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SQL is a widely used to access most databases, therefore database developers and system administrators should be familiar with it. This hands-on SQL book will help beginner and intermediate users to write queries that apply complex conditions on a table. The book's unique side by side approach makes it easy for the reader to learn three major query languages in the IT industry. The author has over 20 years of experience in database design. KEY FEATURES: Contains numerous practical screenshots of Oracle SQL, T-SQL, MySQL statements and results. Shows the differences between Oracle SQL, T-SQL and MySQL side by side. Gives a real world experience for SQL developers and database administrators. Sample data is available to work on (available on our website). Use window functions to write simpler, better, more efficient T-SQL queries Most T-SQL developers recognize the value of window functions for data analysis calculations. But they can do far more, and recent optimizations make them even more powerful. In T-SQL Window Functions, renowned T-SQL expert Itzik Ben-Gan introduces breakthrough techniques for using them to handle many common T-SQL querying tasks with unprecedented elegance and power. Using extensive code examples, he guides you through window aggregate, ranking, distribution, offset, and ordered set functions. You'll find a detailed section on optimization, plus an extensive collection of business solutions — including novel techniques available in no other book. Microsoft MVP Itzik Ben-Gan shows how to:

- Use window functions to improve queries you previously built with predicates
- Master essential SQL windowing concepts, and efficiently design window functions
- Effectively utilize partitioning, ordering, and framing
- Gain practical in-depth insight into window aggregate, ranking, offset, and statistical functions
- Understand how the SQL standard supports ordered set functions, and find working solutions for functions not yet available in the language
- Preview advanced Row Pattern Recognition (RPR) data analysis techniques
- Optimize window functions in SQL Server and Azure SQL Database, making the most of indexing, parallelism, and more
- Discover a full library of window function solutions for common business problems

About This Book

- For developers, DBAs, data analysts, data scientists, BI professionals, and power users familiar with T-SQL queries
- Addresses any edition of the SQL Server 2019 database engine or later, as well as Azure SQL Database

Get all code samples at: [MicrosoftPressStore.com/TSQWindowFunctions/downloads](https://MicrosoftPressStore.com/TSQWindowFunctions/downloads)

Encoded characteristic functions (ECF) is a new, innovative SQL programming methodology which allows programmers to encode conditional logic as scalar expressions within certain clauses. These extremely powerful techniques are presented by the authors of ECF in "Optimizing Transact-SQL". A guide to SQL covers such topics as retrieving records, metadata queries, working with strings, data arithmetic, date manipulation, reporting and warehousing, and hierarchical queries. Use this guide to one of SQL Server 2019's most impactful features—Big Data Clusters. You will learn about data virtualization and data lakes for this complete artificial intelligence (AI) and machine learning (ML) platform within the SQL Server database engine. You will know how to use Big Data Clusters to combine large volumes of streaming data for analysis along with data stored in a traditional database. For example, you can stream large volumes of data from Apache Spark in real time while executing Transact-SQL queries to bring in relevant additional data from your corporate, SQL Server database. Filled with clear examples and use cases, this book provides everything necessary to get started working with Big Data Clusters in SQL Server 2019. You will learn about the architectural foundations that are made up from Kubernetes, Spark, HDFS, and SQL Server on Linux. You then are shown how to configure and deploy Big Data Clusters in on-premises environments or in the cloud. Next, you are taught about querying. You will learn to write queries in Transact-SQL—taking advantage of skills you have honed for years—and with those queries you will be able to examine and analyze data from a wide variety of sources such as Apache Spark. Through the theoretical foundation provided in this book and easy-to-follow example scripts and notebooks, you will be ready to use and unveil the full potential of SQL Server 2019: combining different types of data spread across widely disparate sources into a single view that is useful for business intelligence and machine learning analysis. What You Will Learn

- Install, manage, and troubleshoot Big Data Clusters in cloud or on-premise environments
- Analyze large volumes of data directly from SQL Server and/or Apache Spark
- Manage data stored in HDFS from SQL Server as if it were relational data
- Implement advanced analytics solutions through machine learning and AI
- Expose different data sources as a single logical source using data virtualization

