate data Backup and sync data Work with scalability and high performance Understand the differences between SQL Server and Windows Azure SQL Database

Microsoft SQL Server 2012 High-Performance T-SQL Using Window Functions Itzik Ben-Gan 2012-04-15 Apply powerful window functions in T-SQL—and increase the performance and speed of

your queries Optimize your queries—and obtain simple and elegant solutions to a variety of problems—using window functions in Transact-SQL. Led by T-SQL expert Itzik Ben-Gan, you'll learn how to apply calculations against sets of rows in a flexible, clear, and efficient manner. Ideal whether you're a database administrator or developer, this practical guide demonstrates ways to use more than a dozen T-SQL querying solutions to address common business tasks. Discover how to: Go beyond traditional query approaches to express set calculations more efficiently Delve into ordered set functions such as rank, distribution, and offset Implement hypothetical set and inverse distribution functions in standard SQL Use strategies for improving sequencing, paging, filtering, and pivoting Increase query speed using partitioning, ordering, and coverage indexing Apply new optimization iterators such as Window Spool Handle common issues such as running totals, intervals, medians, and gaps

Learn T-SQL Querying Pedro Lopes 2019-05-03 Troubleshoot query performance issues, identify anti-patterns in code, and write efficient T-SQL queries Key FeaturesDiscover T-SQL functionalities and services that help you interact with relational databasesUnderstand the roles, tasks and responsibilities of a T-SQL developer Explore solutions for carrying out database querying tasks, database administration, and troubleshootingBook Description Transact-SQL (T-SQL) is Microsoft's proprietary extension to the SQL language that is used with Microsoft SQL Server and Azure SQL Database. This book will be a useful guide to learning the art of writing efficient T-SQL code in modern SQL Server versions, as well as the Azure SQL Database. The book will get you started with query processing fundamentals to help you write powerful, performant T-SQL queries. You will then focus on query execution plans and learn how to leverage them for troubleshooting. In the later chapters, you will learn how to identify various T-SQL patterns and anti-patterns. This will help you analyze execution plans to gain insights into current performance, and determine whether or not a query is scalable. You will also learn to build diagnostic queries using dynamic management views (DMVs) and dynamic management functions (DMFs) to address various challenges in T-SQL execution. Next, you will study how to leverage the built-in tools of SQL Server to shorten the time taken to address query performance and scalability issues. In the concluding chapters, the book will guide you through implementing various features, such as Extended Events, Query Store, and Query Tuning Assistant using hands-on examples. By the end of this book, you will have the skills to determine query performance bottlenecks, avoid pitfalls, and discover the anti-patterns in use. Foreword by Conor Cunningham, Partner Architect – SQL Server and Azure SQL – Microsoft What you will learnUse Query Store to understand and easily change query performanceRecognize and eliminate bottlenecks that lead to slow performanceDeploy quick fixes and long-term solutions to improve query performanceImplement best practices to minimize performance risk using T-SQLAchieve optimal performance by ensuring careful query and index designUse the latest performance optimization features in SQL Server 2017 and SQL Server 2019Protect query performance during upgrades to newer versions of SQL ServerWho this book is for This book is for database administrators, database developers, data analysts, data scientists, and T-SQL practitioners who want to get started with writing T-SQL code and troubleshooting query performance issues, through the help of practical examples. Previous knowledge of T-SQL querying is not required to get started on this book.

Microsoft SQL Server 2012 Internals Kalen Delaney 2013 Dive deep inside the architecture of SQL Server 2012 Explore the core engine of Microsoft SQL Server 2012--and put that practical knowledge to work. Led by a team of SQL Server experts, you'll learn the skills you need to exploit key architectural features. Go behind the scenes to understand internal operations for creating, expanding, shrinking, and moving databases--whether you're a database developer, architect, or administrator. Discover how to: Dig into SQL Server 2012 architecture and configuration Use the right recovery model and control

transaction logging Reduce query execution time through proper index design Track events, from triggers to the Extended Event Engine Examine internal structures with database console commands Transcend row-size limitations with special storage capabilities Choose the right transaction isolation level and concurrency model Take control over query plan caching and reuse

