

# Debugging SAS Code

Jeff Simpson



## Why Debug Our Code?

The computer breaks things!

- Almost true!
- SAS syntax check is VERY forgiving but...
  - » It doesn't know what we intended -
  - » Only what we tell it!
- Resources may not be available
- We have to speak multiple languages
  - » Databstep or is it (Data Step?)
  - » DS2
  - » Macro
  - » SQL
  - » DBMS
  - » Regular Expressions

## But Honestly

We make mistakes!

- Semicolons
- Misspelled words
- Incorrect operators (+, -, \*, /, \*\*, \, AND, OR, =, <, >, (), etc)
- Unbalanced quotes

We often use SAS as a syntax checker

New products like Enterprise Guide 5.1 really help

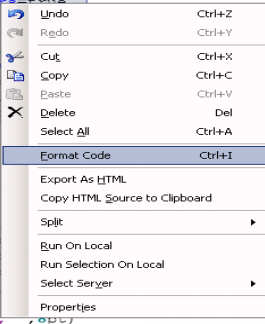
- Wizards to build code without misspellings
- Reformat code

## Enhanced Program Editor

```
proc transpose data=trend out=trendGrp (rename=( _LABEL_=Group coll=Value) drop=_name_);  
  by month;  
  var pn8 pr8 pt8;  
run;
```

```
proc template;  
  define statgraph dashboard.trend;  
  begingraph / designwidth=600px designheight=400px;  
  entrytitle 'Percent Change from Last Year';  
  layout overlay / cycleattrs=true  
  yaxisopts=(griddisplay=on  
  y2axisopts=(label='Total'  
  barchart x=month y=pn8 /  
  skin=modern datatranspare  
  barchart x=month y=pr8 /  
  seriesplot x=month y=pt8  
  discretelegend 'bar1' 'ba  
  endlayout;  
  endgraph;  
end;
```

```
proc template;  
  define Style TrendStyle  
  parent = styles.analysis;  
  style GraphFonts from G  
  "Fonts used in graph."  
  'GraphTitleFont' = ("  
  'GraphFootnoteFont' =  
  'GraphLabelFont' = ("  
  ,opt;
```



```
linearopts=(viewmin=-0.05)  
viewmax=0.2));  
name='bar2';  
thickness=4 pattern=solid yaxis=y2 name='line';  
valign=bottom halign=center;
```



Converts code into Indented Format

```
proc template;  
  define statgraph dashboard.trend;  
    begingraph / designwidth=600px designheight=400px;  
      entrytitle 'Percent Change from Last Year';  
      layout overlay / cycleattrs=true  
      yaxisopts=(griddisplay=on label='Percent Change' linearopts=(viewmin=-0.05)  
      y2axisopts=(label='Total' linearopts=(viewmin=-0.05 viewmax=0.2));  
      barchart x=month y=pn8 /* barlabel=true+/  
      skin=modern datatransparency=0.3 name='bar1';  
      barchart x=month y=pr8 / skin=modern barwidth=0.6 name='bar2';  
      seriesplot x=month y=pt8 / lineattrs=graphData5(thickness=4 pattern=solid) yaxis=y2 name='line';  
      discretelegend 'bar1' 'bar2' 'line' / location=inside valign=bottom halign=center;  
    endlayout;  
  endgraph;  
end;  
run;
```

## But Honestly

We make mistakes!