Who This Book Is For

Data engineers, data scientists, data architects, and database administrators who want to employ data virtualization and big data analytics in their environments

Deliver advanced functionality faster and cheaper by exploiting SQL Server's ever-growing amount of built-in support for modern data formats. Learn about the growing support within SQL Server for operations and data transformations that have previously required third-party software

and all the associated licensing and development costs. Benefit through a better understanding of what can be done inside the database engine with no additional costs or development time invested in outside software. Widely used types such as JSON and XML are well-supported by the database engine. The same is true of hierarchical data and even temporal data. Knowledge of these advanced types is crucial to unleashing the full power that's available from your organization's SQL Server database investment. SQL Server Advanced Data Types explores each of the complex data types supplied within SQL Server. Common usage scenarios for each complex data type are discussed, followed by a detailed discussion on how to work with each data type. Each chapter demystifies the complex data and you learn how to use the data types most efficiently. The book offers a practical guide to working with complex data, using real-world examples to demonstrate how each data type can be leveraged. Performance considerations are also discussed, including the implementation of special indexes such as XML indexes and spatial indexes. What You'll Learn

- Understand the implementation of basic data types and why using the correct type is so important
- Work with XML data through the XML data type
- Construct XML data from relational result sets
- Store and manipulate JSON data using the JSON data type
- Model and analyze spatial data for geographic information systems
- Define hierarchies and query them efficiently through the HierarchyID type

Who This Book Is For SQL Server developers and application developers who need to store and access complex data structures Gain a solid understanding of T-SQL—and write better queries Master the fundamentals of Transact-SQL—and develop your own code for querying and modifying data in Microsoft SQL Server 2012. Led by a SQL Server expert, you'll learn the concepts behind T-SQL querying and programming, and then apply your knowledge with exercises in each chapter. Once you understand the logic behind T-SQL, you'll quickly learn how to write effective code—whether you're a programmer or database administrator. Discover how to:

- Work with programming practices unique to T-SQL
- Create database tables and define data integrity
- Query multiple tables using joins and subqueries
- Simplify code and improve maintainability with table expressions
- Implement insert, update, delete, and merge data modification strategies
- Tackle advanced techniques such as window functions, pivoting and grouping sets
- Control data consistency using isolation levels, and mitigate deadlocks and blocking
- Take T-SQL to the next level with programmable objects

Since its introduction over a decade ago, the Microsoft SQL Server query language, Transact-SQL, has become increasingly popular and more powerful. The current version sports such advanced features as OLE Automation support, cross-platform querying facilities, and full-text search management. This book is the consummate guide to Microsoft Transact-SQL. From data type nuances to complex statistical computations to the bevy of undocumented features in the language, The Guru's Guide to Transact-SQL imparts the knowledge you need to become a virtuoso of the language as quickly as possible. In this book, you will find the information, explanations, and advice you need to master Transact-SQL and develop the best possible Transact-SQL code. Some 600 code examples not only illustrate important concepts and best practices, but also provide working Transact-SQL code that can be incorporated into your own real-world DBMS applications. Your journey begins with an introduction explaining language fundamentals such as database and table creation, inserting and updating data, queries, joins, data presentation, and managing transactions. Moving on to more advanced topics, the journey continues with in-depth coverage of:

- Transact-SQL performance tuning using tools such as Query Analyzer and Performance Monitor
- Nuances of the various T-SQL data types
- Complex statistical calculations such as medians, modes, and sliding aggregates
- Run, sequence, and series identification and interrogation
- Advanced Data Definition Language (DDL) and Data Management Language (DML) techniques
- Stored procedure and trigger best practices and coding methods
- Transaction management
- Optimal cursor use and caveats to look out for
- Full-text search
- Hierarchies and arrays
- Administrative Transact-SQL
- OLE Automation

