

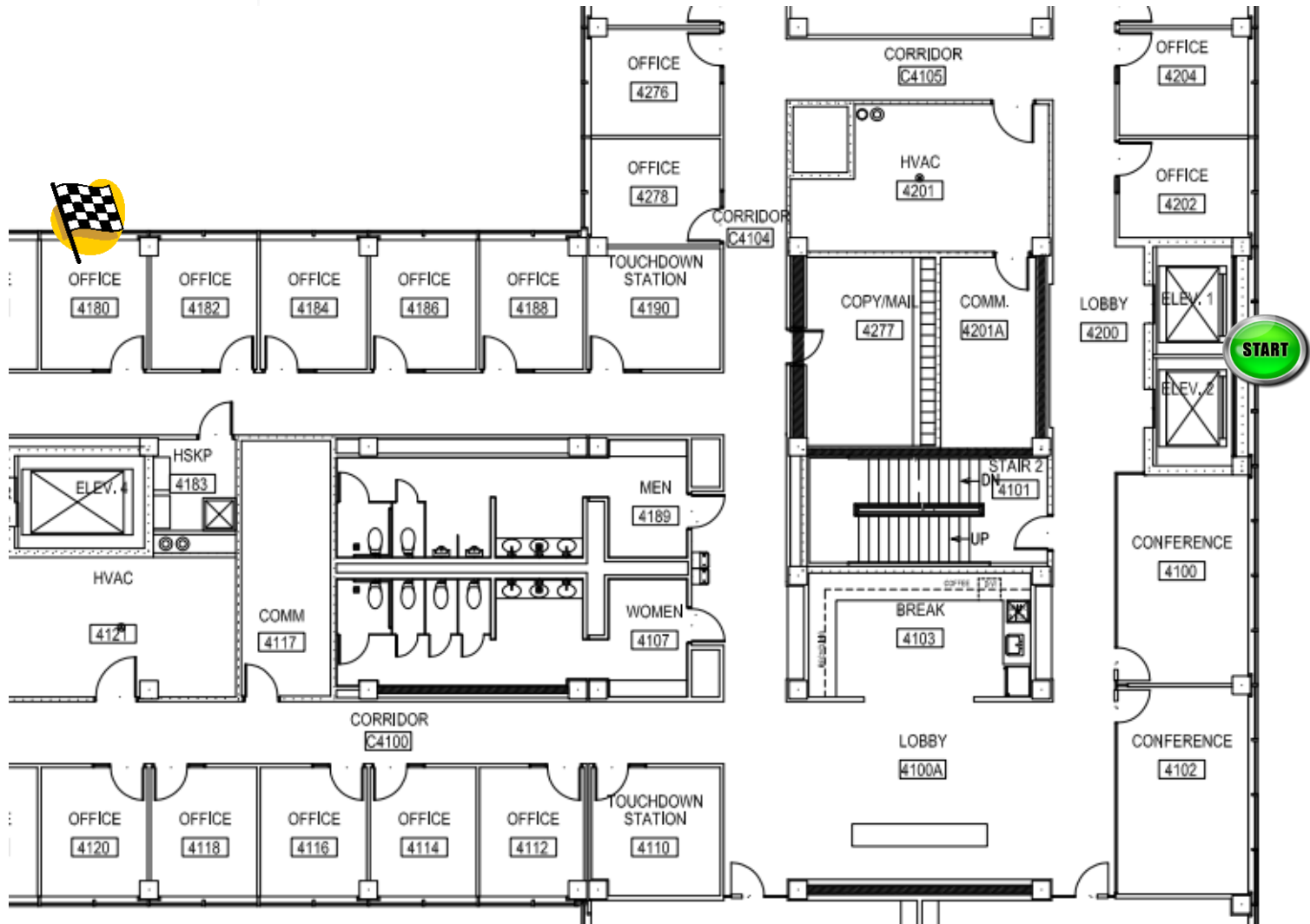
GETTING THE MOST OUT OF SAS ENTERPRISE GUIDE

CHRIS HEMEDINGER, SAS



CREATURES OF HABIT

WHICH IS THE QUICKEST ROUTE?



AGENDA



AREAS OF STUDY

Options



Organize your work



Add-ons (custom tasks)

MY USAGE PROFILE

What do I know
about SAS
productivity?