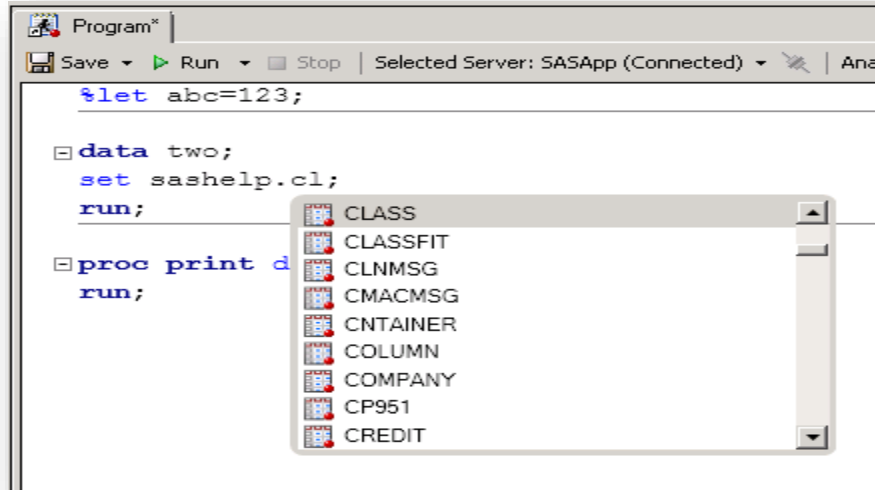
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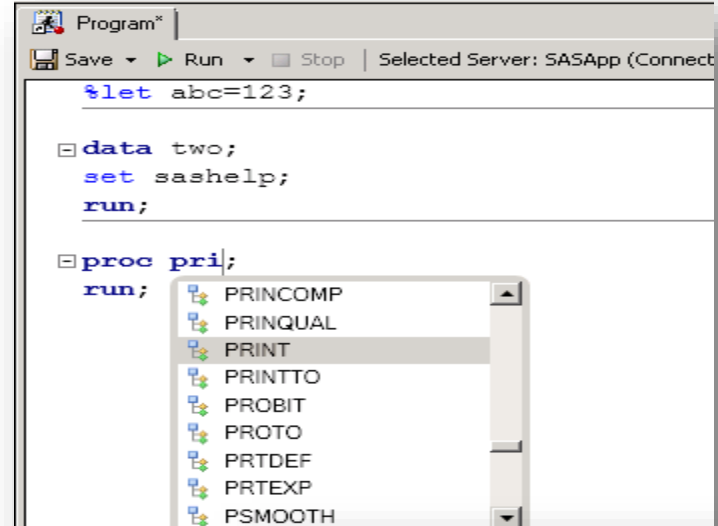
New products like Enterprise Guide 5.1 really help

- Wizards to build code without misspellings
- Reformat code
- Syntax suggestions

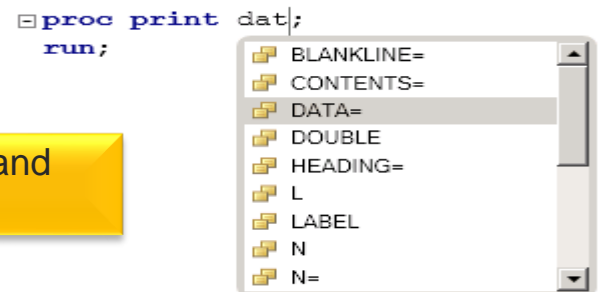
## Enhanced Program Editor - Autocomplete



Connects to data library listing accessible data tables



Provides list of SAS PROCs, SAS Functions and Macro variables, assisting user while coding



# Enhanced Program Editor

The screenshot shows the SAS Enhanced Program Editor interface. The main window displays a SAS program with the following code:

```
pr8=pr8-1;
datalines;
1 1.17195 1.04880 1.05943
2 1.19779 1.06914 1.08467
3 1.12158 1.09027 1.09648
4 1.07787 1.10394 1.09846
5 1.08135 1.09167 1.08935
6 1.16316 1.10599 1.12094
7 1.12977 1.10478 1.11108
8 1.14117 1.10988 1.11798
9 1.16774 1.10500 1.12222
10 1.15431 1.10135 1.11570
11 1.09570 1.09093 1.09223
12 0.99802 1.07659 1.05319
13 0.99914 1.04472 1.03230
;
run;
```

Below the code, the `proc transpose` procedure is selected, and a tooltip is displayed. The tooltip contains the following information:

- Keyword:** TRANSPOSE
- Context:** [PROCEDURE DEFINITION] PROC TRANSPOSE
- Syntax:** PROC TRANSPOSE <DATA=input-data-set> <DELIMITER=delimiter> <LABEL=label> <LET=<NAME=name> <OUT=output-data-set> <PREFIX=prefix> <SUFFIX=suffix> BY <DESCENDING> variable-1 <...> <DESCENDING> variable-n> <NOTSORTED>; COPY variable(s); ID variable; IDLABEL variable; VAR variable(s);
- Description:** The TRANSPOSE procedure creates an output data set by restructuring the values in a SAS data set, transposing selected variables into observations. The TRANSPOSE procedure can often eliminate the need to write a lengthy DATA step to achieve the same result. Further, the output data set can be used in subsequent DATA or PROC steps for analysis, reporting, or further data manipulation.
- Output:** PROC TRANSPOSE does not produce printed output. To print the output data set from the PROC TRANSPOSE step, use PROC PRINT, PROC REPORT, or another SAS reporting tool.
- Usage:** To create transposed variable, the procedure transposes the values of an observation in the input data set into values of a variable in the output data set.

The tooltip is highlighted with a red circle. A yellow callout box with the text "Mouse over Tooltip with details for SAS PROCS, SAS Functions" is positioned over the tooltip.