More than 100 undocumented commands and language features, including numerous unpublished DBCC command verbs, trace flags, stored procedures, and functions Comprehensive, written in understandable terms, and full of practical information and examples, The Guru's Guide to Transact-SQL is an indispensable reference for anyone working with this database development language. The accompanying CD-ROM includes the complete set of code examples found in the book as well as a SQL programming environment that will speed the development of your own top-notch Transact-SQL code. Get the most out of the rich development capabilities of SQL Server 2016 to build efficient database applications for your organization About This Book Utilize the new enhancements in Transact-SQL and security features in SQL Server 2016 to build efficient database applications Work with temporal tables to get information about data stored in the table at any point in time A detailed guide to SQL Server 2016, introducing you to multiple new features and enhancements to improve your overall development experience Who This Book Is For This book is for database developers and solution architects who plan to use the new SQL Server 2016 features for developing efficient database applications. It is also ideal for experienced SQL Server developers who want to switch to SQL Server 2016 for its rich development capabilities. Some understanding of the basic database concepts and Transact-SQL language is assumed. What You Will Learn Explore the new development features introduced in SQL Server 2016 Identify opportunities for In-Memory OLTP technology, significantly enhanced in SQL Server 2016 Use columnstore indexes to get significant storage and performance improvements Extend database design solutions using temporal tables Exchange JSON data between applications and SQL Server in a more efficient way Migrate historical data transparently and securely to Microsoft Azure by using Stretch Database Use the new security features to encrypt or to have more granular control over access to rows in a table Simplify performance troubleshooting with Query Store Discover the potential of R's integration with SQL Server In Detail Microsoft SQL Server 2016 is considered the biggest leap in the data platform history of the Microsoft, in the ongoing era of Big Data and data science. Compared to its predecessors, SQL Server 2016 offers developers a unique opportunity to leverage the advanced features and build applications that are robust, scalable, and easy to administer. This book introduces you to new features of SQL Server 2016 which will open a completely new set of possibilities for you as a developer. It prepares you for the more advanced topics by starting with a quick introduction to SQL Server 2016's new features and a recapitulation of the possibilities you may have already explored with previous versions of SQL Server. The next part introduces you to small delights in the Transact-SQL language and then switches to a completely new technology inside SQL Server - JSON support. We also take a look at the Stretch database, security enhancements, and temporal tables. The last chapters concentrate on implementing advanced topics, including Query Store, columnstore indexes, and In-Memory OLTP. You will finally be introduced to R and how to use the R language with Transact-SQL for data exploration and analysis. By the end of this book, you will have the required information to design efficient, high-performance database applications without any hassle. Style and approach This book is a detailed guide to mastering the development features offered by SQL Server 2016, with a unique learn-as-you-do approach. All the concepts are explained in a very easy-to-understand manner and are supplemented with examples to ensure that you—the developer—are able to take that next step in

