

Kirk's Korner



Quick & Simple Tips

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Simple and Effective Macro Coding Techniques for SAS® Users ~ Part 1 ~

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The SAS® Macro Language is a powerful tool for extending the capabilities of the SAS System. In this SANDS Newsletter issue, I've included three macro-related tips that I use frequently in my own code. These techniques illustrate methods associated with processing statements containing macros; replacing text strings with macro variables; troubleshooting and debugging macros; and embedding macro language code into the SAS System to enhance user productivity.

Tip #1 – Debugging a Macro with SAS System Options

The SAS System offers users a number of useful system options to help debug macro issues and problems. The results associated with using macro options are automatically displayed on the SAS Log. Specific options related to macro debugging appear in alphabetical order in the table below.

SAS Option	Description
MACRO	Specifies that the macro language SYMGET and SYMPUT functions be available.
MEMERR	Controls Diagnostics.
MEMRPT	Specifies that memory usage statistics be displayed on the SAS Log.
MERROR	Presents Warning Messages when there are misspellings or when an undefined macro is called.
MLOGIC	Macro execution is traced and displayed on the SAS Log for debugging purposes.
MPRINT	SAS statements generated by macro execution are traced on the SAS Log for debugging purposes.
SYMBOLGEN	Displays text from expanding macro variables to the SAS Log.

Tip #2 – Streamlining Command-line DMS Commands with a Macro

The macro language is a wonderful tool for streamlining frequently entered SAS Display Manager System (DMS) commands to reduce the number of keystrokes. By embedding a series of DMS commands inside a simple macro, you'll not only save by not having to enter them over and over again, but you'll improve your productivity as well. The following macro code illustrates a series of DMS commands being strung together in lieu of entering them individually on a Display Manager command line. The commands display and expand the SAS Log to full size respectively, and then position the cursor at the top of the log. Once the macro is defined, it can be called by entering %POSTSUBMIT on any DMS command line to activate the commands.

Macro Code

```
%MACRO postsubmit;  
    Log;  
    Zoom;  
    Top;  
%MEND postsubmit;
```

Tip #3 – Assigning a Defined Macro to a Function Key

To further reduce keystrokes and enhance user productivity even further, a call to a defined macro can be saved to a Function Key. The purpose for doing this would be to allow for one-button operation of any defined macro. To illustrate the process of saving a macro call to a Function Key, the %POSTSUBMIT macro defined in the previous tip is assigned to Function Key F12 in the KEYS window. The partial KEYS window is displayed to illustrate the process.

KEYS Window

Key	Definition
F1	help
F2	reshow
F3	end;
...	...
F10	keys
F11	command focus
F12	%POSTSUBMIT

Contact Information

If you would like more information or have any questions about this tip, please contact Kirk Paul Lafler, Software Intelligence Corporation at KirkLafler@cs.com. Kirk has been working with the SAS System since 1979 and is a SAS Certified Professional®. His company provides custom SAS programming, application design and development, consulting services, and instructor-led and hands-on SAS training to clients and user around the world. Kirk is the author of four books including PROC SQL: Beyond the Basics Using SAS by SAS Institute. He has published more than three hundred peer-reviewed articles and papers, and has been an Invited speaker and instructor at more than three hundred SAS International, regional, local, and special-interest user group conferences and meetings throughout North America.



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