Learning SQL Alan Beaulieu 2009-04-11 Updated for the latest database management systems -- including MySQL 6.0, Oracle 11g, and Microsoft's SQL Server 2008 -- this introductory guide will get you up and running with SQL quickly. Whether you need to write database applications, perform administrative tasks, or generate reports, Learning SQL, Second Edition, will help you easily master all the SQL fundamentals. Each chapter presents a self-contained lesson on a key SQL concept or technique, with numerous illustrations and annotated examples. Exercises at the end of each chapter let you practice the skills you learn. With this book, you will: Move quickly through SQL basics and learn several advanced features Use SQL data statements to generate, manipulate, and retrieve data Create database objects, such as tables, indexes, and constraints, using SQL schema statements Learn how data sets interact with queries, and understand the importance of subqueries Convert and manipulate data with SQL's built-in functions, and use conditional logic in data statements Knowledge of SQL is a must for interacting with data. With Learning SQL, you'll quickly learn how to put the power and flexibility of this language to work.

SQL Performance Explained Markus Winand 2012

SQL Server Advanced Troubleshooting and Performance Tuning Dmitri Korotkevitch 2022-05-17 This book provides a comprehensive overview on best practices for troubleshooting and performance tuning in SQL Server. It reviews how to identify performance issues, how to troubleshoot the system in a holistic fashion, and how to properly prioritize tuning efforts in order to induce the best system performance possible. The book also discusses interdependencies between database components, while spotlighting ways to avoid the bottlenecks that can be triggered by those dependencies. The troubleshooting and performance tuning techniques presented in the book are compatible with any version of SQL Server. They cover both on-premise and Cloud-based SQL Server installations, including Microsoft Azure SQL Databases and Amazon SQL Server RDS. Reflecting the approaches used by many high-end SQL Server consultants, SQL Server Advanced Troubleshooting and Performance Tuning is a valuable resource that will help readers master troubleshooting and performance tuning skills and get the best performance out of SQL Server.

SQL Server 2019 Revealed Bob Ward 2019-10-18 Get up to speed on the game-changing developments in SQL Server 2019. No longer just a database engine, SQL Server 2019 is cutting edge with support for machine learning (ML), big data analytics, Linux, containers, Kubernetes, Java, and data virtualization to Azure. This is not a book on traditional database administration for SQL Server. It focuses on all that is new for one of the most successful modernized data platforms in the industry. It is a book for data professionals who already know the fundamentals of SQL Server and want to up their game by building their skills in some of the hottest new areas in technology. SQL Server 2019 Revealed begins with a look at the project's team goal to integrate the world of big data with SQL Server into a major product release. The book then dives into the details of key new capabilities in SQL Server 2019 using a “learn by example” approach for Intelligent Performance, security, mission-critical availability, and features for the modern developer. Also covered are enhancements to SQL Server 2019 for Linux and gain a comprehensive look at SQL Server using containers and Kubernetes clusters. The book concludes by showing you how to virtualize your data access with Polybase to Oracle, MongoDB, Hadoop, and Azure, allowing you to reduce the need for expensive extract, transform, and load (ETL)

applications. You will then learn how to take your knowledge of containers, Kubernetes, and Polybase to build a comprehensive solution called Big Data Clusters, which is a marquee feature of 2019. You will also learn how to gain access to Spark, SQL Server, and HDFS to build intelligence over your own data lake and deploy end-to-end machine learning applications. What You Will LearnImplement Big Data Clusters with SQL Server, Spark, and HDFS Create a Data Hub with connections to Oracle, Azure, Hadoop, and other sourcesCombine SQL and Spark to build a machine learning platform for AI applicationsBoost your performance with no application changes using Intelligent PerformanceIncrease security of your SQL Server through Secure Enclaves and Data ClassificationMaximize database uptime through online indexing and Accelerated Database RecoveryBuild new modern applications with Graph, ML Services, and T-SQL Extensibility with JavaImprove your ability to deploy SQL Server on Linux Gain in-depth knowledge to run SQL Server with containers and KubernetesKnow all the new database engine features for performance, usability, and diagnosticsUse the latest tools and methods to migrate your database to SQL Server 2019Apply your knowledge of SQL Server 2019 to Azure Who This Book Is For IT professionals and developers who understand the fundamentals of SQL Server and wish to focus on learning about the new, modern capabilities of SQL Server 2019. The book is for those who want to learn about SQL Server 2019 and the new Big Data Clusters and AI feature set, support for machine learning and Java, how to run SQL Server with containers and Kubernetes, and increased capabilities around Intelligent Performance, advanced security, and high availability.