building more powerful, robust applications for your organization with ease. The Transact-SQL Cookbook contains a wealth of solutions to problems that SQL programmers face all the time. The recipes in the book range from how to perform simple tasks, such as importing external data, to how to handle more complicated issues, such as set algebra. Each recipe is followed by a discussion explaining the logic and concepts underlying the solution. SQL for Smarties was hailed as the first book devoted explicitly to the advanced techniques needed to transform an experienced SQL programmer into an expert. Now, 10 years later and in the third edition, this classic still reigns supreme as the book written by an SQL master that teaches future SQL masters. These are not just tips and techniques; Joe also offers the best solutions to old and new challenges and conveys the way you need to think in order to get the most out of SQL programming efforts for both correctness and performance. In the third edition, Joe features new examples and updates to SQL-99, expanded sections of Query techniques, and a new section on schema design, with the same war-story teaching style that made the first and second editions of this book classics. Expert advice from a noted SQL authority and award-winning columnist, who has given ten years of service to the ANSI SQL standards committee and many more years of dependable help to readers of online forums. Teaches scores of advanced techniques that can be used with any product, in any SQL environment, whether it is an SQL-92 or SQL-99 environment. Offers tips for working around system deficiencies. Continues to use war stories--updated!--that give insights into real-world SQL programming challenges. SQL Server Integration Services Design Patterns is newly-revised for SQL Server 2014, and is a book of recipes for SQL Server Integration Services (SSIS). Design patterns in the book help to solve common problems encountered when developing data integration solutions. The patterns and solution examples in the book increase your efficiency as an SSIS developer, because you do not have to design and code from scratch with each new problem you face. The book's team of expert authors take you through numerous design patterns that you'll soon be using every day, providing the thought process and technical details needed to support their solutions. SQL Server Integration Services Design Patterns goes beyond the surface of the immediate problems to be solved, delving into why particular problems should be solved in certain ways. You'll learn more about SSIS as a result, and you'll learn by practical example. Where appropriate, the book provides examples of alternative patterns and discusses when and where they should be used. Highlights of the book include sections on ETL Instrumentation, SSIS Frameworks, Business Intelligence Markup Language, and Dependency Services. Takes you through solutions to common data integration challenges Provides examples involving Business Intelligence Markup Language Teaches SSIS using practical examples Effectively query and modify data using Transact-SQL Master T-SQL fundamentals and write robust code for Microsoft SQL Server and Azure SQL Database. Itzik Ben-Gan explains key T-SQL concepts and helps you apply your knowledge with hands-on exercises. The book first introduces T-SQL's roots and underlying logic. Next, it walks you through core topics such as single-table queries, joins, subqueries, table expressions, and set operators. Then the book covers more-advanced data-query topics such as window functions, pivoting, and grouping sets. The book also explains how to modify data, work with temporal tables, and handle transactions, and provides an overview of programmable objects. Microsoft Data Platform MVP Itzik Ben-Gan shows you how to: Review core SQL concepts and its mathematical roots Create tables and enforce data integrity Perform effective single-table queries by using the SELECT statement Query multiple tables by using joins, subqueries, table expressions, and set operators Use advanced query techniques such as window functions, pivoting, and grouping sets Insert, update, delete, and merge data Use transactions in a concurrent environment Get started with programmable objects--from variables and batches to user-defined functions, stored procedures, triggers, and dynamic SQL 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. The Comprehensive Resource for SQL Server 2005 Administrators, Consultants, and Developers Whether you're a systems administrator, database application developer, or IT consultant, you'll quickly ratchet up your knowledge of Microsoft SQL Server 2005 with this thorough and comprehensive guide. Light on theory and heavy on practicality, it cuts to the chase with real-world examples of large-scale business applications, an entire chapter on troubleshooting, and crucial information on SQL Server 2005's enhanced connectivity. For new users of Microsoft SQL Server, this book takes you quickly, but systematically, through the introductory topics. Coverage Includes Integrating SQL Server with .NET Framework Understanding Service Broker, a distributed application framework Programming with ADO.NET, the data-access component of .NET Setting up Notification Services, which delivers personalized information to mobile devices Using SQL Server Management Studio instead of Enterprise Manager Designing made easier with new Business Intelligence Development Studio (BIDS) Printing multi-page reports Mastering Transact-SQL programming language Leverage the Experience of Large-Scale Enterprises through Real-World Examples Increase Your Own Productivity with an Entire Chapter on Troubleshooting Discover What SQL Server 2005's Increased Emphasis on Connectivity Means to Your Installation Start Developing Apps--All the Information You Need! [www.sybex.com](http://www.sybex.com) Advance your career as an SQL Server developer and DBA KEY FEATURES ? Cutting-edge coverage from community experts to learn T-SQL programming. ? Detailed explanation of concepts and techniques for easy understanding. ? Numerous practical demonstrations of T-SQL querying and programming applications. DESCRIPTION This book will teach you the fundamentals of SQL, SQL Server, databases, and how to write queries and programs using T-SQL. After reading this book, you will be able to create, modify, and delete databases, tables, and indexes. You can practice querying the data and running complex analytics on it. You will also be able to add, delete, and modify procedures, user-defined functions, triggers, and views. The journey of learning T-SQL with this book begins with an understanding of SQL and database fundamentals. You'll explore the SQL Server Management Studio (SSMS) used for developing and managing SQL Server databases. You'll then learn how to use DDL statements to create, modify and delete tables and indexes. Gradually, you'll be able to query in T-SQL using DML statements, joins, and various built-in functions. Successively, you'll learn XML and JSON data processing, and by the time you'll reach the end of this book, you will learn to program in SQL Server and various strategies to deploy your databases and programs. Throughout the book, you'll learn through simple examples and straightforward explanations, diagrams, and

