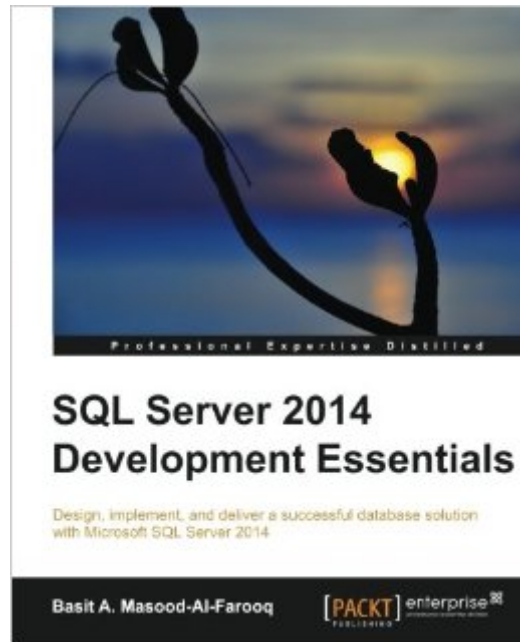


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# SQL Server 2014 Development Essentials



## Synopsis

Design, implement, and deliver a successful database solution with Microsoft SQL Server 2014

**About This Book** Discover SQL Server 2014's new in-memory OLTP engine and performance-related improvements Explore the fundamentals of database planning and the Server Transact-SQL language syntax Gain hands-on experience with the use of scalar and table-valued functions, branching, and more advanced data structures

**Who This Book Is For** If you are a database developer, architect, or administrator who wants to learn how to design, implement, and deliver a successful database solution with SQL Server 2014, then this book is for you. Existing users of Microsoft SQL Server will also benefit from this book as they will learn what's new in the latest version.

**What You Will Learn** Get introduced to SQL Server 2014's new in-memory database engine Understand SQL Server database architecture and relational database design Use joins, subqueries, CTEs, and windowing functions to write advanced Transact-SQL queries Learn about tools that let you monitor SQL Server database performance Identify and troubleshoot blocks or deadlocks that might slow down a system Design, create, and manage advanced database objects that include scalar and table-valued functions, views, stored procedures, and triggers Use SQL Server 2014's structured error handling blocks to handle errors that occur in the Transact-SQL batches and programmable objects

**In Detail** SQL Server 2014 Development Essentials is an easy-to-follow yet comprehensive guide that is full of hands-on examples. With Microsoft SQL Server 2014, you can design, build, and deploy mission-critical database applications. The variety of new in-memory features enable you to design high performance database applications that can improve the performance of your applications, making them as much as ten times more efficient in some cases. Whether you are thinking about becoming a database developer, architect, or administrator, or you are a seasoned database expert, this book will provide you with all the skills you need to successfully create, design, and deploy databases using SQL Server 2014. You will also learn how to add, modify, and delete data stored within a database. You will use Transact-SQL statements to create and manage advanced database objects that include scalar and table-valued functions, views, stored procedures, and triggers. Finally, you will learn about how SQL Server works, how indexes and statistics improve query performance, and the new SQL Server 2014 in-memory technologies.

## Book Information

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## Customer Reviews

I read it in one large gulp as the book is not lengthy at 170 + or so actually useful pages. The material is written in concise, clear manner. Besides, I expected least at as many more pages for such a complex and feature rich product. But what did the book promise? The primary goal is to have a reader developed enough skills to deliver a successful database application. The book targets database developers, administrators and architects. However, the book deserves a lot of criticism, for example the many-to-many relationship in the book is represented in form of two tables, unfortunately, the true many-to-many relationship in RDBMS` cannot be achieved without an interim, third table, this will make many folks upset so I have submitted errata, but I can't understand how Packt makes it shared for all readers. I shall continue on this note and also tell that even a greater flaw in this book exists "overall, it is not providing enough guidance, advice or reference. I mean if a topic say on locking is covered why the author would not advocate on which locking option to use under what circumstances? The same applies to most topics. Furthermore, I was surprised almost nothing was covered about a database operating in the Cloud (Azure), CLR functions, CDC, no mention on Service Broker, Master Data Management, Data Quality, etc. the same is true to many more canned features (just too many to mention); without the aforesaid this book is of much less help to software architects and incomplete for developers. The not so advocated to be used SQL Profiler is covered beside the Dynamic Management Views whereas I expect the database tuning and troubleshooting become a separate chapter on its own. In short, I am disappointed this time, I just fail to see what gap this book closes and simply how it is any better than just reading on product features on Microsoft's site, then more in-depth in BOL, MSDN and blog posts of the most prominent SQL Server industry leaders. Two stars out of five because it

may be served as a guide or read as preamble to starting developing a new SQL Server based database. Disclaimer: this book was given to me for free by Packt Publishing in exchange to publishing a timely review.

