INTRODUCTION

The Publications Division at SAS Institute Inc. produces documentation for all software products in the SAS System. Over the past two years we have planned a major redesign of our software documentation, both in content and in appearance. This paper describes the kind of documentation the division plans to produce for future software releases; it also shows how we are implementing the plan in documentation for base SAS software.

Documentation in Version 5

In Version 5 and earlier releases, SAS software documentation centered on the user's guide for an individual product. Examples include the SAS User's Guide: Basics, Version 5 Edition, the SAS User's Guide: Statistics, Version 5 Edition, the SAS/GRAPH User's Guide, Version 5 Edition, and so on. The user's guide for a product was sometimes large and was oriented primarily toward reference, with a quick-reference card bound in. The same book contained instructional examples to teach you how to use the software. This approach worked well when the SAS System was smaller, but as the SAS System grew, you needed separate reference and instructional material. We published several books that were primarily instructional material including the following:


All of these books have been very popular, emphasizing the need for more material of this type.

Plans for the New Documentation

In planning documentation for future releases, we took a comprehensive look at the needs you had expressed during Version 5 and created a new set of books—a new documentation architecture—that responds to those needs. This series of books, which we will phase in gradually over several releases, includes the following:

- introductory guides
- usage guides
- reference guides
- syntax guides
- operating system specific documents.

Overall, the new documentation architecture applies to all products in the SAS System; however, not every product requires every book. And, in some cases we will combine books into one volume.

This paper introduces our new documentation and shows how the documentation for base SAS software answers the needs you have expressed.

AUDIENCE

Each type of book is intended for a different audience. While we recognize that our audience is very diverse indeed, for our purposes, we divide it into three categories. In the definitions that follow, "new" means new to the SAS System.

New computer-naive users
do not know how to write SAS programs (or any computer programs), but they are willing to learn. They already know how to use a terminal and how to access and use software. In addition, they have access to help (books, courses, and humans), understand the concept of a computer file, and recognize a need to use SAS software.

New computer-literate users
do not know how to write SAS programs, but have had some computer programming experience and know the fundamentals of programming logic. They probably know why they need to use SAS software.

Experienced users
know that the SAS System is a programming language and have written SAS programs using DATA and PROC steps. They understand SAS data sets. In addition, they may have used add-on products and may be familiar with our documentation.

CONTENT AND APPROACH TO MATERIAL

The material covered varies from book to book as does the approach to the material. The approach in the reference books is component-oriented. That is, these books focus on the software, describing all features in detail. Introductory guides and usage guides, on the other hand, are task-oriented. These documents focus on performing a particular task rather than on explaining details of the software.

Table 1 summarizes the audience, content, and approach of each type of book. Later, we'll focus more on the individual types.
Table 1 Comparison of Types of Books

<table>
<thead>
<tr>
<th>Audience</th>
<th>Content</th>
<th>Approach</th>
</tr>
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<tbody>
<tr>
<td>Introductory Guide</td>
<td>Computer-naive and new computer-literate</td>
<td>Basic introductory material and commonly used features</td>
</tr>
<tr>
<td>Usage Guide</td>
<td>New computer-literate and experienced</td>
<td>Begins with commonly used features, May require more than one volume.</td>
</tr>
</tbody>
</table>

As the table shows, the simplest of the books is the introductory guide. It uses a step-by-step, task-oriented approach to some of the most commonly used features of the system.

The next level of complexity in the documentation is the usage guide. This type of book is new to SAS documentation. Notice the overlap of audience between the introductory guide and the usage guide. Both books are for computer-literate users who have not used the SAS System before. The introductory guide is also intended for computer-naive users; the usage guide, for experienced SAS users. The usage guide starts with simple examples and progresses to more complex ones. In fact, we built this book around examples. It teaches you how to do particular tasks; it does not teach you the product's full functionality.

Where do you go when you want to know every last detail about your favorite SAS software product? You go to the reference guide. This book is aimed at the same audience as the usage guide, but the content and approach are different. The good news here is that the base reference guide is now split into two books so that it is more manageable. The approach in these books is component-oriented, not task-oriented.

The transition to this new style of reference documentation will be a gradual one. For the next release of the SAS System, the book dealing with the base SAS language will be entirely new. The book dealing with SAS procedures will follow suit in a later release.

A syntax guide is a quick reference aid. It is aimed at the same audience as the reference guide, but it contains only syntax. For a system as large as the SAS System has become, a syntax guide is preferable to the reference cards we used to provide.

This paper focuses on books that document the SAS System independent of the host computer. However, operating system specific documentation is a necessity. In response to your requests, the new documentation will cover operating system specific information independently of general reference material so that you do not have to sort through lots of information about other operating systems while you are trying to use the SAS System on one particular host.

Now that we've had a brief look at the major types of books in the new documentation architecture, let's look more closely at the ones that document base SAS software for all systems.