numerous real-world use-cases. WHAT YOU WILL LEARN ? Concise understanding of relational databases and the SQL Server. ? Learn how to create database tables and indexes using T-SQL. ? Learn to add, modify, and delete records. ? Practice how to slice and dice data by running smart T-SQL queries. ? Perform advanced analytical analysis using various functions. ? Discover Error Handling and Transaction Management. ? Administer XML and JSON handling with T-SQL. ? Practice different deployment modes for T-SQL objects. WHO THIS BOOK IS FOR If you want to know how to design, develop, and maintain SQL Server databases and run sophisticated T-SQL queries without much hassle, this book is for you. Readers with a basic understanding of programming would have an advantage. TABLE OF CONTENTS 1. Getting started 2. Tables 3. Index 4. DML 5. Built-In Functions - Part 1 6. Join, Apply, and Subquery 7. Built-In Functions - Part 2 8. Dealing with XML and JSON 9. Variables and Control Flow Statements 10. Temporary Tables, CTE, and MERGE Statement 11. Error Handling and Transaction Management 12. Data Conversion, Cross Database, and Cross-Server Data Access 13. Programmability 14. Deployment

Discussing new and existing features, SQL Server designer and administrator Michael Coles takes you on an expert guided tour of Transact-SQL functionality in SQL Server 2008 in his book, *Pro T-SQL 2008 Programmer's Guide*. Fully functioning examples and downloadable source code bring Coles' 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. *Pro T-SQL 2008 Programmer's Guide* is every developer's key to making full use of SQL Server 2008's powerful, built-in Transact-SQL language. 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 SQL Server 2008 include a spatial data type, SQLCLR integration, the MERGE statement, a dramatically improved and market-leading XML feature set, and support for encryption—all of which are covered in this book. Provides information on the architecture of the T-SQL programming language to create scalable code. Troubleshoot query performance issues, identify anti-patterns in code, and write efficient T-SQL queries

**Key Features** Discover T-SQL functionalities and services that help you interact with relational databases Understand the roles, tasks and responsibilities of a T-SQL developer Explore solutions for carrying out database querying tasks, database administration, and troubleshooting

**Book 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 learn** Use Query Store to understand and easily change query performance Recognize and eliminate bottlenecks that lead to slow performance Deploy quick fixes and long-term solutions to improve query performance Implement best practices to minimize performance risk using T-SQL Achieve optimal performance by ensuring careful query and index design Use the latest performance optimization features in SQL Server 2017 and SQL Server 2019 Protect query performance during upgrades to newer versions of SQL Server

**Who 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. If you want to learn how to write stored procedures and triggers for Microsoft SQL Server, *Code Centric: T-SQL Programming with Stored Procedures and Triggers* is the book for you. You'll learn real-world coding and how to build non-trivial applications. All of the examples covered in the book are available for download, making it easier to work through over 5,000 lines of sample code. While there is extensive coverage of the new functionality in SQL Server 2000—such as UDFs (user-defined functions)—you can use this book effectively for virtually any version of SQL Server 6.x, 7.0, or 2000. Prepare for Microsoft Exam 70-761—and help demonstrate your real-world mastery of SQL Server 2016 Transact-SQL data management, queries, and database programming. Designed for experienced IT professionals ready to advance their status, *Exam Ref* focuses on the critical-thinking and decision-making acumen needed for success at the MCSA level. Focus on the expertise measured by these objectives:

- Filter, sort, join, aggregate, and modify data
- Use subqueries, table expressions, grouping sets, and pivoting
- Query temporal and non-relational data, and output XML or JSON
- Create views, user-defined functions, and stored procedures
- Implement error handling, transactions, data types, and nulls

This Microsoft Exam Ref:

- Organizes its coverage by exam objectives
- Features strategic, what-if scenarios to challenge you
- Assumes you have experience working with SQL Server as a database administrator, system engineer, or developer
- Includes downloadable sample database and code for SQL Server 2016 SP1 (or later) and Azure SQL Database