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- Incorrect operators (+, -, \*, /, \*\*, \, AND, OR, =, <, >, (), etc)
- Unbalanced quotes

We often use SAS as a syntax checker

New products like Enterprise Guide 5.1 really help

- Wizards to build code without misspellings
- Reformat code
- Syntax suggestions
- Special highlighting of SAS syntax elements



## Debugging 101

### Types of messages in the SAS log

- **NOTE:**
  - » Informational message telling us what each step has done
- **WARNING:**
  - » Something is amiss but not severe enough to cause SAS to stop executing
  - » ALWAYS need to check out why a WARNING: message was generated
- **ERROR:**
  - » “Houston, we have a problem”
  - » Something serious has occurred and SAS cannot continue processing

## Debugging 101

“I got an ERROR message, what do I do?”

- Start at the top
  - » The first ERROR (or WARNING) usually causes others
  - » Use Cntl-F to find the word ERROR
- Correct the problem
- Review other errors and correct any syntax problems
- What about logic issues?
- Rerun the code

“I don’t understand what the message says!”

- Some messages seem cryptic
- Rule of thumb: If you don’t understand the problem, look on the line above to see if there is a missing semicolon!!!

## New Statements in SAS 9.3

### RESETLINE

- Restarts the program line numbering in the SAS log to 1

## Debugging 101

“What happens when I get an ERROR?”

- The current process ends
- The `_ERROR_` variable is set to 1
- Sometimes SAS will go into syntax check mode
- Most often it will attempt to process any remaining steps
- » Causes more ERRORS!

## Sample ERROR Messages

### Easy to digest ERRORS

ERROR: File WORK.V\_LMK\_DETAIL.DATA does not exist.

- Check the spelling of the table
- Was the table created earlier in the process?

## Sample ERROR Messages

ERROR: Libname TRX is not assigned.

Did the LIBNAME statement fail?

Was there a LIBNAME statement?

Note: A good rule of thumb is to specify all Libname and Filename Statements at the beginning of your SAS program

## Sample ERROR Messages

ERROR: BY variables are not properly sorted on  
data set WORK.CHK\_STATE.

This one is very obvious

Sort the table!

## Sorting Considerations

If the input data to be read by SAS is sorted already, then use the SORTEDBY data set option to assert a sort key.

- Follow this by a PROC SORT using the PRESORTED option for validation
- This sets the sort-verified flag on the SAS data set
- Some parts of SAS may choose to implement a sequence check regardless of the strength of the assertion



## Typical Syntax ERROR Messages

**ERROR: Error in the LIBNAME statement.**

```
14      libname "\\wil-sasprd03\basemarketing_backup\Phone_Sales\Front  
      End\Business Basic Upsell\2010_7";
```

Looks generic but when you look at the associated LIBNAME statement:

- Missing libref

## Typical Syntax ERROR Messages


```
52 PROC CAPABILITY DATA = WORK.SORTTempTableSorted
ERROR: Procedure CAPABILITY not found.
53 CIBASIC(TYPE=TWOSIDED ALPHA=0.05)
54 MU0=0
```

Insure proper spelling

Use PROC SETINIT to see if the procedure is licensed in the SAS session

If licensed, was it installed?

# Typical Syntax ERROR Messages



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  - E-newsletters

## Discover SAS® Customer Resources



### Make the Ballot work for you

Exercise your right to vote by visiting the SASware Ballot community. Vote for the items that you feel should be included in SAS software or vote down the items you feel less strongly about. Be sure to vote in time for your vote to be included in the SAS Global Forum Ballot announcement.

[Infographic shows how to cast a Ballot vote](#)

### Recommended Reading

- Reading print files into SAS Data Sets**

Get the code and a test print file so that you can read information from a fixed-width print file into a data set. (DEC 12) [more](#)
- Manage your community privacy settings**

You are in charge of your personal information and notification settings in *Communities On SAS*. (DEC 04) [more](#)
- Instructions for license file renewal**

This note provides video and written instructions for renewing the license file for SAS 9.3 on Windows. (NOV 27) [more](#)

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Featured content for the SAS customer who installs, updates, manages, and maintains a SAS deployment.