Pro T-SQL 2019 Elizabeth Noble 2020-02-12 Design and write simple and efficient T-SQL code in SQL Server 2019 and beyond. Writing T-SQL that pulls back correct results can be challenging. This book provides the help you need in writing T-SQL that performs fast and is easy to maintain. You also will learn how to implement version control, testing, and deployment strategies. Hands-on examples show modern T-SQL practices and provide straightforward explanations. Attention is given to selecting the right data types and objects when designing T-SQL solutions. Author Elizabeth Noble teaches you how to improve your T-SQL performance through good design practices that benefit programmers and ultimately the users of the applications. You will know the common pitfalls of writing T-SQL and how to avoid those pitfalls going forward. What You Will LearnChoose correct data types and database objects when designing T-SQL Write T-SQL that searches data efficiently and uses hardware effectively Implement source control and testing methods to streamline the deployment process Design T-SQL that can be enhanced or modified with less effort Plan for long-term data management and storage Who This Book Is For Database developers who want to improve the efficiency of their applications, and developers who want to solve complex query and data problems more easily by writing T-SQL that performs well, brings back correct results, and is easy for other developers to understand and maintain

Pro SQL Server 2019 Administration Peter A. Carter 2019-10-18 Use this comprehensive guide for the SQL Server DBA, covering all that practicing database administrators need to know to get their daily work done. Updated for SQL Server 2019, this edition includes coverage of new features such as Memory-optimized TempDB Metadata, and Always Encrypted with Secure Enclaves. Other new content includes coverage of Query Store, resumable index operations, installation on Linux, and containerized SQL. Pro SQL Server 2019 Administration takes DBAs on a journey that begins with planning their SQL Server deployment and runs through installing and configuring the instance, administering and optimizing database objects, and ensuring that data is secure and highly available. Finally, readers will learn how to perform advanced maintenance and tuning techniques. This book teaches you to make the most of new SQL Server 2019 functionality, including Data Discovery and Classification. The book promotes best-practice installation, shows how to configure for scalability and high workloads, and demonstrates the gamut of database-level maintenance tasks such as index maintenance, database consistency checks, and table optimizations. What You Will LearnInstall and configure SQL Server on

Windows through the GUI and with PowerShell Install and configure SQL Server on Linux and in ContainersOptimize tables through in-memory OLTP, table partitioning, and the creation of indexes Secure and encrypt data to protect against embarrassing data breaches Ensure 24x7x365 access through high-availability and disaster recovery features Back up your data to ensure against loss, and recover data when needed Perform routine maintenance tasks such as database consistency checks Troubleshoot and solve performance problems in SQL queries and in the database engine Who This Book Is For SQL Server DBAs who manage on-premise installations of SQL Server. This book is also useful for DBAs who wish to learn advanced features such as Query Store, Extended Events, Distributed Replay, and Policy-Based Management, or those who need to install SQL Server in a variety of environments.

High Performance SQL Server Benjamin Nevarez 2016-11-21 Design and configure SQL Server instances and databases in support of high-throughput applications that are mission-critical and provide consistent response times in the face of variations in user numbers and query volumes. Learn to configure SQL Server and design your databases to support a given instance and workload. You'll learn advanced configuration options, in-memory technologies, storage and disk configuration, and more, all toward enabling your desired application performance and throughput. Configuration doesn't stop with implementation. Workloads change over time, and other impediments can arise to thwart desired performance. High Performance SQL Server covers monitoring and troubleshooting to aid in detecting and fixing production performance problems and minimizing application outages. You'll learn a variety of tools, ranging from the traditional wait analysis methodology to the new query store, and you'll learn how improving performance is really an iterative process. High Performance SQL Server is based on SQL Server 2016, although most of its content can be applied to prior versions of the product. This book is an excellent complement to performance tuning books focusing on SQL queries, and provides the other half of what you need to know by focusing on configuring the instances on which mission-critical queries are executed. Covers SQL Server instance-configuration for optimal performance Helps in implementing SQL Server in-memory technologies Provides guidance toward monitoring and ongoing diagnostics What You Will Learn Understand SQL Server's database engine and how it processes queries Configure instances in support of high-throughput applications Provide consistent response times to varying user numbers and query volumes Design databases for high-throughput applications with focus on performance Record performance baselines and monitor SQL Server instances against them Troubleshot and fix performance problems Who This Book Is For SQL Server database administrators, developers, and data architects. The book is also of use to system administrators who are managing and are responsible for the physical servers on which SQL Server instances are run.