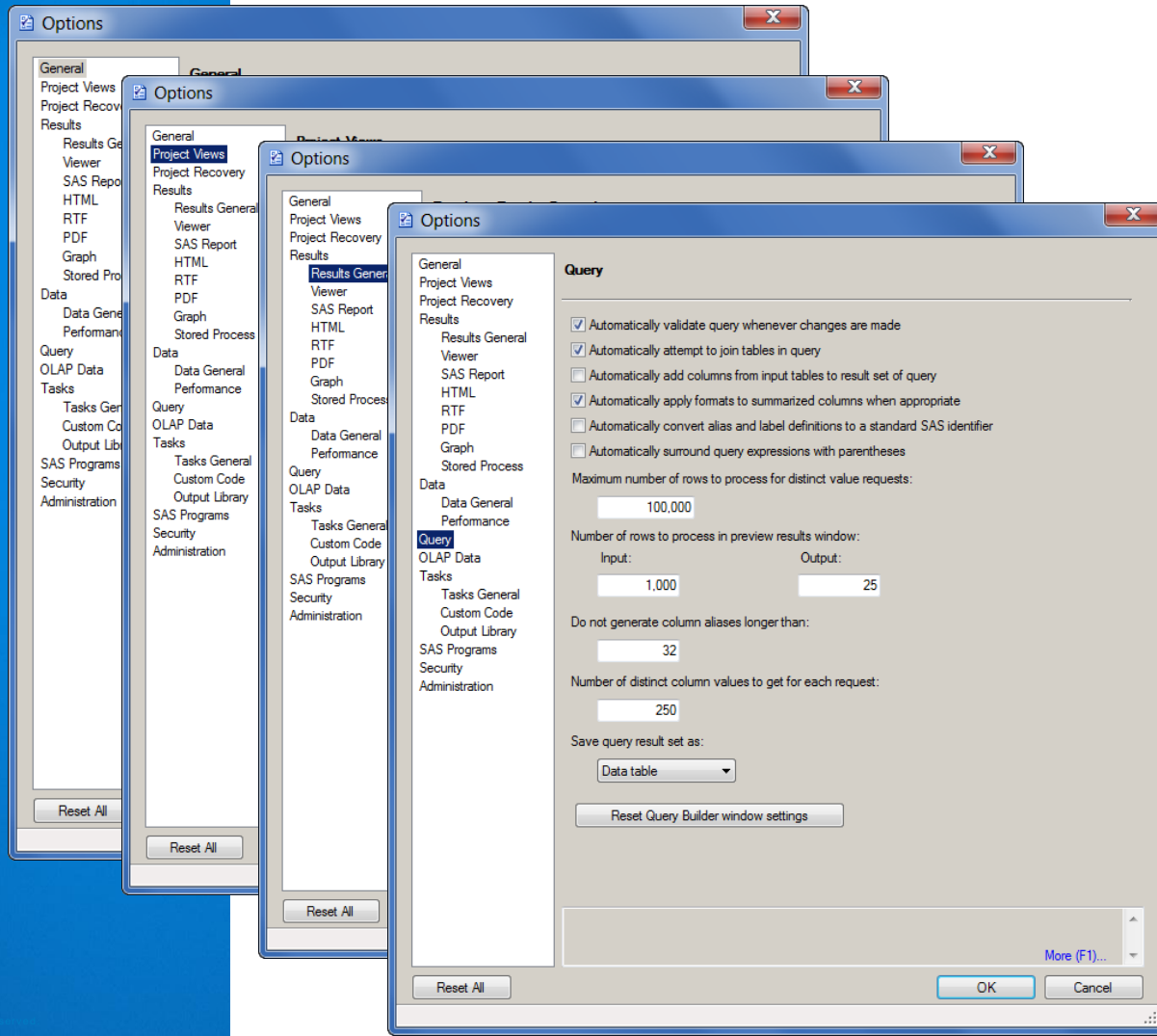
HOW I USE SAS TOOLS

- My job: approximately 50% *using* SAS
- Mostly programming
- Some reporting in UIs (point-and-click, web)
- I use SAS Enterprise Guide for almost *all* of it.

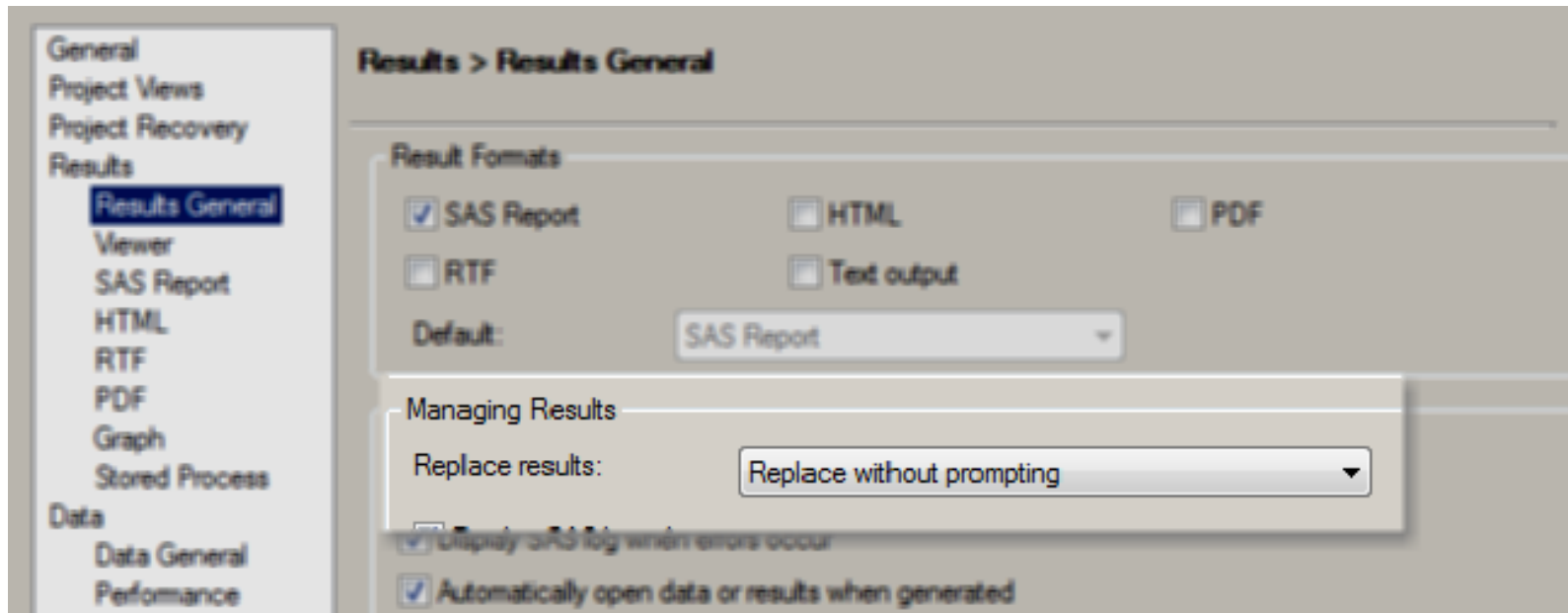
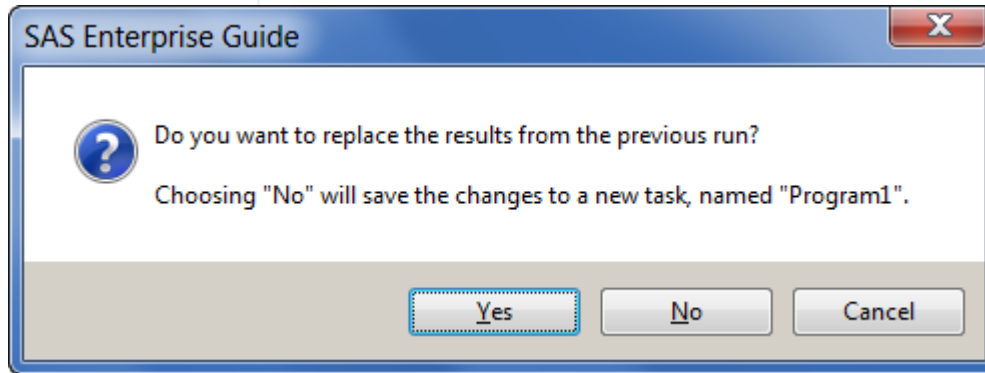
OPTIONS

DON'T SETTLE FOR THE DEFAULT

- Over 150 options in Tools->Options
- Are the default settings optimized for you?



