

# Using Release 6.06 of the SAS<sup>®</sup> System for Financial Applications

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## ABSTRACT

This paper will address setting up and maintaining a financial applications development environment using SAS/ASSIST<sup>®</sup> software as well as developing financial applications using this environment. A discussion on the use of SAS/ASSIST software to front-end base SAS<sup>®</sup>, SAS/FSP<sup>®</sup>, SAS/AF<sup>®</sup>, SAS/ETS<sup>®</sup>, SAS/CALC<sup>™</sup> and SAS/GRAPH<sup>®</sup> software for providing solutions to common financial applications needs is included. Wherever possible, turn-key solutions available in SAS/ASSIST software are used thus keeping programming to a minimum.

## INTRODUCTION

The SAS<sup>®</sup> system of software has long been a preferred tool for the access, management, analysis, and presentation of financial information. These proven capabilities, enhanced by new features in Release 6.06 of the SAS System, provide a very effective means for easily developing financial applications. The most efficient way to utilize this new functionality is to use SAS/ASSIST software as a foundation and create a customized financial applications development environment that provides specific solutions for your financial applications needs.

## REQUIREMENTS OF A FINANCIAL APPLICATION DEVELOPMENT ENVIRONMENT

The requirements for a financial applications development environment will differ according to the applications it is to be used for and the analyst that will be using it. There are, however, a common set of capabilities that financial applications share:

- Timely access to corporate financial data.
- Easy management and manipulation of accessed data.
- Financial analysis to include forecasting, modelling, statistics, consolidation, roll-up and drill-down.
- Presentation capabilities for producing boardroom quality output.
- Comprehensive, host-based, spreadsheet applications that facilitate the consolidation and management of corporate financial data.
- A method for saving and reviewing the output and

applications generated by this system for future use.

- A facility for building customized, menu-driven front-ends to these saved output and applications.
- Access to methods for communicating and distributing the results of these analysis to others.

## DESIGNING A FINANCIAL APPLICATIONS WORKSTATION

By looking at our requirements for a financial applications system we find that most of the basic access, management, analysis and presentation capabilities can be handled by SAS/ASSIST. The other functions we need for our system are present in Release 6.06 of the SAS System and we need only implement front-end menus to use them in our system.

Given the set of requirements above, we can easily define a generalized financial workstation. Each major heading below corresponds to a choice on the main menu. The information following each heading is a brief description of the functions and SAS System capabilities to be incorporated under each menu choice.

### ANALYZE data

Unmodified, SAS/ASSIST provides the capabilities for most financial data access, management, analysis and presentation. For Spreadsheet applications, we will want to include access to SAS/CALC.

### CREATE applications

The applications development capabilities found under the EIS button in SAS/ASSIST are perfect for developing and front-ending financial applications. As a matter of fact, this is what we will use to develop THIS application.

### run APPLICATIONS

This is where applications CREATED with SAS/ASSIST, SAS/CALC or any other part of our system may be accessed and serves as a repository for new applications.

### present RESULTS

There needs to be a common point of display for the results from any analysis performed in our system. This is also where we can customize results. These results catalogs can be shared by the analysts working on a given project or in a certain department.

## COMMUNICATE with others

Once an analysis or report is completed, there is a need to communicate these results to others. Access to EMAIL and other communications facilities is necessary.

## PERSONAL information management

Personal scheduling and letter writing are quickly becoming indispensable tools for analysts as well as managers. We also want to include a note writing facility and a calculator.

This is a pretty general set of design specifications. It provides solutions for many of the basic financial applications you may encounter. It also allows a great deal of room for expansion.

## DEVELOPING A FINANCIAL APPLICATIONS WORKSTATION

As I mentioned earlier, we will develop our system using the EIS builder button in SAS/ASSIST. The EIS builder is essentially an object-oriented applications development facility. All applications are built using a simple, intuitive, point-and-click interface. The EIS builder provides access to objects that allow you to:

- Create/Run Block Menus
- Create/Run List Menus
- Edit/Browse a SAS Dataset
- Edit/Browse a Output Object
- Edit/Browse a Source Object
- Edit/Browse a External File
- Display a FSLETTER Catalog
- Display a Graph
- Execute a SAS Program
- Execute a SAS Command
- Execute a Host Command
- Run a Program Created with SAS/AF

For many users, creating an application is as simple as choosing an object and filling in the blanks. Any current SAS applications may be converted from Release 5.18 to Release 6.06 and included in your system as well. For applications not covered by SAS/ASSIST, you can use SAS/AF software to front-end any SAS procedure. You can then use the EIS builder to add this to your system.

Using our design above, a financial applications workstation can be built in less than an hour. Following is a complete description of all of the capabilities included in our system.