Hi, I have written a detailed chapter-by-chapter review of this book on [www.DOT-i-programmer.DOT-info](http://www.DOT-i-programmer.DOT-info), the first and last parts of this review are given here. For my review of all chapters, search [www.DOT-i-programmer.DOT-info](http://www.DOT-i-programmer.DOT-info) for STIRK together with the book's title. This short but wide-ranging book aims to cover the SQL Server 2014's development essentials, from the beginning, to in-depth knowledge, how does it fare? The book's introduction says "This book will provide you with all the skills you need to successfully design, build, and deploy databases using SQL Server 2014. Starting from the beginning, this book gives you an insight into the key stages of the SQL Server database process, provides you with an in-depth knowledge of the SQL Server database architecture, and shares tips to help you design the new database." Below is a chapter-by-chapter exploration of the topics covered.

### Chapter 1 Microsoft SQL Server Database Design Principles

This chapter aims to cover the major steps in database design. It begins with a look at the place of database design within systems development, noting a poor design can lead to slow or unused systems. Database design is broken down, and described briefly in the following steps:

- \*Requirements gathering/analysis (interviews, analysis, user and functional requirements)
- \*Conceptual design (meets requirements, independent of database vendor, E-R diagrams)
- \*Logical design (maps E-R diagram to database vendor)
- \*Physical design (map to database structures)
- \*Implementation/loading (create database and tables, load data, configure)
- \*Testing/evaluation (performance, integrity, concurrency, security)

Table design is considered next, tables contain columns and rows that store data. Business entities form the basis of tables, and the entity's attributes become table columns. The associations between the different tables are described using 1-to-1, 1-to-many, and many-to-many relationships. Data integrity ensures data is reliable and follows business rules. Integrity is examined briefly in terms of domain (e.g. check constraint), entity (e.g. primary key), referential (e.g. foreign key), and user-defined (e.g. triggers). Normalization is discussed as a means of reducing data redundancy, so the data exists only once. The first 3 normal forms are described briefly. An overview of SQL Server's file architecture is given, consisting of a primary data file, zero or more secondary data files, and a log file. The structure of a database page (i.e. header, data rows, offset array) is described, as are extents (8 contiguous pages), the transaction log (allow rollback/recovery), and filegroups (allow easier admin). Finally, the importance of data types is described. This chapter provides a whirlwind review of the major steps and considerations in

creating a database. While it is wide-ranging, it often lacks depth. Several features are mentioned in passing (e.g. checkpoint), without any explanation being given. The database design section mentions using data flow diagrams (DFDs), instead some of the various more 'modern' UML diagrams should have been mentioned. The definitions of the normal forms feel awkward, and composite keys are referenced in second normal form - without first describing what a composite key is. Deriving the business entities from the user/functional requirements is not discussed. The chapter does provide a good review of the major steps in database design (especially if you already know the subject matter), which for the most part is independent of SQL Server itself. There are some useful links for further information. There's a useful diagram that describes the working of the transaction log....

**Conclusion** This book contains SQL syntax and typically brief example code covering a wide-range of SQL Server development topics. Although it is wide-ranging, it lacks depth, even for an 'essentials' book. If you are new to SQL Server, which is the intended market, this book will give you a basic understanding of using SQL Server from a developer's perspective, taking you from say level 0 to level 3 or 4 (out of 10). It does not contain enough detail to be a useful teaching aid. If you already understand the subject matter, this book can be used as a refresher, with the proviso it has limited depth. Little of the book relates specifically to SQL Server 2014. About 95% of the book is equally applicable to SQL Server 2012. which is not surprising since the major changes in SQL Server 2014 from a developer's perspective tend to be internal. You can see the changes here: <http://msdn.microsoft.com/en-us/library/bb510411.aspx>. I suspect the 2014 in the title is to catch the market for new SQL Server 2014 books. In many ways, the book contains the right topics and subheadings, but to be more useful, the content should have been expanded to include more detail, examples, tips, troubleshooting remarks, and explained output/results.

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