FAVE OPTION #1 REPLACE RESULTS BEHAVIOR



FAVE OPTION #2 DECLUTTER THE SAS LOG

```
1 1
2
3 1 ;*;*";*/;quit;run;
4 2 OPTIONS PAGENO=MIN;
5 3 %LET _CLIENTTASKLABEL='Program1';
6 4 %LET _CLIENTPROJECTPATH='';
7 5 %LET _CLIENTPROJECTNAME='';
8 6 %LET _SASPROGRAMFILE=;
9 7
10 8 ODS _ALL_ CLOSE;
11 9 OPTIONS DEV=ACTIVEX;
12 10 GOPTIONS XPIXELS=0 YPIXELS=0;
13 11 FILENAME EGSR TEMP;
14 12 ODS tagsets.sasreport13(ID=EGSR) FILE=EGSR STYLE=
15 12 ! STYLESHEET=(URL="file:///C:/Program%20Files/SASHo
16 12 ! GPATH=&sasworklocation ENCODING=UTF8 options(rol
17 NOTE: Writing TAGSETS.SASREPORT13(EGSR) Body file:
18 13
19 14 GOPTIONS ACCESSIBLE;
20 15 %put &sysdate;
21 05NOV12
22 16
23 17 GOPTIONS NOACCESSIBLE;
24 18 %LET _CLIENTTASKLABEL=;
25 19 %LET _CLIENTPROJECTPATH=;
26 20 %LET _CLIENTPROJECTNAME=;
27 21 %LET _SASPROGRAMFILE=;
28 22
29 23 ;*;*";*/;quit;run;
```

```
1 1
2
3 1 %_eg_hidenotesandsource;
4 5 %_eg_hidenotesandsource;
5 20
6 21 %put &sysdate;
7 05NOV12
8 22
9 23 %_eg_hidenotesandsource;
10 35
11 36
12 37 %_eg_hidenotesandsource;
13 40
14
```



A screenshot of the SAS Results General dialog box. The 'Results' section is expanded to show 'Results General'. Under 'Result Formats', 'SAS Report' is checked, and 'Default' is set to 'SAS Report'. Under 'Managing Results', 'Replace results' is set to 'Replace without prompting'. Several checkboxes are checked: 'Display SAS log when errors occur', 'Automatically open data or results when generated', 'Link handcoded ODS results', 'Change task icon when warnings occur', and 'Show generated wrapper code in SAS log'. The 'Output Library' section is also visible at the bottom.

FAVE OPTION #3 SHOW DETAILS WHEN BROWSING DATA

The screenshot shows the 'Open Data' dialog box in SAS. The 'Look in' field is set to 'SASHELP'. A list of data files is displayed with columns for Name, Label, Member Type, Indexed, Data Set Type, Row count, Date Created, Date Modified, and Size. The 'LIBRARY' file is selected. Below the list, the 'Files of type' is set to 'SAS Data Files'. A settings panel is open, showing the 'General' tab with the option 'Show full details when viewing SAS Libraries in File Dialog details view' checked.

Name	Label	Member Type	Indexed	Data Set Type	Row ...	Date Created	Date Modified	Size
GAS	Nitrogen Oxide Emissions from a Singl...	Data		DATA	171	5/24/2011 4:50:43 PM	5/24/2011 4:50:43 PM	12288
GCTYPE	USPS standard street type abbreviati...	Data	Yes	DATA	601	5/24/2011 4:05:43 PM	5/24/2011 4:05:43 PM	20480
GEOEXM	Primary street lookup data for PROC ...	Data	Yes	DATA	20004	5/24/2011 4:02:55 PM	5/24/2011 4:02:55 PM	1802...
GEOEXP	Tertiary street lookup data for PROC ...	Data		DATA	726257	5/24/2011 4:02:28 PM	5/24/2011 4:02:28 PM	1181...
GEOEXS	Secondary street lookup data for PR...	Data		DATA	101000	5/24/2011 4:02:28 PM	5/24/2011 4:02:28 PM	9863...
GERM_MULTI		Data		DATA	16	8/16/2012 4:10:42 AM	8/16/2012 4:10:42 AM	32768
GNGMSG	Graph-N-Go Message File	Data	Yes	MSGFILE	142	5/24/2011 3:39:42 PM	5/24/2011 3:39:42 PM	81920
GNGSMP1	Sample Chart Data For Graph-N-Go	Data		DATA	36	5/24/2011 3:39:26 PM	5/24/2011 3:39:26 PM	16384
GNGSMP2		Data		DATA	8	5/24/2011 3:39:14 PM	5/24/2011 3:39:14 PM	16384
GNP	gnp/macro data (quarterly: 1960-1991)	Data		DATA	126	8/16/2012 12:39:07 ...	8/16/2012 12:39:07 ...	12288
GRIDDED	Gridded Weight and Height	Data		DATA	3600	5/24/2011 4:06:22 PM	5/24/2011 4:06:22 PM	122880
GRMNSTOP		Data		DATA	217	8/16/2012 4:11:13 AM	8/16/2012 4:11:13 AM	12288
GULFOIL	Monthly Oil and Gas Production, Gulf ...	Data		DATA	3760	8/16/2012 12:36:54 ...	8/16/2012 12:36:54 ...	229376
HEART	Framingham Heart Study	Data		DATA	5209	5/24/2011 4:06:34 PM	5/24/2011 4:06:34 PM	901120
HKSCS01		Data		DATA	1812	5/24/2011 3:40:09 PM	5/24/2011 3:40:09 PM	24576
HTMUTIL		Data		DATA	6	5/26/2011 12:14:27 ...	5/26/2011 12:14:27 ...	24576
HUMID	Source: W. L. Donn, Meteorology, 4t...	Data		DATA	584	5/24/2011 4:06:08 PM	5/24/2011 4:06:08 PM	28672
IMAGERW	Portable SAS/IMAGE format information	Data		DATA	21	5/24/2011 4:14:19 PM	5/24/2011 4:14:19 PM	32768
IMGMSG	Image NLS message file	Data	Yes	MSGFILE	112	5/24/2011 4:14:12 PM	5/24/2011 4:14:12 PM	81920
IRIS	Fisher's Iris Data (1936)	Data		DATA	150	5/24/2011 4:06:08 PM	5/24/2011 4:06:08 PM	16384
ITAL_MULTI		Data		DATA	520	8/16/2012 4:10:29 AM	8/16/2012 4:10:29 AM	163840
JAC		Data		DATA	7923	5/24/2011 3:41:19 PM	5/24/2011 3:41:19 PM	184320
KOC		Data		DATA	2561	5/24/2011 3:40:49 PM	5/24/2011 3:40:49 PM	53248
LAKE	Sample 3d data of lake depth	Data		DATA	315	5/24/2011 4:06:15 PM	5/24/2011 4:06:15 PM	16384
LIBRARY		Data		DATA	2	5/24/2011 3:55:40 PM	5/24/2011 3:55:40 PM	32768

