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HELP, My SAS® Program isn't Working: Where to Turn When You Need Help

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ABSTRACT

Instead of a quick code fix, I often assist the SAS user by troubleshooting their issue with my knowledge of SAS and the SAS community. For over 20 years, I have provided SAS Technical Support, and this paper will present strategies I have used to work through simple to complex technical problems, and will include access to my "cheat sheets".

INTRODUCTION

This paper is a living document that will be updated often on sasCommunity.org, including access to the slides. There are many different strategies for solving problems, and these are mine. The writing of this presentation has helped me put a framework around how I solve SAS problems, and hopefully will help you develop your own strategy.

A VERY SUPPORTIVE COMMUNITY

There are many options available for a SAS user to find support or learn new techniques.

When I have a problem, I look to this community for similar issues. I review much of the informal and formal published literature of these communities to see if my problem has already been identified and solved. This is beyond verifying SAS syntax, which I now often do with Google.
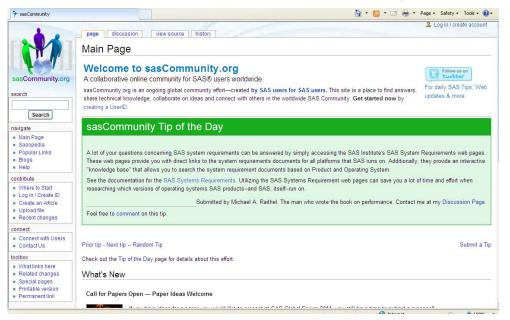
The quality of papers at the many SAS user group conferences is amazing. Often it is easier to find a complex topic explained in a user's paper than the documentation.

One paper presented at SAS Global Forum 2010 provided excellent coverage of the online SAS Community:

- Discovering the Road Less Traveled to SAS® Information: A Guide for Your Journey,
  http://support.sas.com/resources/papers/proceedings10/299-2010.pdf

There are many methods to improve your SAS skills. My current favorites are as follows:

- Once You "Know" SAS® … How to Keep Learning It,
  http://support.sas.com/resources/papers/proceedings10/185-2010.pdf

- sasCommunity.org Tip of the Day has become my favorite daily "SAS shot" of new ideas. Often, I'll read a volunteer post of an issue that I've had in the past and marvel at the more elegant solution.

- AnnMaria De Mars series presented in SAS Essentials Workshop at WUSS 2010:

  o   From Novice to Intermediate in (Approximately) Sixty Minutes: I. Functions, Programming, and Processing – the Power to Choose, http://www.wuss.org/proceedings10/ESS/3056_5_ESS-Demars1.pdf

  o   From Novice to Intermediate in Sixty Minutes: II. SAS Procedures Beyond the Basics, http://www.wuss.org/proceedings10/ESS/3057_5_ESS-Demars2.pdf

  o   From Novice to Intermediate in Sixty Minutes: III. Presentation (Graphics and ODS), http://www.wuss.org/proceedings10/ESS/3058_5_ESS-Demars3.pdf

SOLVING IT WITH "CLASS"

SAS provides sample data sets with Base SAS. My favorite starting point is sashelp.class. I will take my problem and attempt to replicate it with sashelp.class. I do this for DATA step programming and PROC issues. Often, trying to replicate the problem reveals my error in logic and/or coding. I will often add variables and additional rows or make values missing.

When I need further assistance, I will use this replicated data set. This bypasses privacy issues with my data and most of the folks that I'm reaching out to know this data as intimately as I do.

Taking a complex issue and getting away from all of the existing code has been a mainstay of my support.

If this doesn't work, try other SAS sample data or create new simple data sets, maybe in a spreadsheet. Get away from the real data for a short-time.

Other sample data sets are available that might closely resemble your data issue. See Michael Raithel's Tip of the Day, http://www.sascommunity.org/wiki/Tip_of_the_Day:August_28 for his suggestions.

