Expert SQL Server In-Memory OLTP

Revolutionizing OLTP Performance in SQL Server

Second Edition

Dmitri Korotkevitch

apress

Expert Sql Server In Memory Oltp

Sang-goo Lee,Zhiyong Peng,Xiaofang Zhou,Yang-Sae Moon,Rainer Unland,JAESOO YOO

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Expert SQL Server In-Memory OLTP Dmitri Korotkevitch, 2017-09-02 Take a deep dive into one of the most significant SQL Server features support for In Memory Online Transaction Processing The latest developments are covered including support of off row storage columnstore indexes and operational analytics changes in programmability and native compilation and more This book describes the architecture and internals of the In Memory OLTP Engine and explains how to develop deploy and maintain systems using it With it you can dramatically increase transaction throughput to handle thousands of transactions per second supporting millions of customers Learn the architecture and the internals of In Memory OLTP in order to recognize when technology can make a difference Recognize opportunities for In Memory OLTP in new development and understand how to benefit from it in existing systems Don t be without Dmitri Korotkevitch and the deep expertise he imparts in Expert SQL Server In Memory OLTP 2nd Editionas you move forward in using SQL Server s In Memory OLTP technology Dmitri Korotkevitch is the five star author of Pro SOL Server Internals and brings the same combination of clear thinking and deep expertise to help you in this second edition The book Explains In Memory OLTP internals architecture and programmability including data storage indexing multi version concurrency control transaction logging and recovery and native compilation Covers SQL Server 2016 technology enhancements including columnstore indexes and off row storage Guides in using In Memory OLTP in new development and existing systems What You Il Learn Grasp how SQL Server stores and works with data in memory optimized tables Properly design and index memory optimized tables Plan successful deployments including the required memory size and I O configuration Accelerate T SQL processing through the creation of natively compiled modules Monitor and report on the benefits and performance of your In Memory OLTP solutions Benefit from the technology in existing systems and in the systems with the mixed workload Who This Book Is For Application developers and database administrators who create and manage online transaction processing OLTP systems in particular those wanting to take advantage of SQL Server's new offering of in memory OLTP to dramatically improve performance and throughput of their systems Expert SQL Server Transactions and Locking Dmitri Korotkevitch, 2018-10-08 Master SQL Server's Concurrency Model so you can implement high throughput systems that deliver transactional consistency to your application customers This book explains how to troubleshoot and address blocking problems and deadlocks and write code and design database schemas to minimize concurrency issues in the systems you develop SQL Server's Concurrency Model is one of the least understood parts of the SQL Server Database Engine Almost every SQL Server system experiences hard to explain concurrency and blocking issues and it can be extremely confusing to solve those issues without a base of knowledge in the internals of the Engine While confusing from the outside the SQL Server Concurrency Model is based on several well defined principles that are covered in this book Understanding the internals surrounding SQL Server's Concurrency Model helps you build high throughput systems in multi user environments This book guides you through the Concurrency Model

and elaborates how SQL Server supports transactional consistency in the databases The book covers all versions of SQL Server including Microsoft Azure SQL Database and it includes coverage of new technologies such as In Memory OLTP and Columnstore Indexes What You Il Learn Know how transaction isolation levels affect locking behavior and concurrency Troubleshoot and address blocking issues and deadlocks Provide required data consistency while minimizing concurrency issues Design efficient transaction strategies that lead to scalable code Reduce concurrency problems through good schema design Understand concurrency models for In Memory OLTP and Columnstore Indexes Reduce blocking during index maintenance batch data load and similar tasks Who This Book Is For SQL Server developers database administrators and application architects who are developing highly concurrent applications. The book is for anyone interested in the technical aspects of creating and troubleshooting high throughput systems that respond swiftly to user requests 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 Server: Advanced Performance Tuning and Optimization Strategies Adam Jones, 2025-01-03 Unlock the full potential of your SQL Server databases with SQL Server Advanced Performance Tuning and Optimization Strategies a comprehensive guide designed to elevate your database performance to new heights This book demystifies the complexities of SQL Server delivering in depth insights into its architecture advanced indexing strategies sophisticated query optimization techniques and much more Whether you re a database administrator system engineer or developer this book empowers you to diagnose performance bottlenecks implement advanced solutions and ensure your databases are running with maximum efficiency and reliability Explore a wealth of advanced topics from executing plan analysis to troubleshooting intricate performance issues articulated with clarity and precision Meticulously crafted to cover pivotal aspects of SQL Server performance SQL Server Advanced Performance Tuning and Optimization Strategies stands as an essential resource for professionals looking to refine

