A Poor Man's SAS/ASSIST® Software

Tracy L. Lord
IBM Microelectronics Division
Essex Junction, VT 05452

Abstract

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

Introduction

The lack of adequate documentation for IBM's education classes in SAS was a concern for instructors teaching SAS programming techniques. The SAS.CLASS data set, maintained by SAS programmers, was introduced to provide class notes and examples of SAS procedures, SAS functions, and other SAS learning tools. It is used by SAS students for class notes and by seasoned programmers as a quick reference. Because of its ease of use and software search capabilities, the SAS.CLASS data set makes programming much simpler. Other uses include the building of SAS programs utilizing cut and paste facilities, with specific sections placed and edited to fit the program being written. While this system of documentation does not replace all features of SAS/ASSIST or on-line help, it provides a wealth of information for both the novice and professional programmer.

What is SAS/ASSIST?

SAS/ASSIST software is a task-oriented, menu-driven interface to the SAS System that allows the average SAS user to access data and build SAS analysis programs. The user selects databases, variables, and other SAS programming tools from a menu of choices using a point and click facility. The code is combined into a program and can be run on-line or saved for later use. A key advantage of this software is that it takes care of all program syntax, which makes data retrievals, analysis, and presentations quick and effortless for those people with little or no SAS knowledge.

As a SAS instructor, I was intrigued by this new method of writing SAS applications. The opportunities appeared limitless; managers without a SAS background could monitor their process sectors without having to call engineers away from their problem-solving duties, and engineers would not need to spend valuable time searching for correct SAS syntax. In addition, non-SAS users could finally access data without having to receive hours of SAS instruction.
Background

IBM's semiconductor production facility in Essex Junction, Vermont, has a large SAS community and three manufacturing (MFG) fabricators that use SAS for database management. All production process data is 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. These topics range from SAS introductory classes to advanced macro programming. SAS/ASSIST could provide engineers with a valuable tool with which to analyze process data.

The Problem

The economic downturn of the late 1980's and early 1990's made it difficult for IBM to lease the SAS/ASSIST product, however, the acquisition of a menu-driven programming tool remained a priority. As time passed, people began asking for introductory classes in SAS. Armed with only a set of foils, I began teaching both SAS syntax and the SAS programming language. As our people became SAS literate, I became even more anxious to acquire SAS/ASSIST. Unfortunately, we never did.

The SAS.CLASS Data Set

One day, while perusing class notes, I concluded that my students would benefit from a soft copy. To acquire it, I built a partitioned MVS data set with members consisting of the examples from SAS classes. But why stop there? Why not make example members for all the SAS routines used in my programs? I created a partitioned data set called SAS.CLASS and put all of the class notes into it. Each student was given "read access" to the data set so they could review, copy, or print any information they required. 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 soft copies of these files, I am able to quickly access information and then, with cut and paste facilities, place lines of code from SAS.CLASS into my programs.

The Uses

Students use the SAS.CLASS 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 SAS.CLASS data set available also saves paper. Handouts are no longer necessary for any of my classes. Students complete a roster sheet, stating their names, location, level of SAS knowledge, and system ID. They are then given RACF authority to read the SAS.CLASS data set, which makes class notes available to them any time. Students also use members of the SAS.CLASS 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 can not be found in SAS.CLASS, a module is created which contains the solution to a problem on a particular subject.
The Benefits

The SAS.CLASS data set has significantly reduce data processing (DP) costs. We no longer saw the need to lease SAS/ASSIST, which is important to our cost-conscious DP people. Though SAS/ASSIST has more features than the SAS.CLASS data set, the only costs connected with SAS.CLASS are my time and a small amount of DASD. The data set also serves as a useful repository for 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 member is created and the answer documented.

Conclusions

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

Sample files from the data set are provided to help SAS instructors develop a similar approach for documenting class notes and help files. Having this asset available saves both time and money.

SAS and SAS/ASSIST are a registered trademarks of SAS Institute Inc. in the USA and other countries. ® indicates USA registration.