

Introduction

Unless you live as a hermit, chances are good that your life is touched by SAS almost every day.

Have you ever received an offer for a credit card in the mail? The bank might have used SAS to select you for the particular offer you received. Remember a recent news article that cited demographic trends in the United States? The Census Bureau uses SAS to crunch its numbers. Were you tempted to buy that new gadget in a big-name retail store? The corporate office might have used SAS to calculate the best price to set for that specific item on that specific week.

The rate you pay for life insurance, the analysis behind pharmaceutical drug trials, the quality of parts used to assemble your automobile — all of these are determined by people who use SAS. You don't see SAS directly from day to day — but, like gravity, it's an invisible force that affects your life.

This book offers a prolonged glimpse into the multifaceted world of SAS software. Read on to discover how people use SAS to influence the world around you. Perhaps you'll see how to grab the reins yourself and use SAS to affect your own sphere of influence.

About This Book

Even though this book is titled *SAS For Dummies*, you absolutely need some smarts to get solid results using SAS. However, the overarching message of this book is that you don't need to be an expert at using software. You just need to know what questions to ask, what data is needed to provide an answer, and how to interpret the results.

This book covers a variety of SAS products. We take a high-level look at some and dive deeply into those that you're most likely to use. The amazing fact is that SAS offers hundreds of software products covering dozens of industries and disciplines. No single person could possibly use them all and still have time for essential activities, such as sleep and personal hygiene. (Hmm, maybe that explains the smell around here.)

And, hey! Here's something else cool about this book: You don't have to read it from stem to stern. Feel free to skip around, reading the sections that cover what you need to know.

This book does *not* address two popular SAS topics:

- ✓ **Learning the SAS programming language:** SAS software has been around for more than 30 years, and you can find plenty of books about SAS programming. Indeed, one goal of this book is to show you how much you can do with SAS without having to become a SAS programmer — unless you really want to.
- ✓ **Life at SAS Institute Inc., the makers of SAS software:** SAS, the company (along with its founder Jim Goodnight) has had more than its 15 minutes of fame on TV shows (such as *60 Minutes* and *Oprah*) plus a big dose of coverage in business magazines (such as *Fortune* and *Forbes*). The stories are overwhelmingly positive (not featuring anyone trying to blot out the camera view with his palm). SAS is famous for being a great place to work. Because we, the authors, each hold day jobs at SAS — and we really like those jobs — that's all we'll say about that.

Foolish Assumptions

To better manage the task of writing this book, we had to begin with some assumptions about you, the reader. Here they are:

- ✓ SAS software runs on many different types of computer systems, but the majority of people experience it from Microsoft Windows. So, the examples provided are presented as if you're using a PC. We assume that you know your way around a PC, clicking the mouse, selecting menus, and so on.
- ✓ As we stated earlier, we don't assume that you are a SAS programmer or that you even aspire to be one. However, if you are or if you do, you can still find this book useful to round off your SAS knowledge.

What Not to Read

Occasionally, you'll see some sidebar topics or Technical Stuff icons in the margin that indicate an historical or a technical side point. You can skip those if you want to, but reading them will give you that extra edge when SAS comes up in the discussion at the next cocktail party you attend. Study up and impress your friends!

Conventions Used in This Book

This book contains lots of descriptive information about SAS software. Because a picture is worth — well, you know — this book has lots of figures of the software in action. (*Action* is a relative term; after all, this *is* business and analytical software, not *World of Warcraft*.)

- ✓ You'll find plenty of step-by-step instructions to accomplish specific tasks. You can follow along with these if you have the software handy; otherwise, you can use your imagination and pretend how much fun it is.
- ✓ When we show a URL, filename, path, data set, or code within regular text, we set it off in a monospace type, like `this`.
- ✓ When we want you to type something, we bold the characters you type (such as, **type this**).
- ✓ If you get the munchies while reading this book, it's because most of the examples refer to data with a candy theme.
- ✓ The data files discussed in the book actually ship with *SAS Enterprise Guide*, which is a SAS application that features prominently in this book.

Icons Used in This Book

All the information in this book is special; we would not have included it otherwise. But some information that we provide is more special than the rest. To draw attention to its “specialness,” we tagged it with some eye-catching little icons:



The Tip icon calls out a sentence or two that might prove to be a real time-saver in your work. (You're welcome.)



Got a mind like a steel sieve? Well, you might want to reserve some space in your memory banks for the content next to the Remember icon. We use these as a way to emphasize important points or concepts.



Hear the voice in your head yelling “Danger Will Robinson! Danger!”? Well, there is little danger really, as long as you heed the advice shown near the Warning icon.



This book contains many little gems of technical information. You can still use SAS if you don't read and understand this stuff, just like you can still enjoy watching hockey if you don't know what "icing" means. But, as any fan will tell you, it's more fun knowing what it all means.

How This Book Is Organized

Yes, this book *is* organized; the chapters don't simply appear in random order. There are six major parts, each of which includes some relatively self-contained chapters. Don't feel like you need to read them in order though. Please, make yourself at home and read whichever chapters interest you the most. (Really, it's okay; we won't be offended.)

Part I: Welcome to SAS!

SAS, meet reader. Reader, meet SAS. In Part I, you get to know each other in this overview of what SAS software is about and what it can do for you. You'll find an introduction to SAS Enterprise Guide and some examples for getting quick results without having to be an expert.

Part II: Gathering Data and Presenting Information

Data is everywhere, but information is scarce. Part II shows how you can use SAS to take data and turn it into information you can use. And even better, you can see how to turn it into information that others will use and thank you for. You'll find out how to build basic reports and graphs that actually convey useful information.

Part III: Impressing Your Boss with Your SAS Business Intelligence

Part III is a whirlwind tour through the concepts of statistics and analytics. You get an overview of the basics, as well as some examples of how those are applied to help you understand and predict behavior, as represented in data. Correlations, causality, forecasting — those topics and others are discussed here.

Part IV: Enhancing and Sharing Your SAS Masterpieces

Part IV could be titled “SAS: It’s Everywhere You Want to Be” or “SAS: It’s Not Just for Programmers Anymore.” You’ll see how you can use SAS from your desktop, on the Web, in Microsoft Excel, and even in Microsoft PowerPoint!

Part V: Getting SAS Ready to Rock and Roll

Part V provides the high-level view of how to install and configure SAS software. You might come away with an enhanced appreciation for whomever performs that task for you. This part also covers the concept of data collection and preparation — the repeatable process for making data available for analysis. And for the SAS programmers in the audience, you can find a candid overview of SAS Enterprise Guide, your new friend.

Part VI: The Part of Tens

Part VI is where we stored the nuggets of knowledge that you can count on both hands (or feet!). Even if you already consider yourself a SAS expert (maybe your Mom gave you this book for Christmas), we promise that you will discover something new here. Check out Part VI for ten productivity tips for SAS Enterprise Guide users, ten “must-know” items for SAS administrators, and links to more resources.

Where to Go from Here

After you read through this book, you might crave more details about specific areas that we cover. (Or maybe those cravings are related to the candy-themed examples.) The best starting place for more information is the SAS support Web site at <http://support.sas.com>.

If this book transforms you into a card-carrying SAS user, your next step might be to seek out others like you. That will be easy because millions of people all around the globe use SAS. And do you know what? They like to get together every so often in SAS user groups. User group meetings and conferences provide a great way to learn more from your peers about how to use SAS in practical and creative ways. Again, user group information is available from SAS at <http://support.sas.com>.