SQL Server 2019 Administration Inside Out Randolph West 2020-03-11 Conquer SQL Server 2019 administration–from the inside out Dive into SQL Server 2019 administration–and really put your SQL Server DBA expertise to work. This supremely organized reference packs hundreds of timesaving solutions, tips, and workarounds–all you need to plan, implement, manage, and secure SQL Server 2019 in any production environment: on-premises, cloud, or hybrid. Six experts thoroughly tour DBA capabilities available in SQL Server 2019 Database Engine, SQL Server Data Tools, SQL Server Management Studio, PowerShell, and Azure Portal. You'll find extensive new coverage of Azure SQL, big data clusters, PolyBase, data protection, automation, and more. Discover how experts tackle today's essential tasks–and challenge yourself to new levels of mastery. Explore SQL Server 2019's toolset, including the improved SQL Server Management Studio, Azure Data Studio, and Configuration Manager Design, implement, manage, and govern on-premises, hybrid, or Azure database infrastructures Install and configure SQL Server on Windows and Linux Master modern maintenance and monitoring with extended events, Resource Governor, and the SQL Assessment API Automate tasks

with maintenance plans, PowerShell, Policy-Based Management, and more Plan and manage data recovery, including hybrid backup/restore, Azure SQL Database recovery, and geo-replication Use availability groups for high availability and disaster recovery Protect data with Transparent Data Encryption, Always Encrypted, new Certificate Management capabilities, and other advances Optimize databases with SQL Server 2019's advanced performance and indexing features Provision and operate Azure SQL Database and its managed instances Move SQL Server workloads to Azure: planning, testing, migration, and post-migration

The Definitive Guide to SQLite Grant Allen 2011-01-28 Outside of the world of enterprise computing, there is one database that enables a huge range of software and hardware to flex relational database capabilities, without the baggage and cost of traditional database management systems. That database is SQLite—an embeddable database with an amazingly small footprint, yet able to handle databases of enormous size. SQLite comes equipped with an array of powerful features available through a host of programming and development environments. It is supported by languages such as C, Java, Perl, PHP, Python, Ruby, TCL, and more. The Definitive Guide to SQLite, Second Edition is devoted to complete coverage of the latest version of this powerful database. It offers a thorough overview of SQLite's capabilities and APIs. The book also uses SQLite as the basis for helping newcomers make their first foray into database development. In only a short time you can be writing programs as diverse as a server-side browser plug-in or the next great iPhone or Android application! Learn about SQLite extensions for C, Java, Perl, PHP, Python, Ruby, and Tcl. Get solid coverage of SQLite internals. Explore developing iOS (iPhone) and Android applications with SQLite. SQLite is the solution chosen for thousands of products around the world, from mobile phones and GPS devices to set-top boxes and web browsers. You almost certainly use SQLite every day without even realizing it!

T-SQL Querying Itzik Ben-Gan 2015-02-17 T-SQL insiders help you tackle your toughest queries and query-tuning problems Squeeze maximum performance and efficiency from every T-SQL query you write or tune. Four leading experts take an in-depth look at T-SQL's internal architecture and offer advanced practical techniques for optimizing response time and resource usage. Emphasizing a correct understanding of the language and its foundations, the authors present unique solutions they have spent years developing and refining. All code and techniques are fully updated to reflect new T-SQL enhancements in Microsoft SQL Server 2014 and SQL Server 2012. Write faster, more efficient T-SQL code: Move from procedural programming to the language of sets and logic Master an efficient top-down tuning methodology Assess algorithmic complexity to predict performance Compare data aggregation techniques, including new grouping sets Efficiently perform data-analysis calculations Make the most of T-SQL's optimized bulk import tools Avoid date/time pitfalls that lead to buggy, poorly performing code Create optimized BI statistical queries without additional software Use programmable objects to accelerate queries Unlock major performance improvements with In-Memory OLTP Master useful and elegant approaches to manipulating graphs About This Book For experienced T-SQL practitioners Includes coverage updated from Inside Microsoft SQL Server 2008 T-SQL Querying and Inside Microsoft SQL Server 2008 T-SQL Programming Valuable to developers, DBAs, BI professionals, and data scientists Covers many MCSE 70-464 and MCSA/MCSE 70-461 exam topics

