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Microsoft® Access 2010

Programmer's Reference

Teresa Hennig

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PROGRAMMER'S REFERENCE

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To my family and incredible friends, you help me to realize that every day is filled with precious moments—sights, sounds, and emotions to be cherished. May we all remember to pause and savor the blessings that we have, especially the time that we share with those we love.

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—Jerry

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About the Authors



Teresa Hennig loves challenges, solving problems, and making things happen. So it is no surprise that she was immediately hooked on Access; by its tools for rapid development and the ability to quickly create intuitive, user-friendly applications. Within a month, she started her own company as an Access developer and business consultant (1997). With a strong background in business and project management, Teresa (and her company, Data Dynamics NW), focuses on using Access to provide cost-effective custom database solutions. In recognition of her expertise and dedication to the Access community, Teresa has been awarded as a Microsoft Access MVP (Most Valuable Professional) every year since 2006. She continues to serve as President of both the Pacific Northwest Access Developers Group (PNWADG) and the Seattle Access Group. Her leadership, expertise, and service to the Access community have also earned her recognition as a National Community Champion from INETA. Being the lead author of several Access books has afforded Teresa the opportunity to work with esteemed colleagues and to invite others to share the experience of becoming published authors. Learn more at www.DataDynamicsNW.com and www.SeattleAccess.org.



Rob Cooper is a Senior Test Lead at Microsoft. He started at Microsoft as a support engineer in Charlotte, North

Carolina in 1998 and joined the Access 2003 test team in Redmond in 2001. During the Access 2010 release, he led the team that worked on exciting new features such as the Macro Designer, Navigation Control, Web Browser Control, and the design and migration of objects for Access Services. He also helped test the 64-bit version of VBA in Office 2010 and programmability and security in Access 2010. He is currently working on Microsoft Bing. Rob has spoken at user group meetings and conferences such as the Portland Access User Group conference and Office DevCon in Brisbane, Australia, and has written for the Microsoft Knowledge Base. Aside from writing code in Access and C#, he also enjoys spending time with his family cooking, watching movies, going to the zoo and aquarium, and hanging out in and around Seattle.



Geoffrey Griffith is a professional software developer from Colorado, where he owns his own software consulting company. He holds a Bachelor of Science degree in Computer Science from the University of Colorado at Boulder, where he studied software engineering. He began his Access life working on various database systems, starting with Access 2.0, developed at GBS, Inc., a software development firm in Boulder, Colorado. An avid Access user, he worked on the Microsoft Access Team for the Access 2007 release. Today, Geoff continues his work with Access, by writing books about Access and building applications that use Access databases.



Jerry Dennison has over 18 years of professional experience designing and developing MS Access database applications beginning with Access v1.0. He has been awarded the Microsoft Office Access Most Valuable Professional Award for the past four years. Jerry is an active contributor and Administrator at UtterAccess.com, the premier MS Access forum on the web. He is considered by many of his peers to be one of the foremost experts on the Forms of Data Normalization (a set of guidelines for relational databases developed by Dr. E. F. Codd). Jerry currently lives in Easley, South Carolina with his wife of 21 years and their two dogs, Duke and Duchess.

About the Contributing Authors and Technical Editors



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Suzanne, only with you could I have the time and energy to become a contributing author—you are the absolute best!



Doug (Dagi) Yudovich is the Director of Business Information Applications for UW Physicians in Seattle. The department's primary responsibilities range from developing enterprise-level Web-based reports and OLAP objects to developing database applications in support of various business needs for managing data. The applications vary in scope, from stop-gap applications, to bolt on tools, to mission critical-level applications that support up to 250 users. All of the database applications use Access for the FE, with some using Jet as the database platform, and some using SQL Server. Doug is also an Administrator on UtterAccess Forums and UtterAccess's Access Wiki. Joining UA in 2004, Doug progressed through the ranks (VIP, Editor, Administrator). UA is Doug's cyber home, where he shares his passion and knowledge of database design and information management with members who seek help, and with fellow developers discussing best practices. Doug is an active member of the Pacific Northwest Access Developer Group (PNWADG) and a presenter in the Seattle Access Group (SAG). Doug participated in two Developers' Kitchen events with the Microsoft Access Dev Team to work on early development versions of Access 2010. In acknowledgment of his contributions to the Access developers' community in UtterAccess and the user groups, and his work with the Access Dev Team, Doug was awarded as a Microsoft Access MVP in 2009 and 2010.

I'd like to thank my wife, Lisa, who patiently picks up my slack as I dive head-first into new adventures. I love you.

About the Technical Editors



Dr. Jeff Boyce has been providing process and technology solutions to both public and private sectors for over 30 years. Jeff's approach focuses first on business need, emphasizing processes and practices before evaluating suitable technologies. Jeff has designed and developed over 25 applications. Most recently, his integrated Microsoft Office solutions provide data-based applications employing Access, Word, and SQL Server. The support he has provided in the Microsoft Access newsgroups has resulted in his recognition as a Microsoft Access MVP for the past eight years. When not working at his day job, consulting, or offering support in the newsgroups, Jeff enjoys wallyball, swimming, and recreational landscaping.

Jeff acknowledges and thanks his wife, Sue—her forbearance made his contribution possible.



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enables Access developers to build browser-neutral web applications with Access 2010.