File name:

Files of type: SAS Data Files

General

- Show Welcome window at start-up
- Enable project log for new projects
- Automatically run "Autoexec" process flow when project opens
- Include project name in exported filenames
- Show full details when viewing SAS Libraries in File Dialog details view
- Enable hardware rendering



FAVE OPTION #4 DO YOU FEEL WELCOME ENOUGH?

The screenshot displays the SAS Enterprise Guide interface. On the left, the 'Welcome to SAS Enterprise Guide' dialog box is open, showing options to 'Open a project', 'New', and 'Assistance'. A red arrow points to the 'Don't show this window again' checkbox at the bottom of the dialog. On the right, the 'File' menu is open, showing options like 'New', 'Open', 'Close Project', 'Save Project', 'Import Data', 'Run Project', 'Export', 'Send To', 'Publish', 'Page Setup...', 'Print Preview', 'Print...', 'Project Properties', 'Recent Projects', 'Recent Programs', and 'Exit'. The 'Recent Programs' submenu is also visible, listing several SAS programs.

Welcome to SAS Enterprise Guide

Select one of these options to get started:

Open a project

- C:\Projects\NetflixProject\source_control_with_saseg\NetflixHistory51.egg
- C:\Projects\NetflixProject\netflix_project\netflixHistory51.egg
- C:\Projects\NetflixProject\netflix_project\netflixHistory43.egg
- C:\Projects\TASS\OpenQuestion.egg
- C:\DataSources\DonorsChoose\DonorsChoose51.egg
- More projects ...

New

- New Project
- New SAS Program
- New Data

Assistance

- Tutorial: Getting Started with SAS Enterprise Guide

Don't show this window again

File Edit View Tasks Program Tools Help

- New
- Open
- Close Project
- Save Project Ctrl+S
- Save Project As...
- Save Ctrl+Shift+S
- Save As...
- Import Data
- Run Project
- Schedule Project
- Export
- Send To
- Publish
- Page Setup...
- Print Preview
- Print... Ctrl+P
- Project Properties
- Recent Projects
- Recent Programs
- Exit

Process Flow

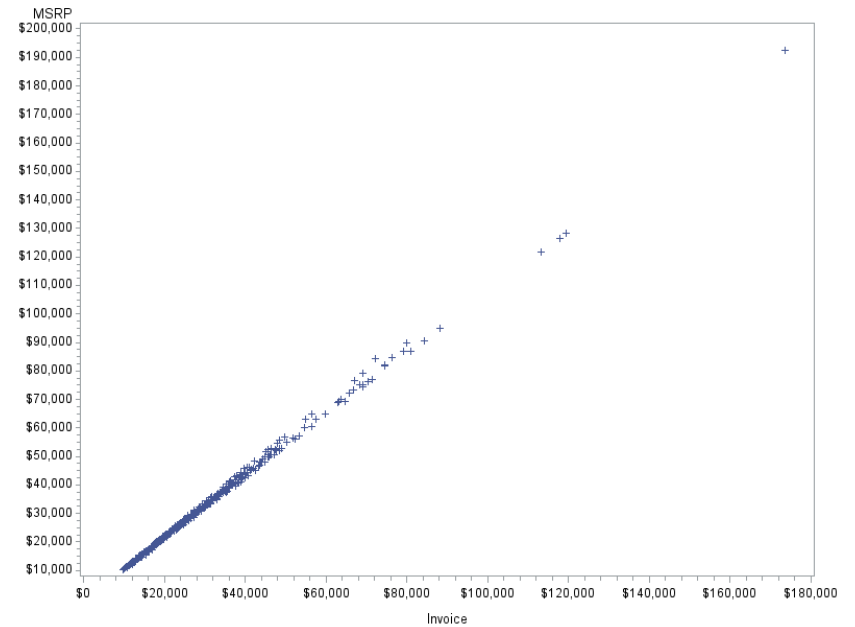
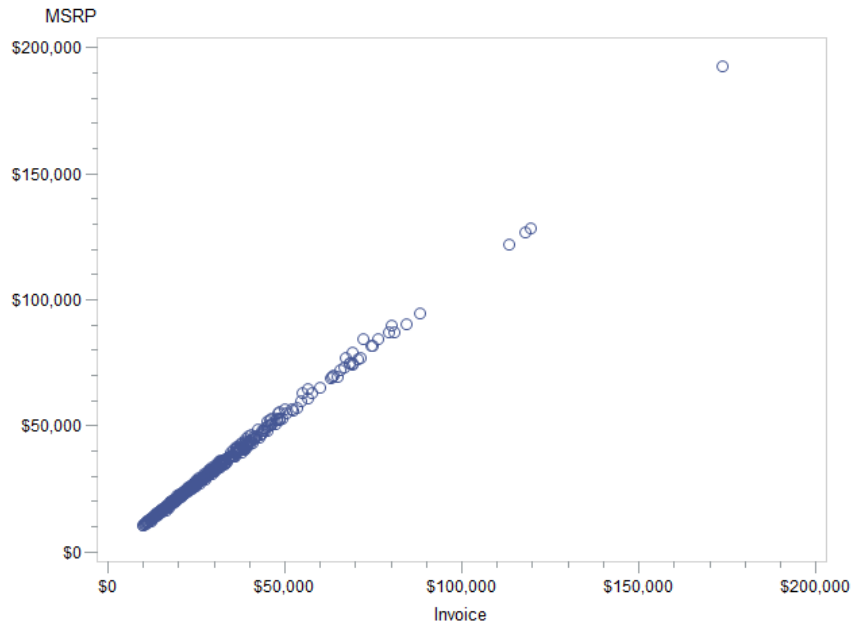
- Run
- Stop
- Export

