

## A SAS\* INFORMATION CENTER TOOL

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### INTRODUCTION

SAS\* provides business professionals with a powerful information processing and management tool. The only thing required of the user is to learn the relatively simple rules of the SAS\* language. Unfortunately this can be threatening to users who are uncomfortable with computer software or terminals. The problem is compounded when familiar hardware and software are being replaced and the user is required to learn new and unique applications. This paper will describe how an organization took advantage of the features of SAS/AF\* to develop a menu-driven end-user computing tool that overcame the fear of new software and provided an easy transition to the use of SAS\*.

### BUSINESS BACKGROUND

Basin Electric Power Cooperative is a member-owned electrical generation and transmission supplier. It serves an area of more than 400,000 square miles in portions of Colorado, Iowa, Minnesota, Montana, Nebraska, North Dakota, South Dakota and Wyoming. The Cooperative provides wholesale electricity for 120 rural electric systems which serve more than 440,000 meter installations representing about 1.2 million consumers. In 1986 the Cooperative converted its data processing systems from Honeywell to IBM and SAS\* was selected as the mainframe end-user computing software for the new system. The loss of the Honeywell's end-user computing software resulted in a large number of users who needed immediate access and training on the use of SAS\*. The users were reluctant to use SAS\* because it meant learning the syntax of new software on a new mainframe using unfamiliar terminals. The SAS\* Information Center Tool was developed to provide the cooperative users with easy-to-use menu-driven access to the SAS\* data management system.

### MAIN FUNCTIONS

The Information Center Tool is a SAS/AF\* application that permits the user to perform basic data management functions in SAS\* through the use of menus and fill-in-the-blank screens. The basic features provided in the tool are the ability to create and define a SAS\* dataset, manage the dataset (copy, delete, rename), load data through the use of input screens and generate reports. The information center tool is activated by a user through the execution of a TSO clist (Figure 1). This clist allocates the common TSO file (CATA) which contains the SAS/AF\* application, the user's TSO file (FILE) on which all user

created data sets are stored, the user's TSO file (MYCAT) on which he or she can place individual SAS/AF\* applications and a TSO partitioned data set (PROG) on which display manager programs can be saved when the user develops more expertise with the software. All of the file allocation takes place behind the scenes and is transparent to the user. After the allocation of the required files, SAS\* is executed with an initial statement that displays the main menu of the information center tool (Figure 2). By selecting the appropriate number or letter on the main menu screen, the user can activate the function that is desired. The "Individual Application" option is generally not used by the beginning SAS\* user. It was included in the main menu for advanced users who want to execute individually developed SAS/AF\* applications through the Information Center Tool menu.

### FILE MANAGEMENT MENU

The file management menu (Figure 3) is displayed upon the selection of option 1 of the main menu. Within the file management function the user can create a new file, list existing files, copy a file, delete a file and rename a file. In addition the variable names, formats, informats and labels in the file can be changed.

If the user wants to create a new SAS\* dataset, he/she simply provides the name of the new file. The application will then display the PROC FSEDIT definition screen for the identification of the variables in each observation. Selection of option 2 on the file management menu provides the user with a list of the SAS datasets that currently reside on the user's file.

The selection of the copy function (option 3) on the file management menu permits the user to duplicate a SAS\* dataset simply by providing the name of the dataset to be copied and the name of the new dataset. In the copy process the user has the option of adding variables to the new data set, changing variable values, dropping variables or creating a null data set with no observations. An on-line help screen is available that provides instructions on valid entries for each of the file copy options.

Selection of option 4 of the file management menu executes the DATASETS procedure on line. In this procedure the user is permitted to delete SAS datasets, rename SAS datasets and change the variable attributes (format, informat, label).

## DATA MODIFICATION

The "Manage Data" selection on the main menu brings up a dataset identification screen in which the user fills in the name of the data set to be updated. The execution of this program uses PROC FSEDIT to provide full screen editing of the dataset. The information center tool creates an input screen catalog for each SAS\* dataset which permits the user to customize the input screen for that dataset.

## REPORT GENERATION

Selection 3 on the main menu brings the report generation menu to the terminal screen. There are two options for the generation of reports on this menu. Option 2 for customized reports is for the advanced SAS\* user who wants to produce specialized reports from the menu. When this option is requested the information center tool moves the control to the user's own SAS/AF\* catalog area where individualized reporting applications can be developed.

