

# SAS Enterprise Guide for Programmers

Going Deep



Gonna be a Great One

If you're writing code in SAS Enterprise Guide,  
you're doing it wrong.



**BUSTED**



## Topics for programmers

- Make yourself at home (customize)
- Program editor tips
- Creating an all-code project
- Building a production-ready SAS program
- Using built-in version control
- Using external version control
- The debugger is your friend
- Checking on your macro vars

# Customize your options

Managing Results

Replace results:

Show generated wrapper code in SAS log

Recent Files Menu

Number of items to display in recent projects/programs menus:

Result Formats

<input type="checkbox"/> SAS Report	<input checked="" type="checkbox"/> HTML	<input type="checkbox"/> PDF
<input type="checkbox"/> RTE	<input type="checkbox"/> Text output	<input type="checkbox"/> PowerPoint
<input type="checkbox"/> Excel		

Default:

# Program editor tricks

- Turn on line numbers
- Get the tabs out
- Use abbreviations
- Let the editor format your code
- Zoom in and out
- Change the program editor font
- Column select with block select feature
- Use regex for find/replace
- Split pane viewing
- Break out to another editor

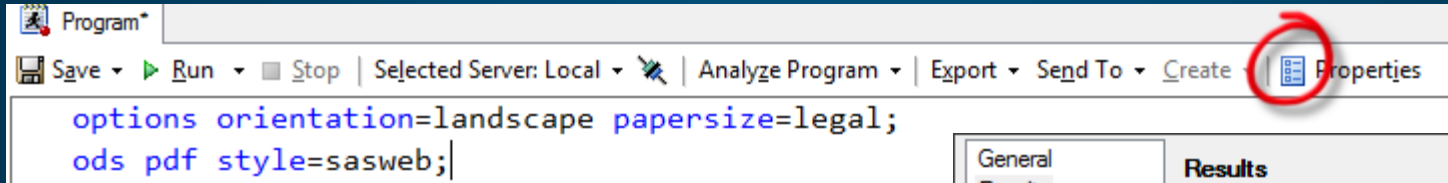
```
42 data _contents&i.(keep=zip memname);
43 length zip $200 memname $200; zip="%targdir/&&zname&i"; fid=dopen("targzip");
44 if fid=0 then stop; memcount=dnum(fid);
45 do i=1 to memcount; memname=dread(fid,i);
46     /* save only full file names, not directory names */
47     if (first(reverse(trim(memname))) ^= '/') then output; end; rc=dclose(fid);
48 run;
49
50 filename targzip clear;
51 %end;
52
53 /* Combine the member names into a single data set */
54 /* the colon notation matches all files with "_contents" prefix */
55 data &outlist.;
56     set _contents;
57 run;
```

<https://blogs.sas.com/content/sasdummy/sas-program-editor-tricks/>

# Organize a Code-only Project

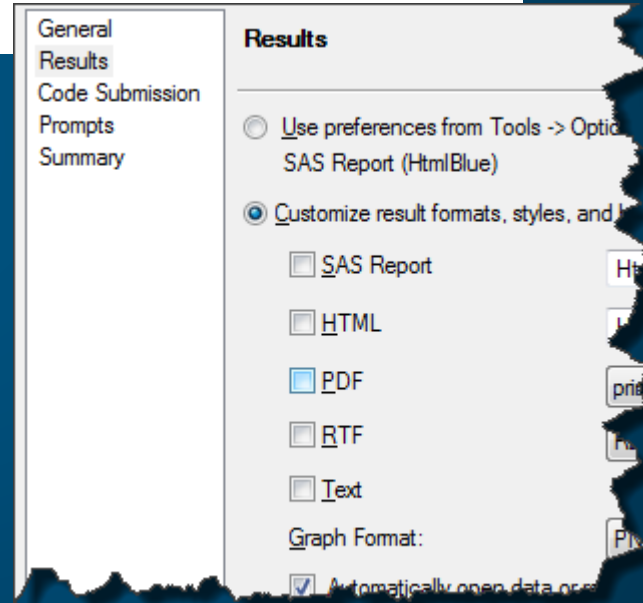
The screenshot displays the SAS Enterprise Guide interface for a project named "CodeProject - SAS Enterprise Guide". The "Project Tree" on the left shows a hierarchy: "Autoexec" (containing "Programs" and "AssignLibs"), "GitHub reporting" (containing "Note" and "Programs"), and "Programs" (containing "githubstats" and "githubemail"). The main workspace shows a workflow diagram with two "Run" icons labeled "githubstats" and "githubemail", connected by a dashed arrow. A yellow warning box is overlaid on the diagram, containing the text: "These programs rely on a stored /auth file, which must reside in your user profile." The interface includes a menu bar (File, Edit, View, Tasks, Favorites, Program, Tools, Help) and a toolbar with various icons for file operations and workflow control.