Recent Programs

- 1 budgeting.sas
- 2 TopNCategories.sas
- 3 dosubl_sysecho.sas
- 4 networkdays_example.sas
- 5 ReportOnSASProcesses.sas
- 6 ReportOnProcesses.sas



FAVE OPTION #5 SWAP IN PNG FOR ACTIVEX



Results > Graph

Graphs

Graph Format:

- ActiveX
- ActiveX
- Java
- GIF
- JPEG
- ActiveX image
- Java image
- SAS EMF
- PNG

Texture maps location:

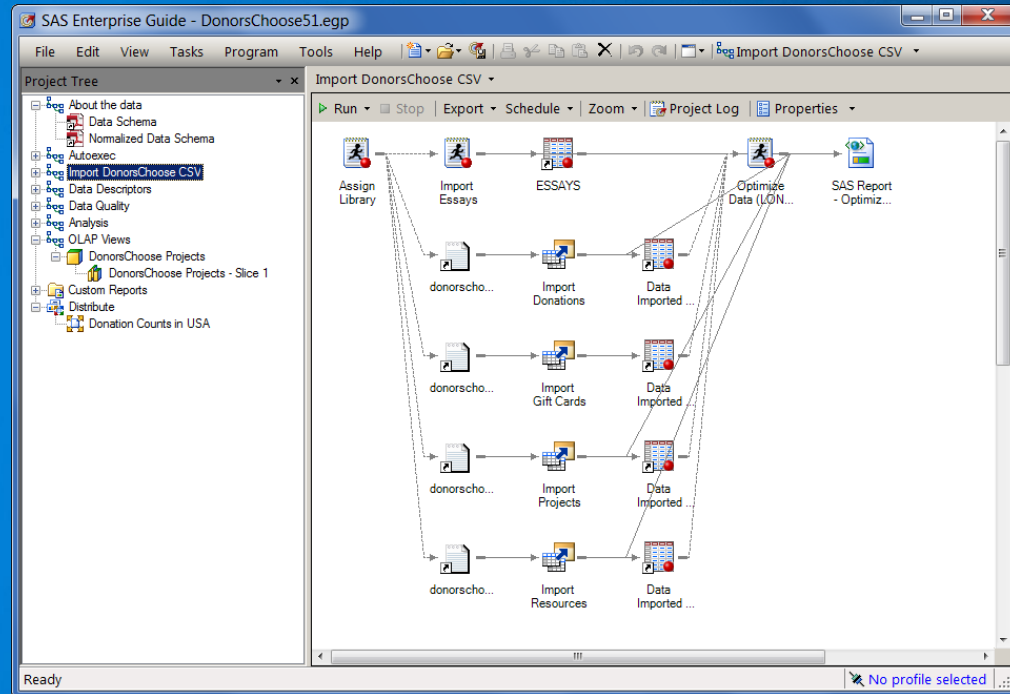
C:\Program Files\SAS\Shared Files\Images

Browse



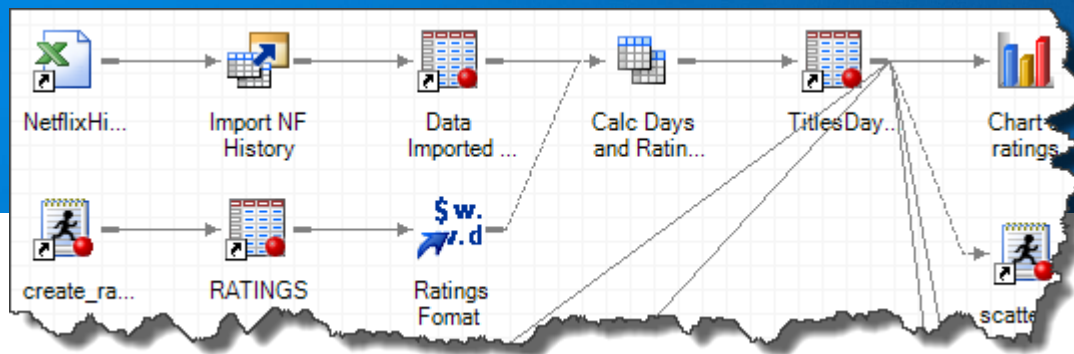
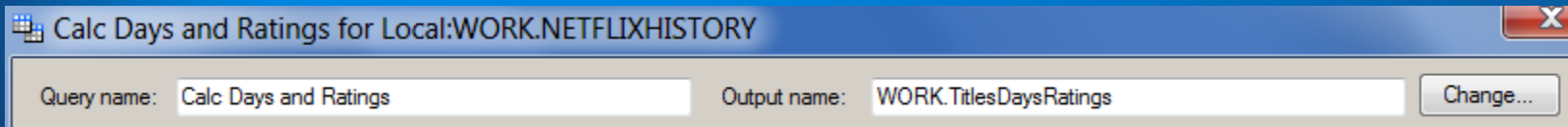
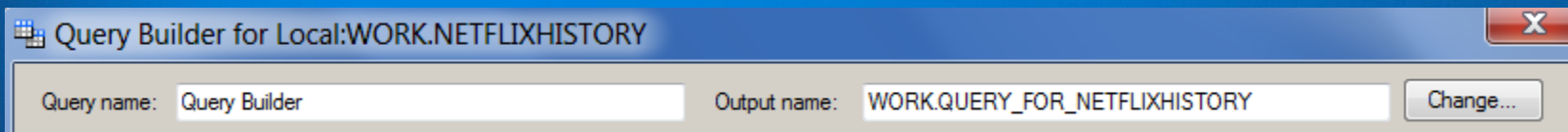
ORG TIP #1 DISCIPLINE THROUGH THE PROCESS FLOW