**Querying Data with Transact-SQL About the Exam** Exam 70-761 focuses on the skills and knowledge necessary to manage and query data and to program databases with Transact-SQL in SQL Server 2016. About Microsoft Certification Passing this exam earns you credit toward a Microsoft Certified Solutions Associate (MCSA) certification that demonstrates your mastery of essential skills for building and implementing on-premises and cloud-based databases across organizations. Exam 70-762 (Developing SQL Databases) is also required for MCSA: SQL 2016 Database Development certification. See full details at: [microsoft.com/learning](https://microsoft.com/learning)

**Explores the foundations of SQL and Transact-SQL programming to teach readers how to develop coding techniques and discover solutions to programming problems, then covers practices, design considerations, and advanced topics. Get a performance-oriented introduction to the T-SQL language underlying the Microsoft SQL Server and Azure SQL database engines. This fourth edition is updated to include SQL Notebooks as well as up-to-date syntax and features for T-SQL on-premises and in the Azure cloud. Exercises and examples now include the WideWorldImporters database, the newest sample database from Microsoft for SQL Server. Also new in this edition is coverage of JSON from T-SQL, news about performance enhancements called Intelligent Query Processing, and an appendix on running SQL Server in a container on macOS or Linux. Beginning T-SQL starts you on the path to mastering T-SQL with an emphasis on best**

practices. Using the sound coding techniques taught in this book will lead to excellent performance in the queries that you write in your daily work. Important techniques such as windowing functions are covered to help you write fast-executing queries that solve real business problems. The book begins with an introduction to databases, normalization, and to setting up your learning environment. You will learn about the tools you need to use such as SQL Server Management Studio, Azure Data Studio, and SQL Notebooks. Each subsequent chapter teaches an aspect of T-SQL, building on the skills learned in previous chapters. Exercises in most chapters provide an opportunity for the hands-on practice that leads to true learning and distinguishes the competent professional. A stand-out feature in this book is that most chapters end with a Thinking About Performance section. These sections cover aspects of query performance relative to the content just presented, including the new Intelligent Query Processing features that make queries faster without changing code. They will help you avoid beginner mistakes by knowing about and thinking about performance from day 1.

**What You Will Learn** Install a sandboxed SQL Server instance for learning Understand how relational databases are designed Create objects such as tables and stored procedures Query a SQL Server table Filter and order the results of a query Query and work with specialized data types such as XML and JSON Apply modern features such as window functions Choose correct techniques so that your queries perform well Who This Book Is For Anyone who wants to learn T-SQL from the beginning or improve their T-SQL skills; those who need T-SQL as an additional skill; and those who write queries such as application developers, database administrators, business intelligence developers, and data scientists. The book is also helpful for anyone who must retrieve data from a SQL Server database.

**SQL Server T-SQL Recipes** is an example-based guide to the Transact-SQL language that is at the core of SQL Server. This edition has been lightly updated for SQL Server 2014 and provides ready-to-implement solutions to common programming and database administration tasks. Learn to create databases, create in-memory tables and stored procedures, insert and update data, generate reports, secure your data, and more. Tasks and their solutions are broken down into a problem/solution format that is quick and easy to read so that you can get the job done fast when the pressure is on. Solutions in this book are divided into chapters by problem domain. Each chapter is a collection of solutions around a single facet of the language such as writing queries, managing indexes, error handling, and query performance. Each solution is presented code-first, giving you a working code example to copy from and implement immediately in your own environment. Following each example is an in-depth description of how and why the given solution works. Tradeoffs and alternative approaches are also discussed.

**Focused on solutions: Look up what you need to do. Learn how to do it. Do it.** Current: Lightly updated for SQL Server 2014 Comprehensive: Covers all common T-SQL problem domains Demonstrates important concepts and offers working Transact-SQL code, covering data filtering, DDL, DML, statistical functions, runs and sequences, transactions, stored procedures and triggers, and performance tuning. Ace your preparation for Microsoft® Certification Exam 70-461 with this 2-in-1 Training Kit from Microsoft Press®. Work at your own pace through a series of lessons and practical exercises, and then assess your skills with practice tests on CD—featuring multiple, customizable testing options. Maximize your performance on the exam by learning how to: Create database objects Work with data Modify data Troubleshoot and optimize queries You also get an exam discount voucher—making this book an exceptional value and a great career investment.