- SAS 9.3 installation documentation
- List of supported operating systems
- Intelligence Platform deployment & administration
- SAS Deployment Community
- Available Hot Fixes
- Training for the SAS administrator

# Typical Syntax ERROR Messages

The screenshot shows the SAS Knowledge Base website. At the top left is the SAS logo with the tagline "THE POWER TO KNOW." and the text "Providing software solutions since 1976". To the right is a search bar with the text "Search support.sas.com" and a search icon. Below the logo is a navigation bar with links for "support.sas.com", "Knowledge Base", "Support", "Training & Bookstore", and "Community". The main heading is "KNOWLEDGE BASE / PRODUCT DOCUMENTATION". On the left is a "KNOWLEDGE BASE" sidebar with a tree view of categories: Products & Solutions, System Requirements, Install Center, Third-Party Software Reference, Documentation (selected), Papers, Samples & SAS Notes, and Focus Areas. The "Documentation" category is expanded to show sub-items: What's New in SAS, Product Index A-Z, SAS Analytical Products 12.1, SAS 9.3, SAS Analytical Products 9.22, SAS 9.2, and Earlier SAS Releases. The main content area is titled "SAS Product Documentation" and has a "Starting Points" section with three links: "Browse What's New in SAS", "Look up a book by its title", and "Browse the SAS Programmer's Bookshelf". There are also two links on the right: "Find documentation for a specific product" and "Locate books about a specific topic". Below this is a search form with a "Search" input field (placeholder: "Enter search term"), a "Release" dropdown menu (selected: "All SAS releases (9.2 and later)"), and a "Display" section with three radio buttons: "All topics" (selected), "Examples only", and "Syntax only". A "Submit" button is at the bottom of the form. Below the form is an "Other Resources" section with three links: "Syntax Index for SAS 9.3 and SAS Analytical Products 12.1", "SAS Procedures by Name and Product 9.3 | 9.2", and "SAS Language Reference by Name, Product, and Category 9.3 | 9.2". At the bottom right of the page are "Print" and "Feedback" icons.