- Arrange process flows in order
- Assign meaning names to flows
- Avoid large process flows



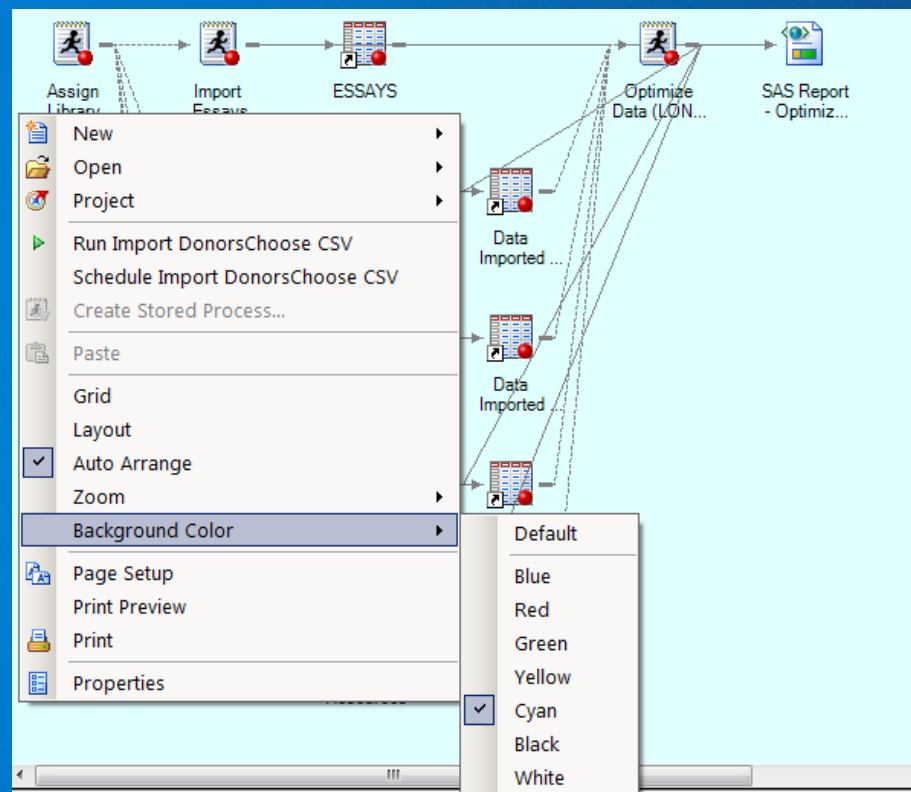
ORG TIP #2 USE YOUR NAMING POWER

- Rename tasks, queries, and programs
- Rename default output data sets



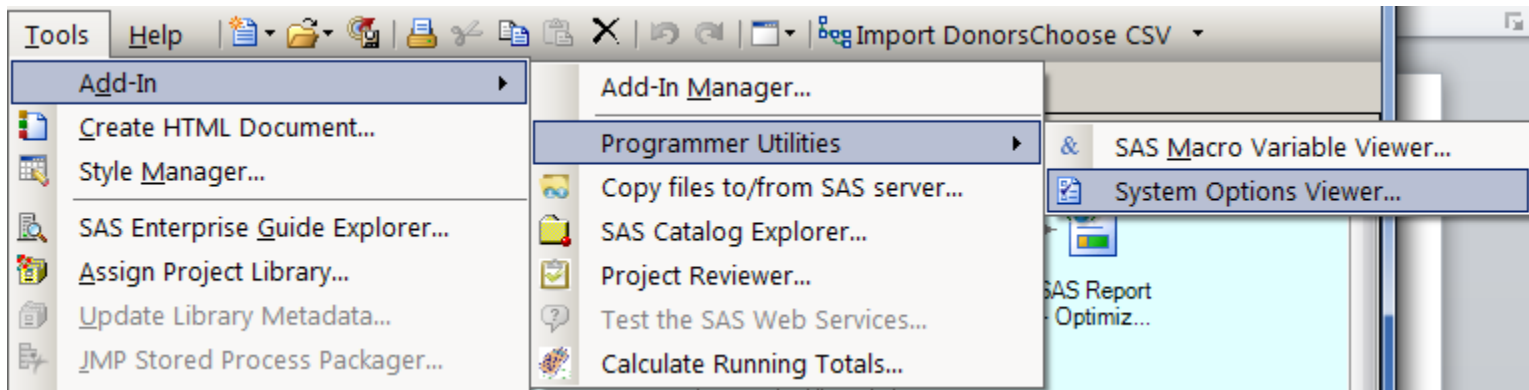
ORG TIP #3 FENG SHUI IN YOUR FLOW

- Use Auto Arrange first
- Tweak arrangement manually
- Change background color



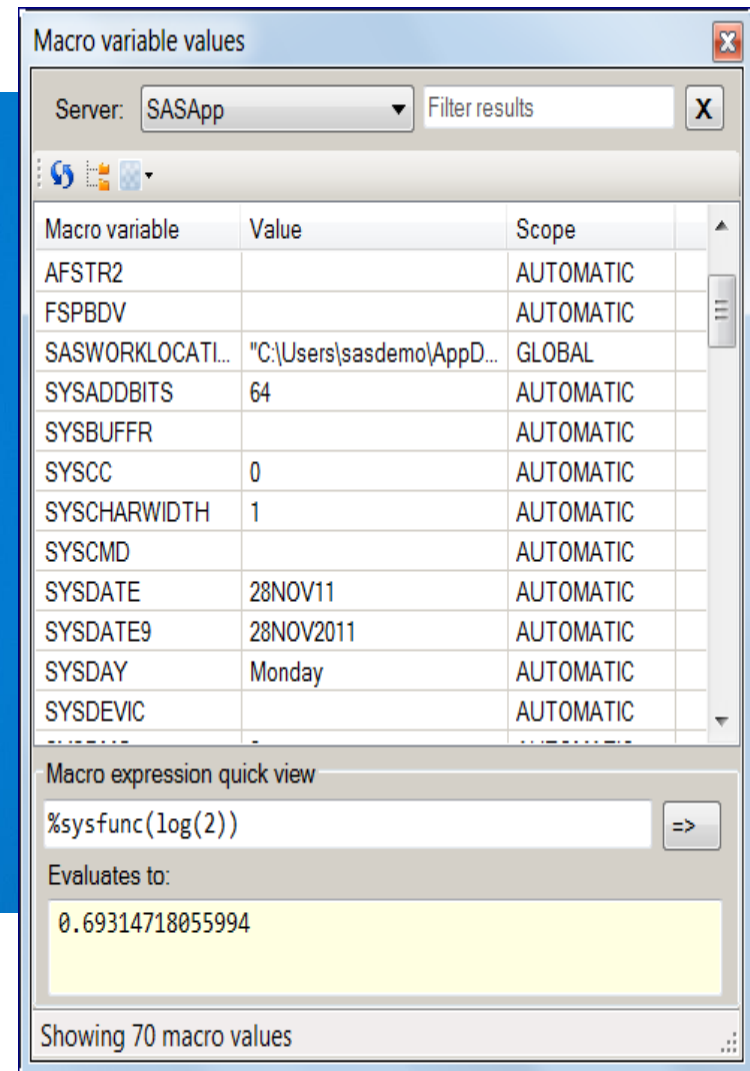
CUSTOM TASKS WHEN “BUILT IN” IS NOT ENOUGH

- Custom tasks extend the built-in features
- Many available for download from:
 - <http://go.sas.com/customtasksapi>
 - <http://blogs.sas.com/sasdummy>
- Easy to install and use
- See a need? Write your own.



CUSTOM TASK #1 INSPECTING MACRO VARIABLES

- “Macro variable view-inator”
- View names/values/scope
- Filter by names or values
- “Quick view” for macro expressions



Macro variable values

Server: SASApp Filter results X

Macro variable	Value	Scope
AFSTR2		AUTOMATIC
FSPBDV		AUTOMATIC
SASWORKLOCATI...	"C:\Users\sasdemo\AppData...	GLOBAL
SYSADDBITS	64	AUTOMATIC
SYSBUFFR		AUTOMATIC
SYSCC	0	AUTOMATIC
SYSCHARWIDTH	1	AUTOMATIC
SYSCMD		AUTOMATIC
SYSDATE	28NOV11	AUTOMATIC
SYSDATE9	28NOV2011	AUTOMATIC
SYSDAY	Monday	AUTOMATIC
SYSDEVIC		AUTOMATIC

Macro expression quick view

=>

Evaluates to:

0.69314718055994

Showing 70 macro values



CUSTOM TASK #2 VIEWING SAS SYSTEM OPTIONS

- “System options view-inator”
- View name/value/group
- Filter by name/value
- Shows startup value, description, and how set

Option	Value	Group
MAXSEGRATIO	75	PERFORMA...
MCOMPILE	MCOMPILE	MACRO
MCOMPILENOTE	NONE	MACRO
MEMBLKSZ	16777216	MEMORY
MEMCACHE	0	SASFILES
MEMLIB	NOMEMLIB	SASFILES
MEMMAXSZ	2147483648	MEMORY
MEMSIZE	2147483648	PERFORMA...
MERGENOBY	NOWARN	SASFILES
MERROR	MERROR	MACRO
METAAUTORES0...		META
METACONNECT		META

About MEMSIZE

Current value: 2147483648

Startup value: 2147483648

Where valid: Startup only

Last set in: Config Files

Specifies the limit on the total amount of memory to be used by the SAS System

Showing 556 option values



CUSTOM TASK #3 REVIEWING PROJECT CONTENTS/METRICS

Task metrics for NetflixHistory

Select process flow:

Analyze Netflix Data