their skills and proactively conquer database performance challenges with confidence Step beyond basic maintenance transform your databases into high performing engines that drive your organization s success Pro SOL 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 gueries 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 SOL Server Mastery: Advanced Techniques for Database Optimization and Administration Adam Jones, 2025-01-21 SQL Server Mastery Advanced Techniques for Database Optimization and Administration is the ultimate resource for those seeking to excel in the sophisticated realm of SQL Server management and development Crafted for database administrators developers and data analysts alike this comprehensive guide delves deeply into the intricacies of SQL Server From its foundational architecture to intricate subjects such as performance tuning transaction management and automation with PowerShell the book provides a thorough exploration of advanced database strategies Through insightful discussions practical examples and real world applications readers will develop the skills necessary to expertly navigate the complexities of SQL Server Whether you aspire to enhance

your database design perfect your T SOL gueries implement cutting edge indexing strategies or establish resilient backup and recovery processes this book offers the vital knowledge and techniques to achieve professional mastery SQL Server Mastery Advanced Techniques for Database Optimization and Administration is more than just a book it s an essential tool for advancing your career in database management and optimization T-SQL Querving Itzik Ben-Gan, Adam Machanic, Dejan Sarka, Kevin Farlee, 2015-02-17 T SQL insiders help you tackle your toughest gueries and guery tuning problems Squeeze maximum performance and efficiency from every T SQL guery 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 SOL Server 2019 Administrator's Guide Marek Chmel, Vladimír Mužný, 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 successfully Develop 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 SQL Server Text Book Manish Soni, 2024-11-13 This book is designed to be your comprehensive companion in your journey to becoming proficient in Microsoft SQL Server Text Book Whether you are a beginner taking your first steps into the world of SQL databases or an experienced database professional seeking to deepen your knowledge this book has something to offer you In today s data driven world the importance of managing data efficiently cannot be overstated Microsoft SQL Server a robust and versatile database management system is at the heart of countless applications powering businesses industries and organizations of all sizes With its rich feature set scalability and integration capabilities SQL Server has become an indispensable tool for database professionals developers and administrators In Mastering Microsoft SQL we have carefully curated a wealth of knowledge practical insights and hands on examples to guide you through the complexities of SQL Server From understanding the fundamentals of SQL to mastering advanced database administration techniques this book is structured to help you build a strong foundation and progress to expert level skills Database Systems for Advanced Applications Jian Pei, Yannis Manolopoulos, Shazia Sadiq, Jianxin Li,2018-05-11 This two volume set LNCS 10827 and LNCS 10828 constitutes the refereed proceedings of the 23rd International Conference on Database Systems for Advanced Applications DASFAA 2018 held in Gold Coast QLD Australia in May 2018 The 83 full papers 21 short papers 6 industry papers and 8 demo papers were carefully selected from a total of 360 submissions The papers are organized around the following topics network embedding recommendation graph and network processing social network analytics sequence and temporal data processing trajectory and streaming data RDF and knowledge graphs text and data mining medical data mining security and privacy search and information retrieval query processing and optimizations data quality and crowdsourcing learning models multimedia data processing and distributed

computing Tuning and Optimization Secrets for SOL Server Performance Pasquale De Marco, 2025-05-05 Tuning and Optimization Secrets for SOL Server Performance provides a comprehensive guide to optimizing the performance of SOL Server databases covering a wide range of topics from fundamental concepts to advanced techniques This book is an essential resource for database administrators developers and anyone else who wants to get the most out of their SQL Server systems In this book you will learn how to Identify and resolve performance bottlenecks Optimize gueries and storage structures Manage memory and concurrency effectively Ensure high availability and disaster recovery Monitor and analyze performance data Implement advanced performance tuning techniques Whether you are new to SQL Server performance tuning or an experienced professional looking to enhance your skills this book has something for you With its clear explanations real world examples and practical advice Tuning and Optimization Secrets for SQL Server Performance will help you improve the performance of your SQL Server databases and achieve optimal results Tuning and Optimization Secrets for SQL Server Performance is written by Pasquale De Marco a leading expert in SQL Server performance tuning Pasquale De Marco has over 20 years of experience in the field and has helped countless organizations improve the performance of their SQL Server systems With his in depth knowledge and practical experience Pasquale De Marco provides valuable insights and best practices that you can apply to your own systems If you are looking for a comprehensive and authoritative guide to SOL Server performance tuning then Tuning and Optimization Secrets for SQL Server Performance is the book for you With its clear explanations real world examples and practical advice this book will help you improve the performance of your SQL Server databases and achieve optimal results If you like this book write a review on google books Methodologies and Technologies in Network Architecture, Mobile Computing, and Data Analytics Khosrow-Pour, D.B.A., Mehdi, 2018-10-19 From cloud computing to data analytics society stores vast supplies of information through wireless networks and mobile computing As organizations are becoming increasingly more wireless ensuring the security and seamless function of electronic gadgets while creating a strong network is imperative Advanced Methodologies and Technologies in Network Architecture Mobile Computing and Data Analytics highlights the challenges associated with creating a strong network architecture in a perpetually online society Readers will learn various methods in building a seamless mobile computing option and the most effective means of analyzing big data This book is an important resource for information technology professionals software developers data analysts graduate level students researchers computer engineers and IT specialists seeking modern information on emerging methods in data mining information technology and High Performance SQL Server Benjamin Nevarez, 2016-11-21 Design and configure SQL Server wireless networks 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 guery 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