INTRODUCTORY GUIDES

Introductory Material in Version 5

In Version 5, people learning about the SAS System used the SAS Introductory Guide, Third Edition. It has been both popular and durable, and many of you have told us how useful it is.

However, because the SAS System has grown and changed over the years, we need a new introductory guide that encompasses additional software features. The Publications Division is now planning a new introductory guide for base SAS software. We have done quite a bit of planning so far, and we will do more planning—and listening to you—before we begin writing.

Planning a New Introductory Guide

In planning a new introductory guide, we made the following decisions:

- keep the book short—100 to 125 pages
- address base SAS software
- get users started without overwhelming them with detail
- recognize that beginners make mistakes in programming and show them how to correct their mistakes
- treat the SAS Display Manager System as a separate topic.

The new introductory guide will contain the same topics as the first ten chapters of the SAS Introductory Guide, Third Edition, but they will be updated, reorganized, and expanded. We will add a chapter on debugging SAS programs and an appendix for display manager.

We feel that a new introductory guide will be very popular with users, and it is high on our priority list.

USAGE GUIDES

For a long time, users have been asking for a book that falls between the introductory guide and the reference guides. The usage guide is it! This book takes a task-oriented approach. Its goal is not to present all the features of a part of the SAS language or all the options available with a procedure; rather it assumes you want to perform a certain task, and tells you how to do it. A typical usage guide will contain no more than 500 pages. To ensure that you can easily perform all the tasks the book describes, the documentation includes all the statements and all the data you need to create every data set used in the book.

All the examples in the plotting chapter are based on a single data set containing information on the Dow Jones Industrial Average between 1954 and 1987.

Here, for instance, you first see how to create the data set; next, a simple PROC PRINT step displays the data, as shown in Output 1.

```
libname stocks 'your-data-library';
data stocks.highlow;
infile 'your-tracet.tp';
input year ;7 hdate dah? bigh a24 Idate Qat.1. low;
format Mate Pl:ah da.te1.;
run;
```

```
proc print data=stocks.highlow;
title 'The SAS Data Set STOQS.HIGHLow';
run;
```

```
1954 3102525 401.70 1525068 250.87
1955 3100257 431.60 1735065 328.26
1956 3106256 521.05 2235068 463.31
1957 3125067 520.77 2205077 419.79
1958 3106318 631.66 2205078 576.99
1959 3106319 679.38 0095099 574.46
1960 3150606 882.97 2205078 589.85
1961 3160607 736.01 0124081 410.25
1962 3170602 726.01 2207082 525.75
1963 3182623 767.21 0234092 944.70
1964 3192624 571.71 0234092 705.85
1965 3192625 415.26 2207085 844.99
1966 3214926 996.15 0724094 744.22
1967 3250427 997.32 2234096 838.13
1968 3300428 1000.00 0310100 858.12
1969 3350429 1027.04 1000.00 1027.04
1970 3400430 1056.57 1000.00 1056.57
1971 3450431 1185.32 1056.57 1185.32
1972 3500432 1314.11 1056.57 1314.11
1973 3550433 1424.12 1056.57 1424.12
1974 3600434 1534.12 1056.57 1534.12
1975 3650435 1644.12 1056.57 1644.12
1976 3700436 1755.12 1056.57 1755.12
1977 3750437 1866.12 1056.57 1866.12
1979 3850439 2088.12 1056.57 2088.12
1980 3900440 2199.12 1056.57 2199.12
1981 3950441 2310.12 1056.57 2310.12
1982 4000442 2421.12 1056.57 2421.12
1983 4050443 2532.12 1056.57 2532.12
1984 4100444 2643.12 1056.57 2643.12
1985 4150445 2754.12 1056.57 2754.12
1986 4200446 2865.12 1056.57 2865.12
1987 4250447 2976.12 1056.57 2976.12
```

```
The first plot you see is the simplest plot you can make from the data—one in which PROC PLOT does most of the work for you. Here are the SAS statements that produce that plot, as shown in Output 2.