The selection of option 1 on the report generation menu is for the generic report generator. This option brings up the report generation screen (Figure 4) where the user can produce reports from any SAS\* dataset simply by providing the name of that dataset. The screen provides spaces in which the user can specify which variables are to be shown on the report, the selection criteria for the observations to be used in generating the report, the variables on which the report is to be sorted, which variables are to be summed and the title of the report. There is also a feature which will show the user the variable names of the dataset. This is handy when the user can't remember the actual spelling of the variable that was used. The user can have a report displayed on the terminal screen or printed at any of the cooperative's mainframe printers. This is done by providing the name of the printer on the report generation screen. The user can also tell the application if the printer uses 8 1/2 x 11 paper and the report width will be adjusted accordingly. Behind the report generation screen is a complete help screen that provides detailed instructions on what each report option is for and how to fill it in. This includes instruction on observation selection by character variables, numeric variables and date variables.

## OTHER BENEFITS

In addition to providing an easy, ready-to-use data management and report generation tool for the end user, the Information Center Tool also proved to be an excellent training vehicle for SAS\*. Given the natural reluctance of many end-users to work with an unfamiliar software application, the Information Center Tool was easy enough to learn that users were willing to give it a try. After a short period of

use, the cooperative found that many of the SAS\* users had become advocates of the software. When a user required additional functions that were not available through the Information Center Tool, they were comfortable enough with their current datasets to learn how to use the SAS\* Display Manager text editor to develop individualized reporting programs. By meeting with the users one-on-one and showing them how to include a saved program and modify the selection criteria to produce the desired report, we found that certain users quickly began using SAS DATA steps and PROC steps to create additional SAS\* datasets and reports.

The Information Center Tool was the primary means of introducing SAS\* to the cooperative's computer end-users. Through one-on-one demonstrations and word of mouth, the software came to be accepted as a valuable end-user tool. Interest in the software reached the point in early 1988 that a three and a half hour class entitled "Introduction To SAS" was developed to provide a formal classroom method of showing new SAS\* users how to use the Information Center Tool. The popularity of this class and the increasing user interest in the features of SAS\* has led to plans for the development of additional classes to provide the end users with training on the use of the SAS\* Display Manager text editor.

## CONCLUSION

The selection of SAS\* as Basin Electric Power Cooperative's end-user computing software provides the organization's business professionals with a versatile and powerful information management tool. The early development of the Information Center Tool using SAS/AF\* decreased the amount of learning and experience required to effectively use the product. The Information Center Tool was designed to provide only the basic data processing needs. It was originally planned that future enhancements to the application would eventually provide a menu-driven door to all of the SAS\* functions, including statistics, graphics and project management. As the application was used, a previously unrecognized benefit was identified that made such enhancements undesirable. The application in itself taught the user sufficient SAS\* rules to provide the basis for the use of SAS\* Basics in the Display Manager System. Thus the Information Center Tool serves two purposes: a way for the user to become immediately productive in the use of SAS\* and a training vehicle to introduce the user to SAS\* Basics coding rules. With the addition of formal classes, business professionals can become effective SAS\* users with a minimum of learning time. That makes the SAS\* Information Center Tool a valuable training application for Basin Electric.

\* SAS and SAS/AF are registered trademarks of SAS Institute, Inc., Cary, NC, USA

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PROC 0
ALLOCATE F(FILE) DA(SAS.DATASETS) OLD REUSE
ALLOCATE F(CATA) DA('SASIC.IC.CATALOG') SHR REUSE
ALLOCATE F(PROG) DA(SAS.DATA) OLD REUSE
ALLOCATE F(MYCAT) DA(SAS.MYCAT) OLD REUSE
SAS SASUSER(SASUSER.PROFILE) +
  OPTIONS("INITSTMT='PROC DISPLAY C=CATA.ICT.MAIN.MENU;RUN;' +
          MACRO")
FREE F(FILE CATA PROG MYCAT)
END
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( Figure 1 )

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                                MAIN.MENU
Select Option ==>                                Press END to return.

Place the number of the selected option on the line above and
press the ENTER key.

      1  Manage Files
      2  Manage Data
      3  Generate Reports
      4  Individual Applications
      X  Exit SAS
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(Figure 2)

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                                FILEMGMT.MENU
Select Option ==>                                Press END to return

Place the number of the selected option on the Command line
above and press the ENTER key.

      1  Create a New File
      2  List Files
      3  Copy a File
      4  Delete or Rename a File
      R  Return to Main Menu
      X  Exit from SAS
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(Figure 3)

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Generic Report Generator

Command ==>

Select the options that you wish to have included for your printed report and press PF3 to SUBMIT the job or press PF1 for HELP.

Report file: \_\_\_\_\_ List Variables: \_

Name the variables to be included in the report in order  
(leave blank if all variables are to be included):  
\_\_\_\_\_

Sum Variables: \_\_\_\_\_

Selection Criteria: \_\_\_\_\_

Sort Variables: \_\_\_\_\_

Title Line 1: \_\_\_\_\_

Title Line 2: \_\_\_\_\_

Printer Name: \_\_\_\_\_ 8 1/2" Paper: \_

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(Figure 4)