"I'M GONNA SIT RIGHT DOWN AND WRITE MYSELF A LETTER"[1]

If I haven't solved the issue with the modified SAS sample data set, I will write myself a letter. I've found the process of writing a letter will reveal the issue. I always provide the data source which is now the modified SAS sample data set, the issue, and what I've tried already. If I still haven't found a solution, then I'll send it. Of course, this letter will become an email.

Since I don't like wasting others' time, I'm very serious about posting a letter to the vast options of available online help. Even though I know a vast network of SAS users, I don't like asking for their thoughts until I work through this letter writing process and have used the online community. Many times, these same experts are part of the online community. If they have time, they'll respond through that particular channel and it will be documented for the public.

My current favorite technical support options, in order of preference, are as follows:

- SAS Discussion Forums, http://support.sas.com/forums/index.jspa. I'm very fond of the search capability and the organization by specific topics or solutions.

  One of my questions posed to the **ODS and Base Reporting** SAS Discussion Forum provides a template for how I put forth my problems, http://support.sas.com/forums/thread.jspa?messageID=23533&#23533.

- SAS-L, http://www.listserv.uga.edu/archives/sas-l.html

- SAS Technical Support, http://support.sas.com/ctx/supportform/createForm

"PUT"-TER AROUND

Don't forget the PUT statement in your DATA step to write to the SAS log or the %PUT statement throughout your macro coding. Comment them out after you've used them.

For a good overview of using the %PUT statement, see Sample 25243: Finding an Error in Macro Variable Resolution in Open Code by Using the %PUT Statement, http://support.sas.com/kb/25/243.html.

The PUT statement is also a great way to view the PDV. Don't know what a PDV is check out Programming with the KEEP, RENAME, and DROP Data Set Options, http://www2.sas.com/proceedings/sugi31/248-31.pdf.

A LITTLE BIT OF MACRO KNOWLEDGE GOES A LONG WAY

I've already mentioned the %PUT statement, but understanding how to write a simple macro can save hours of coding, especially repetitive coding. Every user conference almost always has an introduction to macro coding. Too much macro coding can be difficult for those that might inherit your code.

I think the following paper is a good overview, especially for those that have been avoiding using macros: "SAS® Macros Are Just Text Substitution!" . . . ARRRRGGGHHH!!!,
http://support.sas.com/resources/papers/proceedings10/142-2010.pdf .

HELPFUL TECHNIQUES

"THE INFORMER"[2]

Helen & Ginger Carey said it best in their **SAS Today! A Year of Terrific Tips (1996)**:

> *Read the SAS log. Even better, read the log out loud. The log tells you what happened when the program ran. The log helps you to debug the program and know if the program ran as planned. Track down all ERRORS, and pay attention to the NOTES and WARNINGS.*
>
> *Most experienced programmers read the log after every execution.*

Remember to review the whole log, before and after the actual error message. I often receive only a cut-and-paste of the SAS log from my users, which isn't all that helpful. I almost always request the entire log. A helpful overview of how to read the SAS log is Cutting the SAS® LOG down to size, http://analytics.ncsu.edu/sesug/2004/SY05-Foley.pdf.

Over the years, the Error and Warning messages have become more helpful and descriptive.

CONCLUSION & ACCESS TO MY CHEAT SHEETS

Since this paper is a living document, I don't feel a need to write a long conclusion section. But in closing, there are so many fun and interesting ways to learn SAS and improve your skill set. There are also multiple ways to publically share this experience. Please feel free to comment on my sasCommunity.org links for other suggestions. My cheat sheets are available at http://www.sascommunity.org/wiki/User_talk:Kimlebouton.

REFERENCES

1. "**I'm Gonna Sit Right Down and Write Myself a Letter**" is a 1935 song with music by Fred E. Ahlert and lyrics by Joe Young.

2. In addition to being the subheading for this paper, "The Informer" was the title for the May 4th (124) entry in the now out of print, **SAS Today! A Year of Terrific Tips**. If you can find this used, buy it.

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CONTACT INFORMATION

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

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