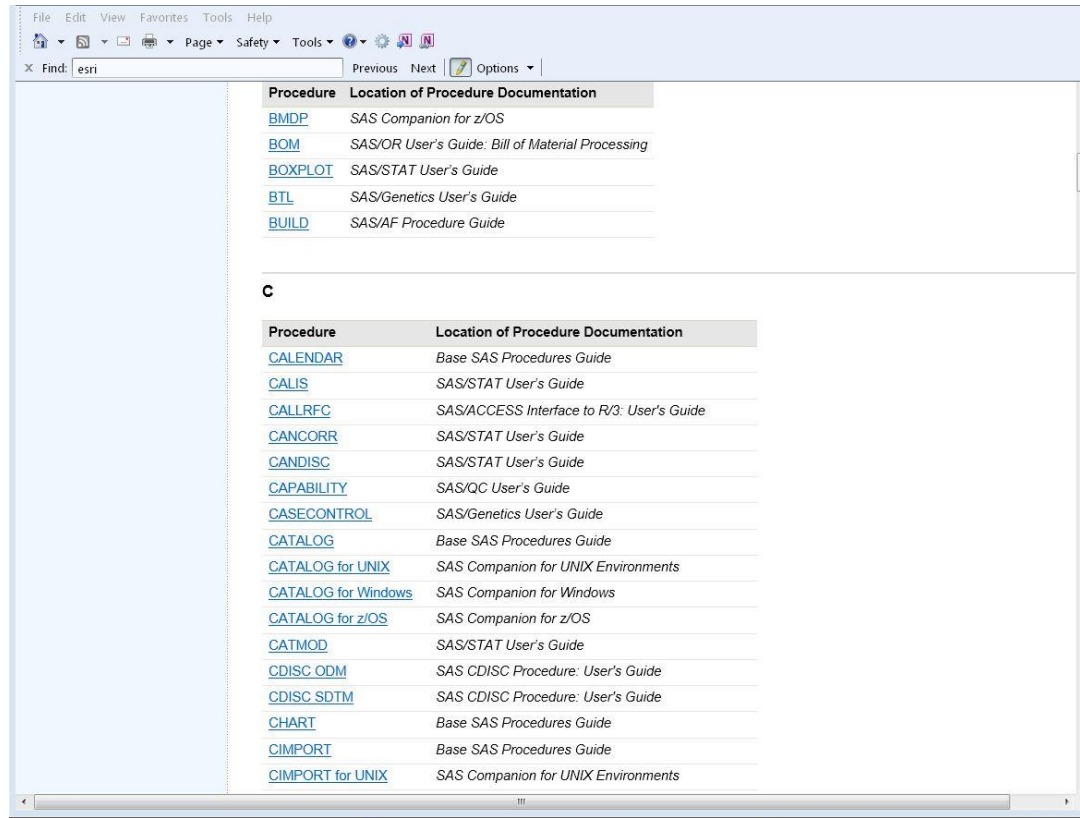
# Typical Syntax ERROR Messages

The screenshot shows a web browser window displaying the SAS Knowledge Base page for SAS(R) 9.3 Procedures by Name and Product. The browser's address bar shows the URL `support.sas.com` and the search bar contains the text `esri`. The page header includes the SAS logo and the tagline "THE POWER TO KNOW." Below the header, there is a navigation menu with links for [support.sas.com](#), [Knowledge Base](#), [Support](#), [Training & Bookstore](#), and [Community](#). The main content area features a search bar with the text "Search this document" and a "Search" button. The page title is "SAS(R) 9.3 Procedures by Name and Product". The left sidebar contains a "Contents" section with links for [Title Page](#) and [SAS Procedures](#). The main content area displays a blue graphic and the title "SAS® 9.3 Procedures by Name and Product". The page also includes navigation links for "Previous Page" and "Next Page" at the top and bottom.

# Typical Syntax ERROR Messages

The screenshot shows a web browser window displaying the SAS Knowledge Base. The browser's address bar shows a search for 'esri'. The SAS logo and tagline 'THE POWER TO KNOW.' are visible at the top left. The navigation menu includes 'support.sas.com', 'Knowledge Base', 'Support', 'Training & Bookstore', and 'Community'. The main content area is titled 'SAS(R) 9.3 Procedures by Name and Product'. A search box on the right contains the text 'Search support.sas.com'. The page content includes a 'Contents' sidebar with 'Title Page' and 'SAS Procedures', and a main section titled 'SAS Procedures' with sub-sections for 'SAS Procedures by Name' and 'SAS Procedures by Product'. Navigation links for 'Previous Page' and 'Next Page' are present at the top and bottom of the main content area.

# Typical Syntax ERROR Messages



File Edit View Favorites Tools Help

Find: esri Previous Next Options

**Procedure Location of Procedure Documentation**

<a href="#">BMDP</a>	SAS Companion for z/OS
<a href="#">BOM</a>	SAS/OR User's Guide: Bill of Material Processing
<a href="#">BOXPLOT</a>	SAS/STAT User's Guide
<a href="#">BTL</a>	SAS/Genetics User's Guide
<a href="#">BUILD</a>	SAS/AF Procedure Guide

**C**

Procedure	Location of Procedure Documentation
<a href="#">CALENDAR</a>	Base SAS Procedures Guide
<a href="#">CALIS</a>	SAS/STAT User's Guide
<a href="#">CALLRFC</a>	SAS/ACCESS Interface to R/3: User's Guide
<a href="#">CANCORR</a>	SAS/STAT User's Guide
<a href="#">CANDISC</a>	SAS/STAT User's Guide
<a href="#">CAPABILITY</a>	SAS/QC User's Guide
<a href="#">CASECONTROL</a>	SAS/Genetics User's Guide
<a href="#">CATALOG</a>	Base SAS Procedures Guide
<a href="#">CATALOG for UNIX</a>	SAS Companion for UNIX Environments
<a href="#">CATALOG for Windows</a>	SAS Companion for Windows
<a href="#">CATALOG for z/OS</a>	SAS Companion for z/OS
<a href="#">CATMOD</a>	SAS/STAT User's Guide
<a href="#">CDISC ODM</a>	SAS CDISC Procedure: User's Guide
<a href="#">CDISC SDTM</a>	SAS CDISC Procedure: User's Guide
<a href="#">CHART</a>	Base SAS Procedures Guide
<a href="#">CIMPORT</a>	Base SAS Procedures Guide
<a href="#">CIMPORT for UNIX</a>	SAS Companion for UNIX Environments

## Typical Syntax ERROR Messages

```
1   proc fomat cntlin=cntlin;  
      -----  
      14
```

**ERROR: Procedure FORMAT not found.**

**WARNING 14-169: Assuming the symbol FORMAT was misspelled as fomat.**

```
2   run;
```

NOTE: The SAS System stopped processing this step because of errors.

NOTE: PROCEDURE FOMAT used (Total process time):

real time	0.04 seconds
cpu time	0.00 seconds



## Other ERRORS

```
166      proc means data=nbp(where=(new_prdct_flag2>0) nway noprint;
```

```
                _____  
                22          22  
                _____  
                79          79
```

ERROR 22-7: Invalid option name NWAY.

ERROR 22-322: Missing ')' parenthesis for data set option list

ERROR 79-322: Expecting a ).

```
167      class segment2 /*acct_bucket*/ nbp_flag;
```

ERROR: Variable new\_prdct\_flag2 is not on file WORK.NBP.