Query Store for SQL Server 2019 Tracy Boggiano 2019-12-10 Apply the new Query Store feature to identify and fix poorly performing queries in SQL Server. Query Store is an important and recent feature in SQL Server that provides insight into the details of query execution and how that execution has changed over time. Query Store helps to identify queries that aren't performing well, or that have regressed in their performance. Query Store provides detailed information such as wait stats that you need to resolve root causes, and it allows you to force the use of a known good execution plan. With

SQL Server 2017 and later you can automate the correction of regressions in performance. Query Store for SQL Server 2019 helps you protect your database's performance during upgrades of applications or version of SQL Server. The book provides fundamental information on how Query Store works and best practices for implementation and use. You will learn to run and interpret built-in reports, configure automatic plan correction, and troubleshoot queries using Query Store when needed. Query Store for SQL Server 2019 helps you master Query Store and bring value to your organization through consistent query execution times and automate correction of regressions. What You'll Learn Apply best practices in implementing Query Store on production servers Detect and correct regressions in query performance Lower the risk of performance degradation following an upgrade Use tools and techniques to get the most from Query Store Automate regression correction and other uses of Query Store Who This Book Is For SQL Server developers and administrators responsible for query performance on SQL Server. Anyone responsible for identifying poorly performing queries will be able to use Query Store to find these queries and resolve the underlying issues.

Expert T-SQL Window Functions in SQL Server 2019 Kathi Kellenberger 2019-10-21 Become an expert who can use window functions to solve T-SQL query problems. Replace slow cursors and self-joins with queries that are easy to write and perform better. This new edition provides expanded examples, including a chapter from the world of sports, and covers the latest performance enhancements through SQL Server 2019. Window functions are useful in analytics and business intelligence reporting. They came into full blossom with SQL Server 2012, yet they are not as well known and used as often as they ought to be. This group of functions is one of the most notable developments in SQL, and this book shows how every developer and DBA can benefit from their expressive power in solving day-to-day business problems. Once you begin using window functions, such as ROW_NUMBER and LAG, you will discover many ways to use them. You will approach SQL Server queries in a different way, thinking about sets of data instead of individual rows. Your queries will run faster, be easier to write, and easier to deconstruct, maintain, and enhance in the future. Just knowing and using these functions is not enough. You also need to understand how to tune the queries. Expert T-SQL Window Functions in SQL Server clearly explains how to get the best performance. The book also covers the rare cases when older techniques are the best bet. What You Will LearnSolve complex query problems without cumbersome self-joins that run slowly and are difficult to read Create sliding windows in a result set for computing such as running totals and moving averages Return aggregate and detail data simultaneously from the same SELECT statement Compute lag and lead and other values that access data from multiple rows in a result set Understand the OVER clause syntax and how to control the window Avoid framing errors that can lead to unexpected results Who This Book Is For Anyone who writes T-SQL queries, including database administrators, developers, business analysts, and data scientists. Before reading this book, you should understand how to join tables, write WHERE clauses, and build aggregate queries.

Practical SQL Anthony DeBarros 2018-05-01 Practical SQL is an approachable and fast-paced guide to SQL (Structured Query Language), the standard programming language for defining, organizing, and exploring data in relational databases. The book focuses on using SQL to find the story your data tells, with the popular open-source database PostgreSQL and the pgAdmin interface as its primary tools. You'll first cover the fundamentals of databases and the SQL language, then build skills by analyzing data from the U.S. Census and other federal and state government agencies. With exercises and real-world examples in each chapter, this book will teach even those who have never programmed before all the tools necessary to build powerful databases and access information quickly and efficiently. You'll learn how to: - Create databases and related tables using your own data - Define the right data types for your information - Aggregate, sort, and filter data to find patterns - Use basic math and advanced

statistical functions - Identify errors in data and clean them up - Import and export data using delimited text files - Write queries for geographic information systems (GIS) - Create advanced queries and automate tasks Learning SQL doesn't have to be dry and complicated. Practical SQL delivers clear examples with an easy-to-follow approach to teach you the tools you need to build and manage your own databases. This book uses PostgreSQL, but the SQL syntax is applicable to many database applications, including Microsoft SQL Server and MySQL.