MAIN MENU  
Block menu  
Name: FINWORK  
Menu Items:

ANALYZE1 - Block Menu/Menu items:  
ANALYZE - Display SAS/AF Application  
Library: SASHELP  
Catalog: ASSIST  
Application: ASSIST  
CALC - Execute a SAS Program  
Store in catalog object and execute:  
PROC FSCALC C=LIBNAME.CALC; RUN;  
EXIT - EXIT block

DEVELOP - Display SAS/AF Application  
Library: SASHELP  
Catalog: ASSIST  
Application: SASAPPL2

APPLICAT - Block Menu/Menu items:  
(Site specific applications.)

PRESENTA - Block Menu/Menu items:  
REFRESH - Edit/Browse Source Object  
Library: libname  
Catalog: SASPGM  
Source to Display: (leave blank)  
VIEWREPT - Edit/Browse Output Object  
Library: libname  
Catalog: SASOUT  
Output to Display: (leave blank)  
VIEWGRAP - Display Graph  
Library: libname  
Catalog: GRAPHS  
Graph: graphname  
EXIT - EXIT Block

COMMUNIC - Block Menu/Menu items:  
EMAIL - Block Menu/Menu items:  
EMAIL - Execute HOST Command: Send  
REMAIL - Execute HOST Command: Receive  
HOST - Block Menu/Menu items:  
SPF - Execute HOST Command: SPF  
TSO - Execute HOST Command: TSO  
EXIT - EXIT Block

PERSONAL - Block Menu/Menu items:  
SCHEDULE - Block Menu/Menu items:  
LONG TERM - Block Menu/Menu Items  
EDIT SCHEDULE - Browse/Edit SAS  
Dataset: CALENDAR DATASET  
VIEW SCHEDULE - Display SAS/AF  
Application:  
Library: SASHELP  
Catalog: ASSIST  
Application: CALENDAR  
DAILY - Execute SAS Command: APPOINT;  
EXIT - EXIT Block  
CALCULATOR - Execute SAS Command: CALC;  
NOTEPAD - Execute SAS Command: NOTE;  
LETTERS - Execute SAS Command: FSLETTER;  
EXIT - EXIT Block  
EXIT - EXIT block

Once you have built your system you are immediately able to use it to provide solutions to your financial applications needs. Let's take a quick look at how the system we described above might be used.

## DEVELOPING AN APPLICATION USING YOUR SYSTEM

### THE SCENARIO

It's 10:25 AM. The VP of Finance calls and explains that the need has arisen for a new expense report that reflects not only actual expenditures but the budgeted amounts as well. This report also needs to reflect the variance of actual amounts to budgeted as both a percentage and a dollar amount. The VP also would like the results consolidated using the company's organizational structure, but would like to see totals by account across the organization too. "Oh, by the way, can I see something in time for my 1:00 meeting with the CEO?" Sound familiar? Sure it does. Only this time you don't have to mumble something about a 10 year applications backlog and start updating your resume.

### THE SOLUTION

The first thing you need is to access the data needed to produce your report. Choose the ANALYSIS option on the main menu of your financial workstation and enter SAS/ASSIST. You know that your budget data is in a SAS data set but the actuals are kept in a DB2<sup>®</sup> (or RDB/VMS<sup>™</sup>, or ORACLE,<sup>®</sup> or whatever) table so you will first have to access the data in the database and then merge that with the data in your SAS data set.

You use the DBMS ACCESS facility to define your database table to SAS and create a view of this table so you can merge it with the budget amounts.

You now merge the budget and actuals data using the MATCH MERGE facility under the COMBINE option in DATA MANAGEMENT.

On to the report. You choose DESIGN REPORT from the REPORT WRITING option and enter a full screen, interactive report writer. You define your consolidation groups, line items and variances. Once you are satisfied with the results, save the report definition and the code that was generated to run the report.

Back to the ANALYSIS menu. Choose the SAS/CALC option to verify your results against the budget worksheets. Everything checks out, so it is on to adding the new report to your system.

From the CREATE button you choose to add a new object that executes a SAS program. You are prompted to specify the location of the code that runs your report. The last step is to add another option to your APPLICATIONS menu to execute the object you just defined. That's it. It really is that simple.

## THE RESULTS

It's 11:05 AM. The VP calls to "see how things are going". Trying hard to be casual, you explain that the report is finished and he can access it from his EIS. After perusing the report, he calls back with an invitation to the 1:00 meeting and a 2:00 "off-site management briefing" at the local country club. Ain't life grand?

## CONCLUSION

Release 6.06 of the SAS System of software provides not only the complete set of financial tools available under Release 5.18, but a completely new, easy to use front-end for applications building. The productivity and efficiency gains made possible by the marriage of an extremely strong set of tools with this new interface are enormous. Any site can use these capabilities to create customized financial workstations to fit the specific needs of their applications and analysts.

For answers to any questions concerning information in this paper please contact:

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