<u>Database Systems for Advanced Applications</u> Guoliang Li, Jun Yang, Joao Gama, Juggapong Natwichai, Yongxin Tong, 2019-04-23 This two volume set LNCS 11446 and LNCS 11447 constitutes the refereed proceedings of the 24th International Conference on Database Systems for Advanced Applications DASFAA 2019 held in Chiang Mai Thailand in April 2019 The 92 full papers and 64 short papers were carefully selected from a total of 501 submissions In addition 13 demo papers and 6 tutorial papers are included The full papers are organized in the following topics big data clustering and classification crowdsourcing data integration embedding graphs knowledge graph machine learning privacy and graph recommendation social network spatial and spatio temporal The short papers demo papers and tutorial papers can be found in the volume LNCS 11448 which also includes the workshops of DASFAA 2019 **SOL Server 2017 Machine Learning Services with R** Tomaz Kastrun, Julie Koesmarno, 2018-02-27 Develop and run efficient R scripts and predictive models for SQL Server 2017 Key Features Learn how you can combine the power of R and SQL Server 2017 to build efficient cost effective data science solutions Leverage the capabilities of R Services to perform advanced analytics from data exploration to predictive modeling A quick primer with practical examples to help you get up and running with SQL Server 2017 Machine Learning Services with R as part of database solutions with continuous integration continuous delivery Book Description R Services was one of the most anticipated features in SQL Server 2016 improved significantly and rebranded as SQL Server 2017 Machine Learning Services Prior to SQL Server 2016 many developers and data scientists were already using R to

connect to SQL Server in siloed environments that left a lot to be desired in order to do additional data analysis superseding SSAS Data Mining or additional CLR programming functions With R integrated within SQL Server 2017 these developers and data scientists can now benefit from its integrated effective efficient and more streamlined analytics environment This book gives you foundational knowledge and insights to help you understand SQL Server 2017 Machine Learning Services with R First and foremost the book provides practical examples on how to implement use and understand SQL Server and R integration in corporate environments and also provides explanations and underlying motivations It covers installing Machine Learning Services maintaining deploying and managing code and monitoring your services Delving more deeply into predictive modeling and the RevoScaleR package this book also provides insights into operationalizing code and exploring and visualizing data To complete the journey this book covers the new features in SQL Server 2017 and how they are compatible with R amplifying their combined power What you will learn Get an overview of SQL Server 2017 Machine Learning Services with R Manage SQL Server Machine Learning Services from installation to configuration and maintenance Handle and operationalize R code Explore RevoScaleR R algorithms and create predictive models Deploy manage and monitor database solutions with R Extend R with SQL Server 2017 features Explore the power of R for database administrators Who this book is for This book is for data analysts data scientists and database administrators with some or no experience in R but who are eager to easily deliver practical data science solutions in their day to day work or future projects SQL Server 2014 with PowerShell v5 Cookbook Donabel Santos, 2015-12-04 Over 150 real world using SQL Server recipes to simplify database management automate repetitive tasks and enhance your productivity About This Book This book helps you build a strong foundation to get you comfortable using PowerShell with SQL Server empowering you to create more complex scripts for your day to day job The book provides numerous guidelines tips and explanations on how and when to use PowerShell cmdlets WMI SMO NET classes or other components It offers easy to follow practical recipes to help you get the most out of SQL Server and PowerShell Who This Book Is For If you are a SQL Server database professional DBA developer or BI developer who wants to use PowerShell to automate integrate and simplify database tasks this books is for you Prior knowledge of scripting would be helpful but it is not necessary What You Will Learn Explore database objects and execute queries on multiple servers Manage and monitor the running of SQL Server services and accounts Back up and restore databases Create an inventory of database properties and server configuration settings Maintain permissions and security for users Work with CLR assemblies XML and BLOB objects in SQL Manage and deploy SSIS packages and SSRS reports In Detail PowerShell can be leveraged when automating and streamlining SQL Server tasks PowerShell comes with a rich set of cmdlets and integrates tightly with the NET framework Its scripting capabilities are robust and flexible allowing you to simplify automation and integration across different Microsoft applications and components The book starts with an introduction to the new features in SQL Server 2014 and PowerShell v5 and the installation of SQL Server You will learn