Microsoft SQL Server 2014 Unleashed Ray Rankins 2015-05-15 The industry's most complete, useful, and up-to-date guide to SQL Server 2014. You'll find start-to-finish coverage of SQL Server's core database server and management capabilities: all the real-world information, tips, guidelines, and examples you'll need to install, monitor, maintain, and optimize the most complex database environments. The provided examples and sample code provide plenty of hands-on opportunities to learn more about SQL Server and create your own viable solutions. Four leading SQL Server experts present deep practical insights for administering SQL Server, analyzing and optimizing queries, implementing data warehouses, ensuring high availability, tuning performance, and much more. You will benefit from their behind-the-scenes look into SQL Server, showing what goes on behind the various wizards and GUI-based tools. You'll learn how to use the underlying SQL commands to fully unlock the power and capabilities of SQL Server. Writing for all intermediate-to-advanced-level SQL Server professionals, the authors draw on immense production experience with SQL Server. Throughout, they focus on successfully applying SQL Server 2014's most powerful capabilities and its newest tools and features. Detailed information on how to… Understand SQL Server 2014's new features and each edition's capabilities and licensing Install, upgrade to, and configure SQL Server 2014 for better performance and easier management Streamline and automate key administration tasks with Smart Admin Leverage powerful new backup/restore options: flexible backup to URL, Managed Backup to Windows Azure, and encrypted backups Strengthen security with new features for enforcing "least privilege" Improve performance with updateable columnstore indexes, Delayed Durability, and other enhancements Execute queries and business logic more efficiently with memoryoptimized tables, buffer pool extension, and natively-compiled stored procedures Control workloads and Disk I/O with the Resource Governor Deploy AlwaysOn Availability Groups and Failover Cluster Instances to achieve enterprise-class availability and disaster recovery Apply new Business Intelligence improvements in Master Data Services, data quality, and Parallel Data Warehouse

Expert Cube Development with SSAS Multidimensional Models Chris Webb 2014-02-24 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.

SQL Server Interview Questions and Answers Vinod Kumar 2021-03 As representatives from the IT community, all of us have had our own experiences of attending interviews - clearing or close to clearing and sometimes with tons of questions and doubts failing miserably. These stories are in the most pleasant or not so pleasant memories of our mind and we will assure you this book will kindle those memories for sure. We have taken tons of interviews and most of the interviews are not revolving around how deep technical and internals you know about the subject - but it revolves around how good you are with the basics.To clear an interview, one doesn't need to know inside-out of a subject, and subjects like "SQL Server" so vast that every single day we learn something new with this product, and even a complete lifetime will fly off if we keep doing this. Again, the various roles one can get into for

products like SQL Server are from Database Developer, Database Modelers, Database Architect, Database Administrator and many more. Hence, this book is geared towards demystifying and a refresher for memories on the fundamentals which sometimes are the most important things to clear any type of interview for any role. Some of the concepts discussed are generic and are not tied to any specific version of SQL Server, but most of it the new features introduced with SQL Server have been included in this book.This book is not a shortcut or a sure to crack interview guide but this book gets you prepared in an organized manner. Let us also assure you this is neither a completely comprehensive guide but surely is a great starter nevertheless. Use this to guide you and be mentally prepared for the big day. When faced with this big day, we get overwhelmed and confused about where to start our preparation. And this book is just that secret recipe in your arsenal to get geared up. Sometimes these basics will help you narrow to a solution quickly when given a scenario.Now this book's flow is "Question & Answer" mode from start till the end to help you grasp the concepts faster and to the point. Once you get an understanding of concepts, then if we are twisted with the concept in a scenario it becomes easy to solve them. Most companies have a typical way to do interviews which are based on the scenario as per their environment and these are just combinations of the concepts to fit their need and SLA.Though each of these chapters is bucketed for convenience we highly recommend reading each of the sections nevertheless irrespective of the roles you might be doing as each of the sections have some interesting trivia's working with SQL Server. In the industry, the role of accidental DBA's especially with SQL Server is so common. Hence if you have performed the role of DBA for a short stink and want to brush-up your fundamentals then the respective sections will be a great skim.

SQL Server Query Performance Tuning Distilled Sajal Dam 2007-03-01 * A completely revised edition of a book that is highly-regarded in the community (as evidenced by Amazon reviews and other customer feedback). * The only comprehensive, practical guide to performance optimization techniques for SQL Server applications. * Essential reading for any DBA or developer resposible for the eprformance of an exisiting SQL Server system, or the design of a new one.