ERROR: No data set open to look up variables.

ERROR: No data set open to look up variables.

```
168      var new_prdct_flag;
```

ERROR: No data set open to look up variables.

```
169      output out=overall_rates mean=add_rate;
```

```
170      run;
```

NOTE: The SAS System stopped processing this step because of errors.

WARNING: The data set WORK.OVERALL\_RATES may be incomplete. When this step was

stopped there were 0 observations and 0 variables..

WARNING: Data set WORK.OVERALL\_RATES was not replaced because this step was stopped.

## Other ERRORS

ERROR: You cannot open WORK.TEST.DATA for output access with member-level control because WORK.TEST.DATA is in use by you in resource environment IOM ROOT COMP ENV.

- Usually seen with Enterprise Guide
  - Can appear with Base SAS (DMS)
- Close the table viewer for that table
- Use EG Option to automatically close all tables before submitting code

## Other ERRORS

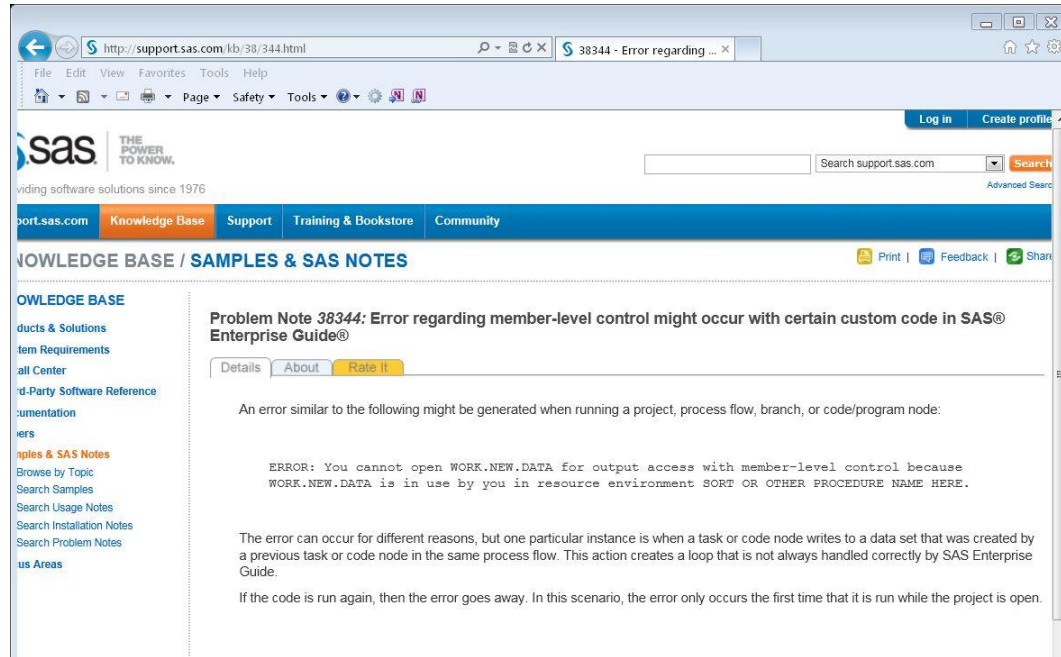
ERROR: You cannot open WORK.TEST.DATA for output access with member-level control because WORK.TEST.DATA is in use by you in resource environment IOM ROOT COMP ENV.

The screenshot shows the SAS Knowledge Base search results for the error message: "ERROR: You cannot open WORK DATA for output access with member-level control". The search results are sorted by relevance and include three entries:

- 2004-03-08** [6584 - "ORA-03113 End of file on communication channel" using the MS Oracle ODBC Driver](#) - Problem Note  
You may receive the following errors when using the Microsoft Oracle ODBC Driver with an Oracle 8 client going against an Oracle 7 server: ERROR: You cannot open libref.tablename.data for output access with member- ...  
<http://support.sas.com/kb/6584.html>, 26KB
- 2010-01-15** [38344 - Error regarding member-level control might occur with certain custom code in SAS® Enterprise Guide®](#) - Problem Note  
An error similar to the following might be generated when running a project, process flow, branch, or code/program node: ERROR: You cannot open WORK.NEW.DATA for output access with member-level control because WORK ...  
<http://support.sas.com/kb/38344.html>, 26KB
- 2007-10-19** [\[PDF\] SAS 9.1.3 Intelligence Platform: Administration Guide, Second Edition](#)  
SAS © 9.1.3 Intelligence Platform Security Administration Guide Second Edition The correct bibliographic citation for this manual is as follows: SAS Institute Inc. 2006. SAS® 9.1.3 Intelligence Platform: Security ...  
<http://support.sas.com/documentation/configuration/bisecag.pdf>, 308KB

## Other ERRORS

ERROR: You cannot open WORK.TEST.DATA for output access with member-level control because WORK.TEST.DATA is in use by you in resource environment IOM ROOT COMP ENV.