"Most T-SQL developers recognize the value of window functions for data analysis calculations. But they can do far more, and recent optimizations make them even more powerful. In T-SQL Window Functions, renowned T-SQL expert Itzik Ben-Gan introduces breakthrough techniques for using them to handle many common T-SQL querying tasks with unprecedented elegance and power. Using extensive code examples, he guides you through window aggregate, ranking, distribution, offset, and ordered set functions. You'll find a detailed section on optimization, plus an extensive collection of business solutions -- including novel techniques available in no other book."--provided by publisher.

In **Advanced Transact-SQL for SQL Server 2000**, authors Itzik Ben-Gan and Thomas Moreau explore the powerful capabilities of Transact-SQL (T-SQL). Ben-Gan and Moreau offer solutions to common problems encountered using all versions of SQL Server, with a focus on the latest version, SQL Server 2000. Expert tips and real code examples teach advanced database programmers to write more efficient and better-performing code that takes full advantage of T-SQL. The authors offer practical solutions to the everyday problems programmers face and include in-depth information on advanced T-SQL topics such as joins, subqueries, stored procedures, triggers, user-defined functions (UDFs), indexed views, cascading actions, federated views, hierarchical structures, cursors, and more. First part of this book describes UDF's and the second part emphasizes system UDF's. Learn about business intelligence (BI) features in T-SQL and how they can help you with data science and analytics efforts without the need to bring in other languages such as R and Python. This book shows you how to compute statistical measures using your existing skills in T-SQL. You will learn how to calculate descriptive statistics, including centers, spreads, skewness, and kurtosis of distributions. You will also learn to find associations between pairs of variables, including calculating linear regression formulas and confidence levels with definite integration. No analysis is good without data quality. **Advanced Analytics with Transact-SQL** introduces data quality issues and shows you how to check for completeness and accuracy, and measure improvements in data quality over time. The book also explains how to optimize queries involving temporal data, such as when you search for overlapping intervals. More advanced time-oriented information in the book includes hazard and survival analysis. Forecasting with exponential moving averages and autoregression is covered as well. Every web/retail shop wants to know the products customers tend to buy together. Trying to predict the target discrete or continuous variable with few input variables is important for practically every type of business. This book helps you understand data science and the advanced algorithms use to analyze data, and terms such as data mining, machine learning, and text mining. Key to many of the solutions in this book are T-SQL window functions. Author Dejan Sarka demonstrates efficient statistical queries that are based on window functions and optimized through algorithms built using mathematical knowledge and creativity. The formulas and usage of those statistical procedures are explained so you can understand and modify the techniques presented. T-SQL is supported in SQL Server, Azure SQL Database, and in Azure Synapse Analytics. There are so many BI features in T-SQL that it might become your primary analytic database language. If you want to learn how to get information from your data with the T-SQL language that you already are familiar with, then this is the book for you.

**What You Will Learn** Describe distribution of variables with statistical measures Find associations between pairs of variables Evaluate the quality of the data you are analyzing Perform time-series analysis on your data Forecast values of a continuous variable Perform market-basket analysis to predict customer purchasing patterns Predict target variable outcomes from one or more input variables Categorize passages of text by extracting and analyzing keywords Who This Book Is For Database developers and database administrators who want to translate their T-SQL skills into the world of business intelligence (BI) and data science. For readers who want to analyze large