about basic SOL Server administration tasks and then get to know about some security related topics such as the authentication mode and assigning permissions Moving on you will explore different methods to back up and restore your databases and perform advanced administration tasks such as working with Policies Filetables and SQL audits The next part of the book covers more advanced HADR tasks such as log shipping and data mirroring and then shows you how to develop your server to work with BLOB XML and JSON Following on from that you will learn about SQL Server s BI stack which includes SSRS reports the SSIS package and the SSAS cmdlet and database Snippets not specific to SOL Server will help you perform tasks quickly on SQL servers Towards the end of the book you will find some useful information which includes a PowerShell tutorial for novice users some commonly used PowerShell and SQL Server syntax and a few online resources Finally you will create your own SQL Server Sandbox VMs All these concepts will help you to efficiently manage your administration tasks Style and approach SQL Server 2014 with PowerShell v5 Cookbook is an example focused book that provides step by step instructions on how to accomplish specific SQL Server tasks using PowerShell Each recipe is followed by an analysis of the steps or design decisions taken and additional information about the task at hand Working scripts are provided for all examples so that you can dive in right away You can read this book sequentially by chapter or you can pick Jorgensen, Bradley Ball, Steven Wort, Ross LoForte, Brian Knight, 2014-09-08 Learn to take advantage of the opportunities offered by SOL Server 2014 Microsoft's SOL Server 2014 update means big changes for database administrators and you need to get up to speed guickly because your methods workflow and favorite techniques will be different from here on out The update s enhanced support of large scale enterprise databases and significant price advantage mean that SQL Server 2014 will become even more widely adopted across the industry The update includes new backup and recovery tools new AlwaysOn features and enhanced cloud capabilities In memory OLTP Buffer Pool Extensions for SSDs and a new Cardinality Estimator can improve functionality and smooth out the workflow but only if you understand their full capabilities Professional Microsoft SQL Server 2014 is your comprehensive guide to working with the new environment Authors Adam Jorgensen Bradley Ball Ross LoForte Steven Wort and Brian Knight are the dream team of the SQL Server community and they put their expertise to work guiding you through the changes Improve oversight with better management and monitoring Protect your work with enhanced security features Upgrade performance tuning scaling replication and clustering Learn new options for backup and recovery Professional Microsoft SQL Server 2014 includes a companion website with sample code and efficient automation utilities plus a host of tips tricks and workarounds that will make your job as a DBA or database architect much easier Stop getting frustrated with administrative issues and start taking control Professional Microsoft SQL Server 2014 is your roadmap to mastering the update and creating solutions that work Advanced Oracle PL/SOL <u>Developer's Guide</u> Saurabh K. Gupta, 2016-02-15 Master the advanced concepts of PL SQL for professional level certification

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One Tuning and Optimization Achieve peak performance from your ERP platform while minimizing downtime and lowering TCO Advanced Tuning for JD Edwards Enterprise One Implementations shows how to plan and adopt a structured top to bottom maintenance methodology Uncover and eliminate bottlenecks maximize efficiency at every component layer troubleshoot databases and web servers automate system testing and handle mobile issues This Oracle Press guide offers complete coverage of the latest cloud clustering load balancing and virtualization solutions Understand the components of a structured tuning plan Establish benchmarks and implement key industry practices Perform changes and accurately measure system wide impact Diagnose and repair HTTP web application and Java issues Troubleshoot Oracle Database connections and transactions Streamline Oracle s JD Edwards EnterpriseOne kernel and JDENeT processes Configure test and manage virtual machines and servers Work with Oracle Exadata Database Machine and Oracle Exalogic Elastic Cloud **Database** Systems for Advanced Applications Sang-goo Lee, Zhiyong Peng, Xiaofang Zhou, Yang-Sae Moon, Rainer Unland, JAESOO YOO,2012-03-27 This two volume set LNCS 7238 and LNCS 7239 constitutes the refereed proceedings of the 17th International Conference on Database Systems for Advanced Applications DASFAA 2012 held in Busan South Korea in April 2012 The 44 revised full papers and 8 short papers presented together with 2 invited keynote papers 8 industrial papers 8 demo presentations 4 tutorials and 1 panel paper were carefully reviewed and selected from a total of 159 submissions The topics covered are guery processing and optimization data semantics XML and semi structured data data mining and knowledge discovery privacy and anonymity data management in the Web graphs and data mining applications temporal and spatial data top k and skyline guery processing information retrieval and recommendation indexing and search systems cloud computing and scalability memory based query processing semantic and decision support systems social data data mining

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