# Run your code like it will run in prod



The screenshot shows the SAS Program Editor interface. The menu bar includes 'Save', 'Run', 'Stop', 'Selected Server: Local', 'Analyze Program', 'Export', 'Send To', 'Create', and 'Properties'. The 'Properties' button is circled in red. The code editor contains the following SAS code:

```
options orientation=landscape papersize=legal;  
ods pdf style=sasweb;
```



The screenshot shows the 'Results' dialog box in SAS. The 'Results' tab is selected in the left-hand menu. The 'Results' section contains the following options:

- Use preferences from Tools -> Options -> SAS Report (HtmlBlue)
- Customize result formats, styles, and...
  - SAS Report
  - HTML
  - PDF
  - RTF
  - Text
- Graph Format:
- Automatically open data or...

# Program history: version control built in

Commit Changes

Process Flow

- filenameZipExamp

filenameZipExample

```
1 ----- Difference (@@ -52,6 +5)
2       RATWeight;
3       run;
4
5 +title "Summary stats for the Hazmat data";
6 /* Summary stats for this data */
7 proc means data=hazmat;
8       run;
9
```

Description of changes:

Added a title

Commit Reset Changes

History for filenameZipExample (Process Flow)

Compare Compare with Editor Edit Description Revert Help (F1)...

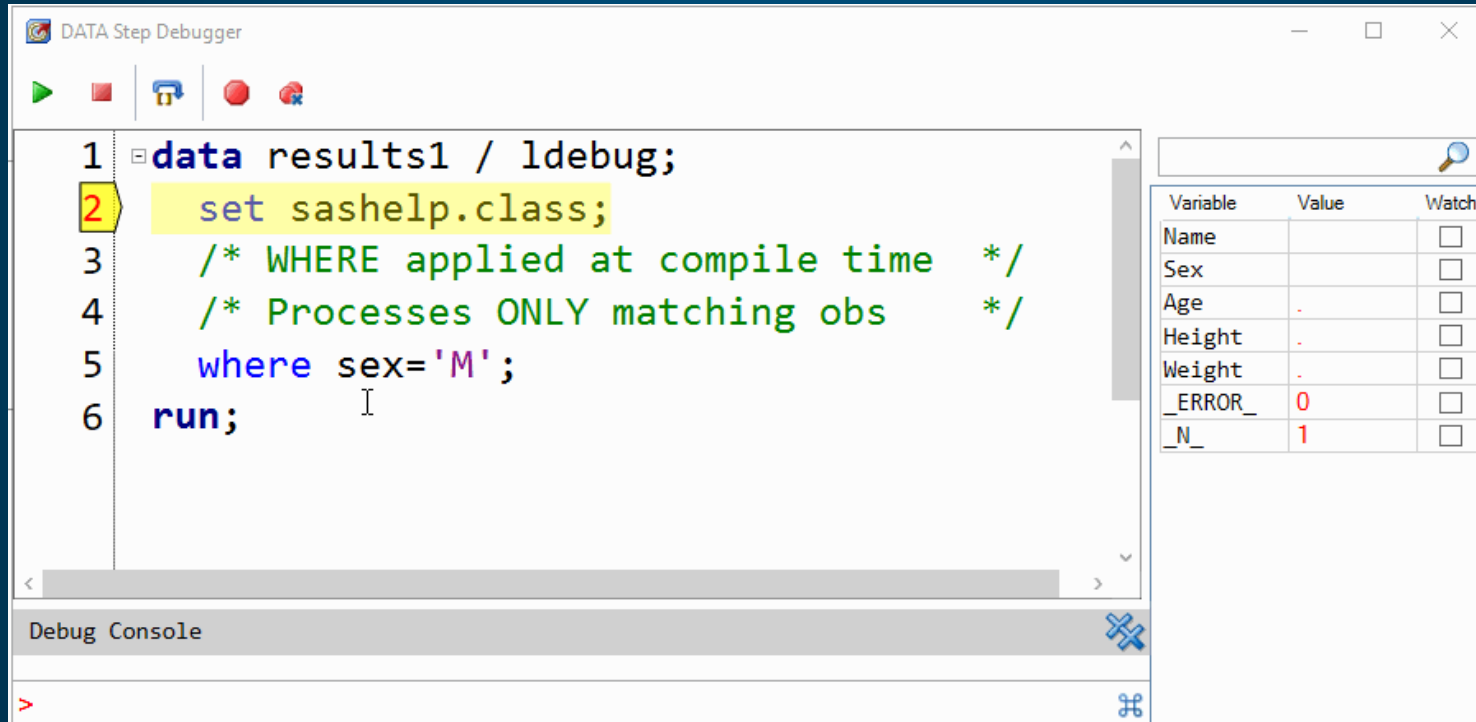
Version	Date	Author	Description
2	10/12/2014 11:35:34 AM	PUBLIC	Added a title
1	10/9/2014 2:24:39 PM	PUBLIC	add a useful PROC MEANS