amounts of data efficiently by using their existing knowledge of T-SQL and Microsoft's various database platforms such as SQL Server and Azure SQL Database. Also for readers who want to improve their querying by learning new and original optimization techniques. Provides detailed information about Transact-SQL programming and shows specific differences between the Microsoft and Sybase versions of the language. Sams Teach Yourself Microsoft SQL Server T-SQL in 10 Minutes offers straightforward, practical answers when you need fast results. By working through 10-minute lessons, you'll learn everything you need to know to take advantage of Microsoft SQL Server's T-SQL language. This handy pocket guide starts with simple data retrieval and moves on to more complex topics, including the use of joins, subqueries, full text-based searches, functions and stored procedures, cursors, triggers, table constraints, XML, and much more. You'll learn what you need to know methodically, systematically, and simply—in highly focused lessons designed to make you immediately and effortlessly productive. Tips point out shortcuts and solutions Cautions help you avoid common pitfalls Notes explain additional concepts, and provide additional information 10 minutes is all you need to learn how to... Use T-SQL in the Microsoft SQL Server environment Construct complex T-SQL statements using multiple clauses and operators Filter data so you get the information you need quickly Retrieve, sort, and format database contents Join two or more related tables Make SQL Server work for you with globalization and localization Create subqueries to pinpoint your data Automate your workload with triggers Create and alter database tables Work with views, stored procedures, and more Register your book at [www.sampublishing.com/register](http://www.sampublishing.com/register) to download examples and source code from this book. Ben-Gan and Moreau explore the power capabilities of Transact-SQL. They offer solutions to common problems encountered using all versions of SQL Server with a focusing on the latest version, SQL Server 2000. Includes expert tips and real code examples. Beginning T-SQL 2012 is the first step toward learning the T-SQL language that underlies Microsoft's SQL Server database engine. T-SQL is essential in writing SQL statements to get data into and out of a database. T-SQL is the foundation for business logic embedded in the database in the form of stored procedures and functions. Beginning T-SQL 2012 starts you on the path to mastering T-SQL, with an emphasis on best practices and sound coding techniques. Beginning T-SQL 2012 begins with an introduction to databases, normalization, and to SQL Server Management Studio. Each subsequent chapter teaches an aspect of T-SQL, building on the skills learned in previous chapters. Exercises in each chapter give readers an opportunity for the hands-on practice that leads to true learning and distinguishes the competent professional. Imparts best practices for writing T-SQL Helps you avoid common errors Shows how to write scalable code for good performance Advanced topics in Transact-SQL. 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 Explore the impressive storage and analytic tools available with the in-cloud and on-premises versions of Microsoft SQL Server 2019. Key Features Gain insights into what's new in SQL Server 2019 Understand use cases and customer scenarios that can be implemented with SQL Server 2019 Discover new cross-platform tools that simplify management and analysis Book 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 learn Build a custom container image with a Dockerfile Deploy and run the SQL Server 2019 container image Understand how to use SQL server on Linux Migrate existing paginated reports to Power BI Report Server Learn to query Hadoop Distributed File System (HDFS) data using Azure Data Studio Understand the benefits of In-Memory OLTP Who 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. 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 Learn Choose 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 Beginning T-SQL is a performance-

oriented introduction to the T-SQL language underlying the Microsoft SQL Server database engine. T-SQL is essential in writing SQL statements to get data into and out of a database. T-SQL is the foundation for business logic embedded in the database in the form of stored procedures and functions. Beginning T-SQL starts you on the path to mastering T-SQL, with an emphasis on best-practices and sound coding techniques leading to excellent performance. This new edition is updated to cover the essential features of T-SQL found in SQL Server 2014, 2012, and 2008. Beginning T-SQL begins with an introduction to databases, normalization, and to SQL Server Management Studio. Attention is given to Azure SQL Database and how to connect to remote databases in the cloud. Each subsequent chapter teaches an aspect of T-SQL, building on the skills learned in previous chapters. Exercises in most chapters provide an opportunity for the hands-on practice that leads to true learning and distinguishes the competent professional. Important techniques such as windowing functions are covered to help write fast executing queries that solve real business problems. A stand-out feature in this book is that most chapters end with a "Thinking About Performance" section. These sections cover aspects of query performance relative to the content just presented. They'll help you avoid beginner mistakes by knowing about and thinking about performance from Day 1. Imparts best practices for writing T-SQL Helps you avoid common errors Shows how to write scalable code for good performance This is the second book on transact-SQL. I assume the readers have completed my first book entitled "Relational Database and transact SQL". In addition to cover the syntax for advanced SQL statements, this book provides plenty of examples and exercises.

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