Tasks in "Analyze Netflix Data"

#	Name	Type	Modified by	Running time	Date modified	Date created	Errors?
1	Import NF History	Import data	saschr	1s	2/13/2012 ...	10/26/2009 1:27 PM	No
2	CreateRatingsData	SAS program	saschr	< 1s	2/13/2012 ...	10/26/2009 1:44 PM	No
3	Ratings Fomat	Task	saschr	1s	2/13/2012 ...	10/26/2009 1:51 PM	No
4	Calc Days and Ratings	Query builder	saschr	< 1s	2/13/2012 ...	10/26/2009 1:32 PM	No
5	Chart of ratings	Task	saschr	2s	2/13/2012 ...	10/26/2009 3:58 PM	No
6	Scatter Days*ShipDate	SAS program	saschr	5s	2/13/2012 ...	10/26/2009 3:52 PM	No
7	Summary Statistics	Task	saschr	12s	2/13/2012 ...	10/26/2009 4:20 PM	No
8	Movies we like	Task	saschr	< 1s	2/13/2012 ...	10/27/2009 12:31 PM	No
9	Prepare Time Series Data	Task	saschr	3s	2/13/2012 ...	9/18/2011 10:07 AM	No
10	Create Series plots	SAS program	saschr	2s	2/13/2012 ...	9/18/2011 10:05 AM	No
11	Didn't like	Task	saschr	< 1s	2/13/2012 ...	10/27/2009 12:31 PM	No

Report server: Local Create report Close Help

11 items displayed, total runtime: 32s



CUSTOM TASK #3 REVIEWING PROJECT METRICS: REPORTING

Tasks and programs in NetflixHistory

Process Flow=Analyze Netflix Data

ordinal	Task	Type	User ID	Runtime (seconds)	Created on	Modified on	Error?
1	Import NF History	Import data	saschr	1.72	26OCT2009:01:27:47	13FEB2012:02:22:03	N
2	CreateRatingsData	SAS program	saschr	0.93	26OCT2009:01:44:35	13FEB2012:01:54:22	N
3	Ratings Fomat	Task	saschr	1.62	26OCT2009:01:51:47	13FEB2012:01:54:26	N
4	Calc Days and Ratings	Query builder	saschr	0.59	26OCT2009:01:32:01	13FEB2012:01:54:26	N
5	Chart of ratings	Task	saschr	2.76	26OCT2009:03:58:25	13FEB2012:02:26:17	N
6	Scatter Days*ShipDate	SAS program	saschr	5.18	26OCT2009:03:52:15	13FEB2012:01:54:22	N
7	Summary Statistics	Task	saschr	12.20	26OCT2009:04:20:25	13FEB2012:01:54:46	N
8	Movies we like	Task	saschr	0.83	27OCT2009:12:31:18	13FEB2012:01:54:51	N
9	Prepare Time Series Data	Task	saschr	3.94	18SEP2011:10:07:35	13FEB2012:01:54:48	N
10	Create Series plots	SAS program	saschr	2.58	18SEP2011:10:05:54	13FEB2012:01:54:22	N
11	Didn't like	Task	saschr	0.48	27OCT2009:12:31:18	13FEB2012:01:54:52	N
Process Flow				32.83			
Items in flow: 11							