SQL Server Execution Plans Grant Fritchey 2018-10 If a query is performing poorly, and you can't understand why, then that query's execution plan will tell you not only what data set is coming back, but also what SQL Server did, and in what order, to get that data. It will reveal how the data was retrieved, and from which tables and indexes, what types of joins were used, at what point filtering, sorting and aggregation occurred, and a whole lot more. These details will often highlight the likely source of any problem. I wrote this book with the singular goal of teaching you how to read SQL Server Execution plans It will explain, among many other things, the following: How to capture execution plans using manual and automatic methods A documented method for reading and interpreting execution plans How common SQL Server objects, such as indexes, views, stored procedures, and so on, appear in execution plans How to control execution plans with hints and plan guides, and why this is a double-edged sword How the Query Store works with, and collects data on, execution plans With this knowledge, you'll have everything you need to read the execution plan, for any query of your own, regardless of complexity, and understand what it does and what is causing the bad performance. It is still your job to work out how best to fix it, but your new understanding of execution plans will give a much better chance of success!

Pro T-SQL 2012 Programmer's Guide Michael Coles 2012-11-29 Pro T–SQL 2012 Programmer’s Guide is every developer’s key to making full use of SQL Server 2012’s powerful, built–in Transact–SQL language. Discussing new and existing features, the book takes you on an expert guided tour of Transact–SQL functionality. Fully functioning examples and downloadable source code bring technically accurate and engaging treatment of Transact–SQL into your own hands. Step–by–step explanations

ensure clarity, and an advocacy of best–practices will steer you down the road to success. Transact–SQL is the language developers and DBAs use to interact with SQL Server. It’s used for everything from querying data, to writing stored procedures, to managing the database. New features in T-SQL 2012 include full support for window functions, stored sequences, the ability to throw errors, data paging, and more. All these important new features are covered in this book. Developers and DBAs alike can benefit from the expressive power of Transact-SQL, and Pro T-SQL 2012 Programmer's Guide provides the gateway to success in applying this increasingly important database language to everyday business and technical tasks.

Expert Performance Indexing in SQL Server Jason Strate 2015-11-11 This book is a deep dive into perhaps the single-most important facet of good performance: indexes, and how to best use them. The book begins in the shallow waters with explanations of the types of indexes and how they are stored in databases. Moving deeper into the topic, and further into the book, you will look at the statistics that are accumulated both by indexes and on indexes. You’ll better understand what indexes are doing in the database and what can be done to mitigate and improve their effect on performance. The final destination is a guided tour through a number of real life scenarios showing approaches you can take to investigate, mitigate, and improve the performance of your database. Defines the types of indexes and their implementation options Provides use cases and common patterns in applying indexing Describes and explain the index metadata and statistics Provides a framework of strategies and approaches for indexing databases

Microsoft SQL Server 2019: A Beginner's Guide, Seventh Edition Dusan Petkovic 2020-01-03 Publisher's Note: Products purchased from Third Party sellers are not guaranteed by the publisher for quality, authenticity, or access to any online entitlements included with the product. Get Up to Speed on Microsoft® SQL Server® 2019 Quickly and Easily Start working with Microsoft SQL Server 2019 in no time with help from this thoroughly revised, practical resource. Filled with real-world examples and hands-on exercises, Microsoft SQL Server 2019: A Beginner’s Guide, Seventh Edition starts by explaining fundamental relational database system concepts. From there, you’ll learn how to write Transact-SQL statements, execute simple and complex database queries, handle system administration and security, and use powerful analysis and reporting tools. New topics such as SQL and JSON support, graph databases, and support for machine learning with R and Python are also covered in this step-by-step tutorial. • Install, configure, and customize Microsoft SQL Server 2019 • Create and modify database objects with Transact-SQL statements • Write stored procedures and user-defined functions • Handle backup and recovery, and automate administrative tasks • Tune your database system for optimal availability and reliability • Secure your system using authentication, encryption, and authorization • Work with SQL Server Analysis Services, Reporting Services, and other BI tools • Gain knowledge of relational storage, presentation, and retrieval of data stored in the JSON format • Manage graphs using SQL Server Graph Databases • Learn about machine learning support for R and Python