Version 2 | Version 2 compared with version 1 | Blame

Line	Author	Version	Content
51	PUBLIC	1	PSUStrata
52	PUBLIC	1	RATWeight;
53	PUBLIC	1	run;
54	PUBLIC	1	
55	PUBLIC	2	title "Summary stats for the Hazmat data";
56	PUBLIC	1	/* Summary stats for this data */
57	PUBLIC	1	proc means data=hazmat;
58	PUBLIC	1	run;
59	PUBLIC	1	
60	PUBLIC	1	title "Box plot of Vehicles # per incident";
61	PUBLIC	1	ods graphics / height=200 width=450;
62	PUBLIC	1	proc sgplot data=hazmat;
63	PUBLIC	1	hbox vehiclenumber;
64	PUBLIC	1	label VehicleNumber="# of vehicles";
65	PUBLIC	1	xaxis labelattrs=(size=12) valueattrs=(size=12);
66	PUBLIC	1	run;



# DATA step debugger



The screenshot displays the SAS DATA Step Debugger interface. The main window shows the following SAS code:

```
1 data results1 / ldebug;
2 set sashelp.class;
3 /* WHERE applied at compile time */
4 /* Processes ONLY matching obs */
5 where sex='M';
6 run;
```

The second line, `set sashelp.class;`, is highlighted in yellow, and a yellow arrow points to it. The cursor is positioned at the end of line 6.

The right panel shows a table with the following columns: Variable, Value, and Watch.

Variable	Value	Watch
Name		<input type="checkbox"/>
Sex		<input type="checkbox"/>
Age	.	<input type="checkbox"/>
Height	.	<input type="checkbox"/>
Weight	.	<input type="checkbox"/>
__ERROR__	0	<input type="checkbox"/>
N_	1	<input type="checkbox"/>

The bottom panel is labeled "Debug Console" and is currently empty.

# Examine your macro variables

- Tools->SAS Macro Variable Viewer

The screenshot shows the 'Macro variable values' window in SAS. The 'Server' is set to 'Local'. The window displays a list of macro variables and their values, categorized into 'Global' and 'Automatic' sections. Below the list is a 'Macro expression quick view' section where the expression `%sysfunc(today(),date9.)` is entered, and it evaluates to `23APR2018`. The window also shows the evaluation time as 0 seconds.

Macro variable	Value
<b>Global</b>	
SASWORKLOCATION	"C:\Users\sasrch\AppData\Loc...
_CLIENTAPP	'SAS Enterprise Guide'
_CLIENTAPPABBREV	EG
_CLIENTMACHINE	'L77841'
_CLIENTUSERID	'sasrch'
_CLIENTUSERNAME	'Chris Hemedinger'
_CLIENTVERSION	'7.100.5.6132'
_EG_WORKSPACEINIT	1
_SASHOSTNAME	177841.na.SAS.com'
_SASSERVERNAME	'Local'
<b>Automatic</b>	
AFDSID	0
AFDSNAME	
AFLIB	
AFCTD1	

Macro expression quick view

`%sysfunc(today(),date9.)` =>

Evaluates to:

`23APR2018`

Evaluated expression in 0 seconds



Find more at [the SAS Dummy blog](#)  
Thank you!

sas.com