The screenshot shows a web browser window displaying the SAS Knowledge Base article for Problem Note 38344. The browser address bar shows the URL `http://support.sas.com/kb/38/344.html`. The page title is "38344 - Error regarding ...". The SAS logo and tagline "THE POWER TO KNOW." are visible at the top left. The navigation menu includes "Knowledge Base", "Support", "Training & Bookstore", and "Community". The article title is "Problem Note 38344: Error regarding member-level control might occur with certain custom code in SAS® Enterprise Guide®". The article content includes a description of the error and a solution.

**Problem Note 38344: Error regarding member-level control might occur with certain custom code in SAS® Enterprise Guide®**

An error similar to the following might be generated when running a project, process flow, branch, or code/program node:

```
ERROR: You cannot open WORK.NEW.DATA for output access with member-level control because
WORK.NEW.DATA is in use by you in resource environment SORT OR OTHER PROCEDURE NAME HERE.
```

The error can occur for different reasons, but one particular instance is when a task or code node writes to a data set that was created by a previous task or code node in the same process flow. This action creates a loop that is not always handled correctly by SAS Enterprise Guide.

If the code is run again, then the error goes away. In this scenario, the error only occurs the first time that it is run while the project is open.

## Errors that aren't really ERRORS

NOTE: Invalid argument to function INPUT at line 295 column 167.

```
-----1-----2-----3-----4-----5-----6-----7-----8-----9-----0
32020 |1125364|10136927|BLN|CI_PERM|C&I PERMANET - MISC|C|05||FS|1351445.00|1367597.20|19990728|2042570|LE
101  XINGTON/VA - COMME|N|BR|A| || |N|Y|N|N| ||20131228|2000000| |.05875|N| |1125364| |19131ND|2042502|N| |N|N|N
201  || 202
```

```
_W_NumericValue = INPUT(_W_StringValue, COMMA32.);
```

## Are We Speaking the Same Language?

```
PROC SQL;  
15      CREATE TABLE BRAND.FINAL_CL_LIST AS SELECT PHF.*,  
16      ETH.A_ETHNY_ETHNIC_CODE,  
17      CASE WHEN ETH.A_ETHNY_ETHNIC_CODE = 20 THEN Y ELSE " " END AS  
HISP_HH_FLAG  
18      FROM WORK.PHONE_FNL PHF  
19      LEFT JOIN ETHN.ETHNIC ETH ON (PHF.CG_ID = ETH.CG_ID);
```

**ERROR: Expression using equals (=) has components  
that are of different data types.**

**ERROR: The following columns were not found in  
the contributing tables: Y.**

**NOTE: PROC SQL set option NOEXEC and will  
continue to check the syntax of statements.**

```
20      ;  
21      QUIT;
```

**NOTE: The SAS System stopped processing this step**

## Common ERRORS Using PROC SQL

ERROR: Could not expand T1.\*; correlation name not found.  
ERROR: Unresolved reference to table/correlation name T1.  
ERROR: The following columns were not found in the contributing tables: T1.

ERROR: The SUM summary function requires a numeric argument.  
ERROR: The following columns were not found in the contributing tables:  
RTL\_CHKG\_DPST\_CNT.

ERROR: Table WORK.PHONE\_CLEANUP doesn't have any columns. PROC SQL requires each of its tables to have at least 1 column.

ERROR: Column CG\_ID could not be found in the table/view identified with the correlation name PHONE\_CLEANUP.

## Common ERRORS Using PROC SQL

ERROR: The following columns were not found as CALCULATED references in the immediate query:  
CMRCL\_BNDL\_PRDCT\_CNT.



## Debugging Macro Variables

```
%macro wrttxt(text=Something we really want to write to the log!);  
%put text;  
%mend wrttxt;  
%wrttxt
```

Resolves to text

## Debugging Macro Variables

```
%macro wrttxt(text=Something we really want to write to the log!);  
%put &txt;  
%mend wrttxt;  
%wrttxt
```

**WARNING:** Apparent symbolic reference TXT not resolved.  
&txt

## Debugging Macro Variables

ERROR: Open code statement recursion detected.

```
27    %LET _CLIENTPROJECTNAME=;
```

WARNING: Apparent symbolic reference A not resolved.