```
options pagesize=411 linesize=16;
proc plot data=stocks.highlow;
plot high=year;
title 'Dow Jones Industrial Average';
label high='Hlghest Value'
year='Year';
run;
```

Having dressed up this one plot, you go on to creating multiple plots. First you learn how to create multiple plots with one plot on each page. The next step is to fit both plots onto one page (see Output 3).
Then, you overlay the plots so that sets of variables appear on one set of axes (see Output 4).

Output 4 Overlaying Two Plots

Once again, the code for each example simply adds to the original code.

Finally, we show you how to make the plot more attractive by removing the legends and boxing the plot. As usual, we simply add to the previous code to produce this output, which appears in Output 5.

Output 5 Removing the Legend and Boxing the Output

By the time you finish the chapter, you've been introduced to the PROC PLOT procedure—the PROC PLOT statement and four of its important options and the PLOT statement and four of its important options. You've also seen several of different ways of requesting plots.

The key differences between the approach in this book and the approach in a reference guide are

- The usage guide presents enough material to allow you to use a variety of the procedure's features but, unlike the reference guide, does not cover all features.

- The usage guide introduces the features in the order you need them to perform the task at hand. In general, the code for one example builds on the code in the previous example, whereas the examples in the reference guide are more discrete.

At the end of each chapter in the usage guide, we summarize the syntax of the tools used in the chapter. We also point you to more information on related topics. For instance, in this chapter we point out some of the additional features of PROC PLOT and mention other SAS procedures that you might want to use to produce graphical output.

This approach to the material will satisfy your need for a book somewhere between the introductory guide and the reference guide.

REFERENCE GUIDES


Scope

One important point is the definition of the term language. In base SAS software documentation, language means all features except procedures. The division of base SAS software documen-
tion into language and procedures first occurred in Release 6.01 documentation for personal computers. The new documentation will maintain this division. A typical volume will contain at most 800 pages.

In general, SAS Language: Reference documents portable language features—those that are the same for all host platforms. Material specific to a particular platform appears in a separate book directed toward that operating system, as you have requested over the past few years.

Some material, such as the macro facility and the micro-to-host link, will continue to be documented separately. Those features are big enough to warrant their own manuals.

Organization

SAS Language: Reference is organized into two main parts. The first part, Description of the SAS System, contains background material. Chapters contain essay-type material on specific aspects of the SAS System.

For example, the chapter “Components of the SAS Language” contains background material on all the components of the language—statements, functions, informats, formats, and so on. The chapter “Rules of the SAS Language” discusses topics such as BY-group processing, SAS date and time values, and how to write SAS expressions. Presenting all the information about each part of the language in one place gives you a better idea of how the individual parts work and of how they relate to each other.

“SAS Files” is a typical chapter. It discusses the concept of the SAS data library and each type of SAS file that can reside in a library. It also gives an overview of data storage in the SAS System as a whole. This is a rather complex topic, but the reference format makes the material easy to find. The chapter table of contents lists the page number of each heading, in addition, the page headings (called running heads in publishing terminology) identify the part of the chapter printed on that page.

The second part of SAS Language: Reference contains reference information about individual components—statements, functions, informats, formats, and so on. Each chapter contains all the entries for those components in alphabetical order. For example, all DATA step and global statements appear in one chapter. One chapter is devoted entirely to informats—all numeric, character, and date and time informats. Display manager windows have a separate chapter, as do display manager commands and text editor commands.

To get an idea of how an individual reference entry for a statement looks, consider the INPUT statement. The most important point is that we have divided long, complicated entries into separate smaller entries. For example, in Version 5 the INPUT statement required 19 pages. In the new documentation, the INPUT statement is divided into five entries: COLUMN, LIST, FORMATTED, NAMED, and GENERAL (for general information not associated with a particular style of input).

Each reference entry begins with a header block that gives crucial information: the name of the entry, a brief description, the classification of the entry (for statements, the classification is either DATA step or Global), and the keyword used with the HELP command. In the body of the entry the syntax appears first, followed by the description and examples. The last item in an entry is a “See Also” section that refers the user to other relevant features.

Many of you have asked for more information in running heads. Running heads in reference chapters now contain the name of the individual entry as well as the chapter name or number.

Reference entries for smaller items such as functions, informats, formats, and system options follow the same general plan. A header block gives brief information about the feature. The entry for a function gives the name of the function, a brief description, the category into which it falls, and the HELP entry. The body of the entry shows the syntax first, then the description, examples, and a “See Also” section. Pages use dictionary-style running heads to show the first item on a left-hand page and the last item on a right-hand page.

The SAS Display Manager System also benefits from the division of reference material into background and specific entries. Each window is now a separate entry. The header block gives the name of the entry, a brief description, the category into which the window falls, and the HELP entry for the window. The body of the entry contains a picture of the window, the command used to invoke the window, a description, and a list of commands available in that window. Display manager commands are defined in their own entries, separate from the window, as are text editor commands.

SYNTAX GUIDES

In the past, SAS software manuals have contained reference cards—a quick source of information about basic SAS syntax. However, as the SAS System has grown, the information needed in a quick reference to syntax has also grown. To accommodate these changes, the new documentation introduces, for base SAS software, a separate reference booklet—the syntax guide. A syntax guide is a quick, complete reference aid to the syntax of a particular software product.

CONCLUSION

In the Publications Division, we plan to document future releases of the SAS System in a way that maximizes the impact of each book: reference material in reference books (with a syntax guide as a reference aid), task-oriented material in usage guides, and introductory material in introductory guides. In this way our books can best fulfill your needs for SAS software documentation.

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