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We'll wrap up with a resounding round of appreciation for our five tech editors - and contributing authors. With the incredible new features and dramatic changes in Access, we have relied on their expertise to not only identify potential errors and omissions, but to question our content and writing to help ensure that it is both comprehensive and comprehensible. It is no wonder that they have each been recognized by Microsoft as Access MVPs. It is a pleasure to acknowledge you as an integral part of our team and to the success of this book.

—THE AUTHORS

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I also want to thank my colleagues and great friends who continue to fuel my passion for helping others to learn about and use Access. In particular, I want to express my appreciation for the people in my user groups (Michka, Randy, Brandi, et al.) and the amazing people who are Access MVPs and community experts (Larry, Truitt, Arvin, George, our TEs, the list goes on)—friendships that are priceless!

One of my favorite aspects of being an author is the opportunity to involve and recognize contributions from people from around the world. In addition to our remarkable team of authors and editors, we have the benefit of sharing tips from our esteemed colleagues, Dane Miller, Garry Robinson, Steve Schapel, and Larry Strange. I especially want to recognize and thank Ben Clothier for his dedication, humor, and tenacity. Neither of us had any idea of what was to come when Ben became a contributing author. Even working into the wee hours of the morning, we were still having fun as we completed countless iterations of reviews. That epitomizes a great Access developer—passion, commitment, and collaboration. My thanks to everyone—a project of this magnitude is truly a team effort!

—TERESA

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and Rasika Chakravarthy. Thanks for all of your hard work on this release!

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—ROB

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—GEOFF

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—JERRY

Introduction

Welcome to *Access 2010 Programmer's Reference*, your guide to the new features and opportunities that Access 2010 has to offer. With this release, Access has expanded its reach beyond the desktop and network to join the ranks in the cloud. In support of this new level of connectivity, you will find significant changes within the developer environment that require more decisions, different programming tools, and more options. With changes of this magnitude, you will want to leverage community resources to get up-to-speed quickly so that you are working smarter and more efficiently. That's where this book comes in.

What makes this book so special? In addition to the extensive coverage of subject matter, it is the unparalleled team of authors and tech editors who are as devoted to helping fellow developers as they are passionate about Access. Jerry and Teresa have both earned Access MVP status in recognition of their expertise and contributions to the Access community, and Rob and Geoff have worked on the Microsoft Access test team. They are joined by a team of five technical editors who are all Access MVPs; they are not only technical experts but also seasoned consultants and leading-edge developers. Their areas of focus and expertise cover the spectrum from VBA to macros, and from simple solutions to enterprise deployments to web apps, and all areas in between.

Access 2010 builds on many of the new features that were introduced in Access 2007. Features such as templates, application parts, and Office themes will help you leverage existing resources to quickly create and tailor a custom application. To support the expanding use of macros, we have a new macro designer that makes it faster and easier to create and use macros. With their new functionality, you

will want to learn how to utilize UI and Data macros in local solutions, not just web applications.

For many of us, being able to take advantage of the new features, right out-of-the-box, is more than enough reason to upgrade. So although the primary focus of this book is to help you extend the power of Access, we will also discuss the new features of Access 2010. Because many of you are familiar with prior versions of Access, we also point out some of the major changes, particularly if they affect the way that you will be working.

The goal is for *Access 2010 Programmer's Reference* to be your primary resource and tool to help you leverage Access's built-in functionality along with VBA and other tools in a manner that helps you to create solid, robust applications. Access 2010 makes it easy to start working as soon as it's installed. With the new UI (user interface), people will be building complex applications using the tools and resources that ship with Access. And, with a little outside guidance, they can work a lot smarter, with more confidence, and avoid several pitfalls.

This book is for the typical Access user as well as the seasoned programmer. It will help you utilize the power of Microsoft Access more effectively and help you choose when to let the wizards do the work, as well as showing you how to modify and enhance the code that the wizards create. Access builds great forms and reports that can be customized on-the-fly by using VBA code to respond to a multitude of events. Interactive reports, web apps, and new options for distributing applications exemplify the power and potential of Access.

With all the templates, macros, and built-in features, it is easier than ever to open the program and begin creating tables, forms, and reports with confidence. When you consider how easy it is to get started, you'll realize that it is doubly important to be working smart and in the right

direction. Use this book and its online resources as your guide to better programming and more effective solutions.

Why Use VBA?

Microsoft Visual Basic for Applications (VBA) enables programmers to develop highly customized desktop applications that integrate with a variety of Microsoft and non-Microsoft programs. For example, all of the Microsoft Office System products support VBA. In addition, many third-party programs, such as accounting software packages, mapping software, and drafting programs also support VBA. Those companies often provide an integration tool, or SDK (software development kit), which typically requires VB or VBA to work with it.

VBA is actually a subset of the Visual Basic programming language and is a superset of VB Script (another member of the Visual Basic family of development tools). VBA includes a robust suite of programming tools based on the Visual Basic development, arguably the world's most popular rapid application development system for desktop solutions. Developers can add code to tailor any VBA-enabled application to their specific business processes. Whether you are starting with a blank database or building on a template, you can build complex custom solutions. For example, a construction company can use VBA within Microsoft Access to develop a sophisticated system covering estimating, ordering, scheduling, costing, and inventory control. The look and operation of the system can be tailored for each group and it can easily limit what data a person can view or change.

You might wonder why you should develop in VBA rather than Visual Basic or .NET, which are also robust, popular, and capable programming languages. Using VBA within Access gives you a couple of key benefits. First, you can