WARNING: Apparent symbolic reference A not resolved.

ERROR: The text expression FIRST\_NAME2='ANNE' AND

```
    LAST_NAME2='SHULER';PROC
```

```
PRINT DATA=RESPONDERS2;WHERE &A.;VAR
```

```
    FIRST_NAME2 LAST_NAME2
```

```
STREET_ADDRESS CITY2 STATE2;RUN;PROC PRINT
```

```
    DATA=MAILFILE2;WHERE &A.;VAR
```

```
FIRST_NAME2 LAST_NAME2 STREET_ADDRESS
```

```
    CITY2 STATE2;RUN;;*!;* contains a recursive reference to the macro variable A. The macro variable will be assigned the null value.
```

## Macro Options

### MPRINT|NOMPRINT

- Displays generated code in the SAS Log
- Default: NOMPRINT

### MLOGIC|NOMLOGIC

- Displays execution of each macro statement
- Default: NOMLOGIC

## Macro Options

### SYMBOLGEN|NOSYMBOLGEN

- Tells you what each Macro variable called by your program resolves to.
- Default: NOSYMBOLGEN

## New Macro Functions for 9.3

### `%SYSMACEXEC`

- Indicates whether a macro is currently executing

### `%SYSMACEXIST`

- Indicates whether macro is defined in `WORK.SASMACR`

### `%SYSMEEXECDEPTH`

- Returns the depth of macro nesting from the point of call

### `%SYSMEEXECNAME`

- Returns the name of the macro executing at a nesting level

## New Macro Statements

### %SYSMACDELETE

- Deletes a macro definition from WORK.SASMACR

### %SYSMSTORECLEAR

- Closes stored compiled macros and clears SASMSTORE=

## **%SYSSTORECLEAR**

The code below produces the following errors:

ERROR: Unable to clear or re-assign the library MACTEST because it is still in use.

ERROR: Error in the LIBNAME statement.

```
libname mactest 'c:\atrash';
```

```
options mstored sasmstore=mactest;
```

```
%macro test1 / store;
```

```
    %put test1;
```

```
%mend;
```

```
libname mactest 'c:\newrpt'; /*mactest has not been closed so error  
will occur*/
```

```
options sasmstore=mactest;
```

```
%macro test2 / store;
```

```
    %put test2;
```



## **%SYSSTORECLEAR**

The following code processes correctly.

```
libname mactest 'c:\temp';
```

```
options mstored sasmstore=mactest;
```

```
%macro test1 / store;
```

```
    %put test1;
```

```
%mend;
```

```
%sysstoreclear;
```

```
libname mactest 'c:\newrpt';
```

```
options sasmstore=mactest;
```

```
%macro test2 / store;
```

```
    %put test2;
```

## Debugging Access to DB2

```
ERROR: CLI cursor fetch error: [IBM][CLI Driver] SQL1224N  
The database manager is not able to accept new requests,  
has terminated all requests in progress,  
or has terminated your particular request due to an error or a force interrupt.  
SQLSTATE=55032
```

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The message might be due to any of the following causes. 1. The database manager has not been started on the database server. The database manager was stopped.  
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Database fundamentals

DB2 Version 9.5 for Linux, UNIX, and Windows

## SQL1224N

The database manager is not able to accept new requests, has terminated all requests in progress, or has terminated the specified request because of an error or a forced interrupt.

**Explanation**

The message might be due to any of the following causes.

- 1
  - The database manager has not been started on the database server.
  - The database manager was stopped.
  - The database agent was forced off by the system administrator.
  - The database agent was forced off by the DB2 Governor tool.
  - The database agent was terminated due to an abnormal termination of a key database manager process.

## Debugging Access to DB2

```
ERROR: CLI error trying to establish connection: [IBM][CLI Driver] SQL30082N Attempt to establish
connection failed with security
reason "19" ("USERID DISABLED or RESTRICTED"). SQLSTATE=08001
```

### DB2 Version 9.5 for Linux, UNIX, and Windows

#### SQL30082N

Security processing failed with reason *reason-code* (*reason-string*).

#### Explanation

An error occurred during security processing. The cause of the security error is described by the *reason-code* and corresponding *reason-string* value.

The following is a list of reason codes and corresponding reason strings:

#### 19 (USERID DISABLED or RESTRICTED)

The userid has been disabled, or the userid has been restricted from accessing the operating environment at this time.

**Questions?**

Jeff Simpson  
Sr. Systems Engineer

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