

An OS/2 Help File for SAS[®]

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Abstract

This paper describes a documentation method used by IBM for SAS educational classes to help students learn SAS programming techniques. While this method does not replace all the features of SAS on-line help, it does provide a wealth of information for the novice and professional programmer using SAS on a PC running OS/2.

Introduction

The lack of adequate documentation for IBM's education classes in SAS was a concern for instructors teaching SAS programming techniques. SAS students used the MVS/TSO SAS.CLASS data set (maintained by SAS programmers) for class notes and examples of SAS procedures, functions, and other learning tools. The data set was also used by seasoned programmers as a quick reference. The SAS.CLASS is easy to use and has good software search capabilities, making programming a much simpler task. Other uses include SAS program building utilizing cut and paste facilities, with specific sections placed and edited to fit the program being written. But this data set is limited in not being available on systems other than MVS/TSO hosts.

After reading an article on OS/2 help files, I decided to convert my MVS/TSO SAS.CLASS data set to an OS/2 .INF file. This allowed my customers running SAS on a PC with OS/2 the same benefits as our host users. While this system of documentation does not replace all features of on-line help, it does provide a wealth of information for SAS programmers.

Background

IBM's semiconductor production facility in Essex Junction, Vermont, has a large SAS community and three manufacturing fabricators that use SAS for database management. All production process data are collected and stored in SAS databases. Because engineers need a considerable amount of SAS knowledge to access and analyze process data, SAS support is essential to them. This support runs the gamut from answering questions to providing SAS classes on specific topics that range from SAS introductory classes to advanced macro programming. An OS/2 .INF help file could be a valuable tool for engineers when writing SAS data analysis programs.

The SASCLASS.INF Data Set

One day, while perusing class notes, I concluded that my students would benefit from a soft copy. I built members within a partitioned MVS data set consisting of my class notes from SAS classes, and then decided to make example members for all the SAS routines used in my programs. So, I created a partitioned data set called SAS.CLASS and put all the class notes into it. Each student was given "read access" to the data set so they could review, copy, or print any required information. I also built other SAS programming "modules" based on the answers to questions from my SAS customers. Finally, I designed help files containing information about those SAS topics routinely found in the SAS manuals. With these soft-copy files, I could quickly access information and, with cut and paste facilities, could place lines of code from SAS.CLASS into my programs.

The Conversion

The MVS/TSO SAS.CLASS data set benefits many users, but there are SAS users who are not on this host system and do not have access to this data set. Since most of my customers have personal computers running OS/2 I converted my SAS.CLASS data set into an OS/2 .INF file, but it was not as simple as expected. The members of SAS.CLASS had to be concatenated together and down-loaded to my PS/2's hard drive. Then, appropriate tags were added to create subtitles and highlight keywords and, because colons and ampersands are interpreted as the beginning of a compiler tag, they had to be changed to IPFC tags. Introduction tags and layout tags were placed at the beginning and end of the document and, after several compilations, the finished .INF file was distributed to interested customers. The nice thing about OS/2 .INF files is you can link with hypertext to other sections. You can also link to bitmap/metafile images of screen shots of the SAS panel, graph, or code in question.

The Uses

Students use the SASCLASS.INF data set for many purposes. Since it contains the latest set of class notes, a student with a question can use it as a referral. Having the SASCLASS.INF data set available also saves paper. Handouts are no longer necessary for any of my classes. Students are given a disk with the SASCLASS.INF file on it. Once they copy the file to their hard drive, they can place a SAS HELP icon on their desktop for quick and easy access. This makes class notes available to them any time. The .INF interface is very straightforward and easy to use (Figure#1). Students also use the SASCLASS.INF data set to build their own SAS programs. They can copy any member into their programs and then fill in the blanks with the appropriate data set names, variable names, and SAS options. As a result, students spend less time searching the SAS manuals for answers to questions. If an answer cannot be

found in SASCLASS.INF, a module is created that contains the solution to the problem on a particular subject.

The Benefits

The SASCLASS.INF data set significantly reduces data processing costs. Since the SASCLASS.INF file resides on the workstation hard drive (or on floppy if preferred), host DASD is saved. The only costs connected with SASCLASS.INF are my time and a small amount of hard drive space (approximately 150k). This file also serves as a quick and easy access to information. A great deal of time is now being saved handling referrals for answers to customer questions. Now, when a question is answered, a SAS.CLASS section is created and the answer documented.

Conclusions

As the number of customers requiring support continued to grow, the need for assistance became imperative. The SASCLASS.INF file has proven to be a valuable asset for both teaching and consulting. The SASCLASS.INF approach to providing SAS students with the necessary tools for writing their own programs has been very successful at IBM.

A sample of the SASCLASS.INF file is provided on floppy disk to help SAS instructors develop a similar approach for documenting class notes and help files. Having this asset available saves both time and money.

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