

Microsoft® Office

Excel® **2007**
Data Analysis
FOR
DUMMIES®

by Stephen L. Nelson



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Excel® 2007 Data Analysis For Dummies®

Published by
Wiley Publishing, Inc.
111 River Street
Hoboken, NJ 07030-5774
www.wiley.com

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Published by Wiley Publishing, Inc., Indianapolis, Indiana

Published simultaneously in Canada

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Library of Congress Control Number: 2006939598

ISBN: 978-0-470-04599-2

Manufactured in the United States of America

10 9 8 7 6 5 4 3 2 1



About the Author

Stephen L. Nelson is the author of more than two dozen best-selling books, including *Quicken For Dummies* and *QuickBooks For Dummies* (Wiley Publishing, Inc.). In fact, Nelson's books have sold more than 4,000,000 copies in English and have been translated into more than ten other languages.

Nelson is a certified public accountant and a member of both the Washington Society of CPAs and the American Institute of CPAs. He holds a Bachelor of Science in Accounting, magna cum laude, from Central Washington University, and a Masters in Business Administration in Finance from the University of Washington (where, curiously, he was the youngest person ever to graduate from the program), and a Master of Science in Taxation from Golden Gate University.

Nelson's work experience includes stints as a book publisher and packager, as the chief financial officer, treasurer, and controller of a high-technology manufacturer, and as a senior consultant with one of the Big Five public accounting firms.

Nelson lives in the foothills east of Redmond, Washington with his wife, two daughters, and an indeterminate number of mice.

Author's Acknowledgments

The curious thing about writing a book is this: Although an author's name appears on the cover, it's always really a team project. Take the case of this book, for example. Truth be told, the book was really the idea of Andy Cummings, the publisher of *For Dummies* technology books, and Bob Woerner, my long-suffering acquisitions editor. I wrote the manuscript, and then a lot of folks at Wiley expended a lot of effort into turning my rough manuscript into a polished book. Nicole Sholly, project editor, Virginia Sanders, copy editor, Michael Talley, technical editor, and a host of page layout technicians, proofreaders, and graphic artists are just some of the people who helped this book come to life.

Publisher's Acknowledgments

We're proud of this book; please send us your comments through our online registration form located at www.dummies.com/register/.

Some of the people who helped bring this book to market include the following:

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Introduction

So here's a funny deal: You know how to use Excel. You know how to create simple workbooks and how to print stuff. And you can even, with just a little bit of fiddling, create cool-looking charts.

But I bet that you sometimes wish that you could do more with Excel. You sometimes wish, I wager, that you could use Excel to really gain insights into the information, the data, that you work with in your job.

Using Excel for data analysis is what this book is all about. This book assumes that you want to use Excel to learn new stuff, discover new secrets, and gain new insights into the information that you're already working with in Excel — or the information stored electronically in some other format, such as in your accounting system.

About This Book

This book isn't meant to be read cover to cover like a Dan Brown page-turner. Rather, it's organized into tiny, no-sweat descriptions of how to do the things that must be done. Hop around and read the chapters that interest you.

If you're the sort of person who, perhaps because of a compulsive bent, needs to read a book cover to cover, that's fine. I recommend that you delve in to the chapters on inferential statistics, however, only if you've taken at least a couple of college-level statistics classes. But that caveat aside, feel free. After all, maybe *Lost* is a rerun tonight.

What You Can Safely Ignore

This book provides a lot of information. That's the nature of a how-to reference. So I want to tell you that it's pretty darn safe for you to blow off some chunks of the book.

For example, in many places throughout the book I provide step-by-step descriptions of the task. When I do so, I always start each step with a bold-faced description of what the step entails. Underneath that bold-faced step description, I provide detailed information about what happens after you perform that action. Sometimes I also offer help with the mechanics of the step, like this:

1. Press Enter.

Find the key that's labeled *Enter*. Extend your index finger so that it rests ever so gently on the Enter key. Then, in one sure, fluid motion, press the key by using your index finger. Then release the key.

Okay, that's kind of an extreme example. I never actually go into that much detail. My editor won't let me. But you get the idea. If you know how to press Enter, you can just do that and not read further. If you need help — say with the finger-depression part or the finding-the-right-key part — you can read the nitty-gritty details.

You can also skip the paragraphs flagged with the Technical Stuff icon. These icons flag information that's sort of tangential, sort of esoteric, or sort of questionable in value . . . at least for the average reader. If you're really interested in digging into the meat of the subject being discussed, go ahead and read 'em. If you're really just trying to get through your work so that you can get home and watch TV with your kids, skip 'em.

I might as well also say that you don't have to read the information provided in the paragraphs marked with a Tip icon, either. I assume that you want to know an easier way to do something. But if you like to do things the hard way because that improves your character and makes you tougher, go ahead and skip the Tip icons.

What You Shouldn't Ignore (Unless You're a Masochist)

By the way, don't skip the Warning icons. They're the text flagged with a picture of a 19th century bomb. They describe some things that you really shouldn't do.

Out of respect for you, I don't put stuff in these paragraphs such as, "Don't smoke." I figure that you're an adult. You get to make your own lifestyle decisions.

I reserve these warnings for more urgent and immediate dangers — things that you can but shouldn't do. For example: "Don't smoke while filling your car with gasoline."

Three Foolish Assumptions

I assume just three things about you:

1. You have a PC with Microsoft Excel 2007 installed.
2. You know the basics of working with your PC and Microsoft Windows.
3. You know the basics of working with Excel 2007, including how to start and stop Excel, how to save and open Excel workbooks, and how to enter text and values and formulas into worksheet cells.