Process Flow=Analyze Netflix Streaming

ordinal	Task	Type	User ID	Runtime (seconds)	Created on	Modified on	Error?
1	Import Data (NetflixInstantWatch.xlsx[Sheet1\$A16:E605])	Import data	saschr	1.26	19SEP2011:03:18:33	07JUL2012:02:34:07	N
2	Clean Data	Query builder	saschr	0.77	19SEP2011:03:21:07	07JUL2012:02:34:08	N
3	One-Way Frequencies1	Task	saschr	1.67	02OCT2011:10:03:39	07JUL2012:02:34:10	N
4	Title Frequency (Series)	Task	saschr	0.65	15JUN2012:11:51:55	07JUL2012:03:20:44	N
5	Summarize Daily Minutes	Query builder	saschr	0.42	24SEP2011:03:21:30	07JUL2012:02:34:15	N
6	One-Way Frequencies	Task	saschr	0.44	02OCT2011:09:53:28	07JUL2012:02:34:15	N
7	Prep	SAS program	saschr	0.55	24SEP2011:03:48:59	07JUL2012:03:27:33	N
8	Create Plots	SAS program	saschr	2.11	24SEP2011:03:05:55	07JUL2012:03:27:33	N
Process Flow				7.87			
				40.70			
Items in flow: 8							
Total items in project: 19							



BONUS TOOL SEARCHING SAS ENTERPRISE GUIDE PROJECTS

- “EG Project search-inator”
- Search entire folder of EGP files
- Search for text in code/log/notes/process flow
- Open project from this tool

Name	Type	Flow	Location	Project	Match
Program 1	SAS program	Process Flow	Line 20	imapdbcs.egp	WHERE (d.libname=c.libname and d.memname=c.mem...
Program 1	SAS program	Process Flow	Line 21	imapdbcs.egp	and (d.libname ="B000000G" and d.memname=""&trim(...
Program 1 - Log	SAS log	Process Flow	Line 34	imapdbcs.egp	31 libname B000000G sasioime
Program 1 - Log	SAS log	Process Flow	Line 50	imapdbcs.egp	44 select * from dictionary.columns as c where c.lib...
Program 1 - Log	SAS log	Process Flow	Line 60	imapdbcs.egp	50 WHERE (d.libname=c.libname and d.memname=...
Program 1 - Log	SAS log	Process Flow	Line 63	imapdbcs.egp	51 and (d.libname ="B000000G" and d.memname=...
Program	SAS program	Process Flow	Line 1	lmapDupNa...	libname test "C:\SAS\Data\DupMaps";
Program - Log	SAS log	Process Flow	Line 5	lmapDupNa...	19 libname test "C:\SAS\Data\DupMaps";
Proclnfomaps...	SAS program	Process Flow	Line 28	lmapDupNa...	libname _egimle infomaps
Proclnfomaps...	SAS log	Process Flow	Line 99	lmapDupNa...	41 libname _egimle infomaps
kivaProgram	SAS program	Process Flow	Line 37	kivaData.egp	libname SXLELIB xml xmlmap=SXLEMAP access=REA...
kivaProgram	SAS program	Process Flow	Line 38	kivaData.egp	libname kiva "&KivaRoot\datasets";
kivaProgram	SAS program	Process Flow	Line 66	kivaData.egp	libname SXLELIB xml xmlmap=SXLEMAP access=REA...
kivaProgram	SAS program	Process Flow	Line 67	kivaData.egp	libname kiva "&KivaRoot\datasets";
kivaProgram - ...	SAS log	Process Flow	Line 58	kivaData.egp	51 libname SXLELIB xml xmlmap=SXLEMAP acc...
kivaProgram - ...	SAS log	Process Flow	Line 59	kivaData.egp	52 libname kiva "&KivaRoot\datasets";
kivaProgram - ...	SAS log	Process Flow	Line 18438	kivaData.egp	80 libname SXLELIB xml xmlmap=SXLEMAP acc...
kivaProgram - ...	SAS log	Process Flow	Line 18439	kivaData.egp	81 libname kiva "&KivaRoot\datasets";
Program 1	SAS program	Process Flow	Line 1	kivaData.egp	libname kiva "c:\public\Kiva\datasets";
Program 1 - Log	SAS log	Process Flow	Line 20	kivaData.egp	15 libname kiva "c:\public\Kiva\datasets";

Opening C:\Users\sasch\Documents\EG4.3 projects\whomovedmyinfomaps.egp
Opening C:\Users\sasch\Documents\EG4.3 projects\wmpExample.egp
Opening C:\Users\sasch\Documents\EG4.3 projects\workingCRP.egp
Opening C:\Users\sasch\Documents\EG4.3 projects\YouAreWhatYouTweet.egp
113 project files processed, found 425 matches

113 project files processed, found 425 matches



MANY MORE SURFACE := “SCRATCHED”

- Lots of small stuff:
 - Keyboard shortcuts
 - Editor macros/abbreviations
 - Application options vs. item-level options vs. project-level options
 - Using source management (collaboration)
 - Automating tasks
- If it's a challenge to you, ASK a question!

STAY CONNECTED

**Many SAS
Enterprise Guide
experts in the
world!**

LEARN FROM OTHERS

- Blogs @ SAS
- Discussion forums on support.sas.com/communities
- Conference papers

THANK YOU



**THE
POWER
TO KNOW.**

Chris Hemedinger

Blog: <http://blogs.sas.com/sasdummy>

Twitter: @cjdinger