

THE EXPERT'S VOICE® IN .NET

Beginning VB 2005 Databases

From Novice to Professional

*What every VB programmer needs to know about
SQL Server 2005, T-SQL, ADO.NET 2.0, and LINQ*

James Huddleston

Ranga Raghuram, Syed Fahad Gilani,
Jacob Hammer Pedersen, and Jon Reid

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ISBN-13 (pbk): 978-1-59059-810-8

ISBN-10 (pbk): 1-59059-810-5

Printed and bound in the United States of America 9 8 7 6 5 4 3 2 1

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Distributed to the book trade worldwide by Springer-Verlag New York, Inc., 233 Spring Street, 6th Floor, New York, NY 10013. Phone 1-800-SPRINGER, fax 201-348-4505, e-mail orders-ny@springer-sbm.com, or visit <http://www.springeronline.com>.

For information on translations, please contact Apress directly at 2560 Ninth Street, Suite 219, Berkeley, CA 94710. Phone 510-549-5930, fax 510-549-5939, e-mail info@apress.com, or visit <http://www.apress.com>.

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To Jared, Quinn, and Tess
I love you.
—Jim Huddleston

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Acknowledgments

First, I'd like to thank Ewan Buckingham of Apress for convincing me to write this book now rather than wait until all the goodies for VB 9.0 and ADO.NET 3.0 come sometime in the future. SQL Server 2005 and LINQ are both exciting topics that deserve current coverage, and I've tried to do them justice in a way that will keep this book fresh and valuable for readers for quite a while.

Second, I'd like to thank my tech reviewer, Fabio Claudio Ferracchiati, for his thorough and careful checking of both the manuscript and code. His extraordinary professionalism and dedication made this book a better one. Of course, any errors that remain are entirely my responsibility, not his. Thanks so much, Fabio.

Third, I want to thank my editor, Jonathan Hassell; project manager, Laura Esterman; and production editor, Laura Cheu. All made this endeavor far less of an effort than it otherwise could have been. Thanks too to my copy editors, Susannah Davidson Pfalzer and Liz Welch, whose trained eyes saved me from a variety of inelegancies and inadvertencies and who were invariably polite in pointing out even the most embarrassing glitches. All of you make Apress the warm and wonderful place for authors that it truly is.

A variety of people contributed encouragement and support. Thank you, Amy Abrams, Nicholas Andrea, Laurie Apgar, Tiffany Armstrong, Elizabeth A. Baker, Wesley R. Bowman, W. Truxton Boyce, Robert Chodoroff, Liam Patrick Clerkin, Wydell Conley, Chip Deaton, Rebecca Doeltz, Melissa Dupre, Elrod S. Ferreira, Justin Finucan, Francoise Friedlaender, David Gaines, Milo Gibbons, Lania Herman, Sarah James, Jackie Jones, Renee L. Kane, Elizabeth Keelan, Cary Kerrigan, Gil Lachance, Jeff Lee, Joel Lipman, Darren R. Lloyd, Ron Maguire, Jason B. Majewski, Rosemarie Naguski, Edna Ocampo, Susan Paul, Jax Pierson, Paul Preiss, John Reda, Helen Rei, Eric Robson, Michael P. Small, Teri Small, Michael Thompson, Susan Tussey, James Tuzun, and Paul Yip.

Finally, special thanks to very special people for extra-special help: Roy Beatty, Michael Green, Judith Lane Gregory, David Moffitt, Joseph Rickert, Yi Soon-Shin, and Yi Ui-Min.

Jim Huddleston

Introduction

Every program manipulates data. Most real-world programs use data stored in relational databases, so every VB programmer needs to know how to access relational data. This book explains how to do this in VB, with ADO.NET and Language-Integrated Query (LINQ), against SQL Server 2005. The same principles and techniques apply to VB programming against other relational database management systems, such as DB2, MySQL, Oracle, and PostgreSQL, so what you learn here is valuable whatever database you use.

Who Is This Book For?

This book is for anyone interested in how to access relational data with VB. Only a bit of experience with VB is assumed, and no prior experience with relational databases or the relational database language SQL is required. We cover all fundamentals carefully and in an order we believe leads easily from one topic to another, building knowledge and experience as you progress through the book. So, chapters are best read in sequence.

What Does This Book Cover?

This book covers all the fundamentals of relational database and ADO.NET that every VB programmer needs to know and understand. These concepts and techniques are the foundation for all database programming. Even if you never learn anything else, by the end of the book you'll be able to handle the vast majority of real-world database applications in a professional way. The chapters progress as follows:

- *Getting started:* The first three chapters set things up for our later work. Chapter 1 explains how to download and install our tools (all free from Microsoft). Chapter 2 gives us some practice with them as we configure a few things. Chapter 3 is a primer on Transact-SQL (T-SQL), SQL Server's dialect of the standard database language, SQL.
- *Learning ADO.NET basics:* Chapters 4 through 8 describe the essential features of ADO.NET, the interface between VB programs and databases. Each major feature is explained with example programs that can be used as the basis for your own programs, whatever part of ADO.NET you need.

- *Building Windows applications*: Chapter 9 covers data binding: mapping database data to graphical user interface controls. We provide simple Windows Forms examples, but the principles are equally applicable to ASP.NET Web controls.
- *Learning more about SQL and relational databases*: Chapters 10 through 12 delve more deeply into relational database concepts and techniques, from designing and creating tables, to more advanced queries and data manipulation, to a full chapter on writing stored procedures in T-SQL.
- *Using advanced features*: Chapters 13 through 15 cover exception handling, transactions, and ADO.NET events.
- *Using special data types*: Chapter 16 explains how to handle large data objects, such as images and documents. Chapter 17 covers the new XML data type and other features for conveniently using XML with T-SQL. It carefully explains some techniques that even experienced T-SQL users puzzle over, and demonstrates their power.
- *Introducing LINQ*: Chapter 18 is an exciting one. It describes how to use Language-Integrated Query (LINQ), Microsoft's new technology for accessing any kind of data. LINQ is easy to use and is the future direction of ADO.NET and .NET database programming.

What Do You Need to Use This Book?

You need Windows XP Professional (or any other operating system that can run SQL Server 2005 Express Edition), 512MB of memory, and a couple of spare gigs of disk space, so you can download and install the tools in Chapter 1. After that, you need just the willingness to read carefully and the patience to actually perform the steps we fully describe for building VB database applications and using SQL. Nothing teaches better than hands-on practice, and that's what our code is designed to provide.

How to Download the Sample Code

All the source code is available at <http://www.apress.com>.