How This Book Is Organized

This book is organized into five parts:

Part I: Where's the Beef?

In Part I, I discuss how you get data into Excel workbooks so that you can begin to analyze it. This is important stuff, but fortunately most of it is pretty straightforward. If you're new to data analysis and not all that fluent yet in working with Excel, you definitely want to begin in Part I.

Part II: PivotTables and PivotCharts

In the second part of this book, I cover what are perhaps the most powerful data analysis tools that Excel provides: its cross-tabulation capabilities using the PivotTable and PivotChart commands.

No kidding, I don't think any Excel data analysis skill is more useful than knowing how to create pivot tables and pivot charts. If I could, I would give you some sort of guarantee that the time you spent reading how to use these tools is always worth the investment you make. Unfortunately, after consultation with my attorney, I find that this is impossible to do.

Part III: Advanced Tools

In Part III, I discuss some of the more sophisticated tools that Excel supplies for doing data analysis. Some of these tools are always available in Excel, such as the statistical functions. (I use a couple of chapters to cover these.) Some of the tools come in the form of Excel add-ins, such as the Data Analysis and the Solver add-ins.

I don't think that these tools are going to be of interest to most readers of this book. But if you already know how to do all the basic stuff and you have some good statistical and quantitative methods, training, or experience, you ought to peruse these chapters. Some really useful whistles and bells are available to advanced users of Excel. And it would be a shame if you didn't at least know what they are and the basic steps that you need to take to use them.

Part IV: The Part of Tens

In my mind, perhaps the most clever element that Dan Gookin, the author of the original and first Dummies book, *DOS For Dummies*, came up with is the part with chapters that just list information in David Letterman-ish fashion. These chapters let us authors list useful tidbits, tips, and factoids for you.

Excel 2007 Data Analysis For Dummies includes three such chapters. In the first, I provide some basic facts most everybody should know about statistics and statistical analysis. In the second, I suggest ten tips for successfully and effectively analyzing data in Excel. Finally, in the third chapter, I try to make some useful suggestions about how you can visually analyze information and visually present data analysis results.

The Part of Tens chapters aren't technical. They aren't complicated. They're very basic. You should be able to skim the information provided in these chapters and come away with at least a few nuggets of useful information.

Part V: Appendix

The appendix contains a handy glossary of terms you should understand when working with data in general and Excel specifically. From *kurtosis* to *histograms*, these sometimes baffling terms are defined here.

Special Icons

Like other *For Dummies* books, this book uses icons, or little margin pictures, to flag things that don't quite fit into the flow of the chapter discussion. Here are the icons that I use:



Technical Stuff: This icon points out some dirty technical details that you might want to skip.



Tip: This icon points out a shortcut to make your life easier or more fulfilling.



Remember: This icon points out things that you should, well, remember.



Warning: This icon is a friendly but forceful reminder not to do something . . . or else.

Where to Next?

If you're just getting started with Excel data analysis, flip the page and start reading the first chapter.

If you have a bit of skill with Excel or you have a special problem or question, use the Table of Contents or the index to find out where I cover a topic and then turn to that page.

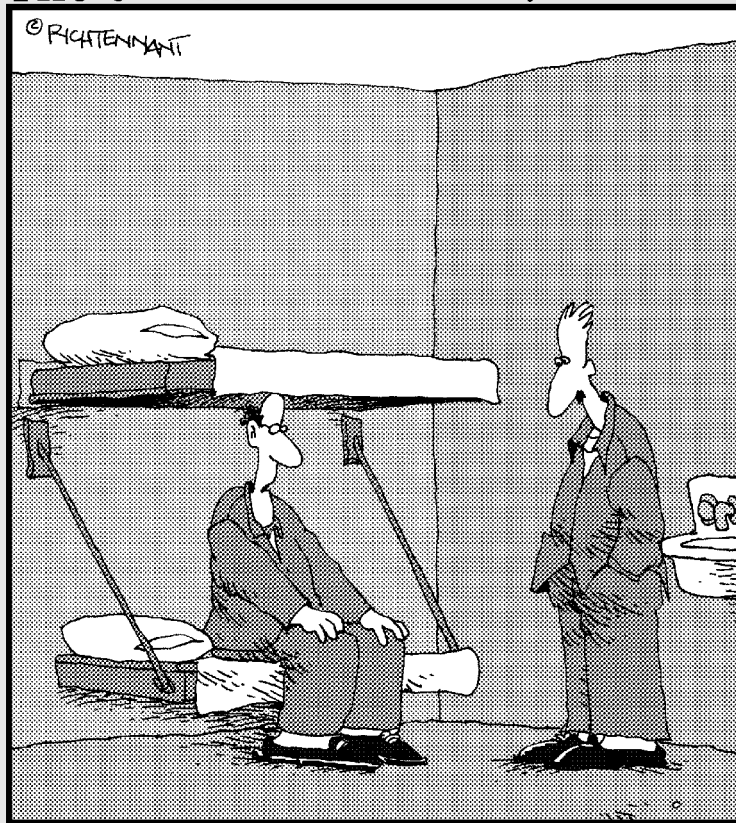
Good luck! Have fun!

Part I

Where's the Beef?

The 5th Wave

By Rich Tennant



"I started running 'what if' scenarios on my spreadsheet, like, 'What if I were sick of this dirtwad job and funneled some of the company's money into an off-shore account?'"

In this part . . .

In Part I, I talk about how you get data into Excel workbooks so that you can begin to analyze it. This is important stuff, but fortunately, most of it is pretty straightforward. Read here to discover what makes an Excel table, how to get data from external sources, and how to clean your data.