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Running Parts of a SAS Program while Preserving the Entire Program

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ABSTRACT

The Challenge: We have long SAS ® programs that accomplish a number of different objectives. We often only want to run parts of the programs while preserving the entire programs for documentation or future use. Some of the reasons for selectively running parts of a program are:

- Part of it has run already and the program timed out or encountered an unexpected error. It takes a long time to run so we don't want to re-run the parts that ran successfully.
- We don't want to recreate data sets that were already created. This can take a considerable amount of time and resources and can also occupy additional space while the data sets are being created.
- We only need some of the results from the program currently, but we want to preserve the entire program.
- We want to test new scenarios that only require subsets of the program.

INTRODUCTION

There are a number of techniques we can use to allow us to achieve our objectives:

- %INCLUDE statements
- Use the operating system to call the different parts of the program
- Use macros to deactivate code
- Use %LET statements to indicate to macros which parts of the program to run
- Comment out parts of the program
- Using SAS EG interactively to only submit the parts of the program you want to run
- Add cancel to the RUN statement
- Combine more than one method

THE METHODS IN DETAIL

%INCLUDE statements

Place each logically distinct module in a separate SAS program. Have the main program issue a series of %INCLUDE statements to run the entire program. Comment out the parts you don't need.

Here is an example:

```
%INCLUDE program A;  
*%INCLUDE program B;  
%INCLUDE program C;
```

Use the operating system to call the different parts of the program

Place each logically distinct module in a separate SAS program.

Have the operating system call each program separately.

Comment out the parts you don't need. This is similar to the above method but it is done in a Unix Script

```
sas pgma.sas  
#sas pgmb.sas  
sas pgmc.sas
```

For the above two techniques, you will need to do the following to ensure that necessary values are passed:

This requires planning to ensure that the necessary macro variables and work data sets are passed to the succeeding programs. This can be done in the following ways:

- Create text files with the parameters being passed.
- Use the command line option `-SYSPARM` to take in the values when using the operating system commands. Then read them into the program by using the `SYSPARM()` function or the `&SYSPARM` macro variable.
- Save the data sets needed later in permanent SAS data sets. They can be deleted at the end of the last program using `PROC DELETE` or `PROC DATASETS`. If all of the datasets to be deleted are in the same library, and they are the only members of the library, you can use the `KILL` function that is part of `PROC DATASETS`.

Use macros to deactivate code

- Put the code that you don't want to run inside a macro
- Don't execute the macro
- This will work even if there are macros inside the macro you create

```
SAS code you want to run  
%MACRO SKIP;  
SAS code you don't want to run  
%MEND SKIP;  
SAS code you want to run
```

Use %LET statements to indicate to macros which parts of the program to run

Put the `%LET` statements at the beginning of the program to make them easier to modify
Set a flag to identify which parts of the program to run

second *; * The following statements will run the first set of code but not the

```
%LET FLAGA=Y;
%LET FLAGB=N;

%MACRO RunA(A);
  %IF &A=Y %THEN %DO;
    SAS statements;
  %END;
%MEND RunA;

%RUNA(&FLAGA); *** The value is Y, so the statements will run***;

%MACRO RunB(B);
  %IF &B=Y %THEN %DO;
    SAS statements;
  %END;
%MEND RunB;

%RUNB(&FLAGB); *** The value is N so the statements will not run ***;
```

Comment out parts of the program

Put the code you don't want to run between `/*` and `*/`

WARNING: If the code already contains `*/`, this will not work because the comment will end too early.

In this case you will need to comment out the parts before and after the comments with `/*`

```
/****** Don't run the following code
SAS code you don't want to run
******/
*Run the following code;
SAS code you want to run
```

Using SAS EG interactively to only submit the parts of the program you want to run

- Open SAS EG
- Click on **File**
- Click on **Open**
- Click on **Program**
- Import the program
- Highlight the part you want to run
- Click on the downward pointing arrow next to Run

- Click on **Run Selection**

Add cancel to the RUN statement

Add CANCEL to the RUN statement. This will cause the DATA or PROC step not to be run. There are exceptions where CANCEL will not prevent execution:

A data step with a DATALINES statement
PROC SQL

Here is an example of using the CANCEL option:

```
PROC FREQ DATA=x;  
          TABLES y;  
RUN CANCEL;
```

Combine more than one method

- Set up a shell program to run the %INCLUDEs
- Use %LET to give the paths or the names of the programs to be included

You can combine the above techniques as required and you will have a workable solution. You will be able to keep entire SAS programs intact and only run the parts that are required at the time.

CONCLUSION

When you need to run part of a SAS program but you don't want to change the overall program, there are a number of techniques that can help you out. You can use some or all of the techniques, whatever meets your needs and fits in with your programming style. Some of them vary by operating system, but all are useful.

CONTACT INFORMATION

Stephen Sloan has worked at Accenture in the Services, Consulting, and Digital groups and is currently a senior manager in the SAS Analytics area. He has worked in a variety of functional areas including Project Management, Data Management, and Statistical Analysis. Stephen has had the good fortune to have worked with many talented people at SAS Institute. Stephen has presented at over 20 SAS conferences and been published in professional journals. Stephen has a B.A. cum laude with Honor in Mathematics from Brandeis University, M.S. degrees in Mathematics and Computer Science from Northern Illinois University, an MBA from Stern Business School at New York University. Stephen graduated 1st in his class with a graduate certificate in Financial Analytics from Stevens Institute.

Your comments and questions are valued and encouraged. Contact the author at:

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