Tips and Tricks to Using SAS® Enterprise Guide® in a BI World

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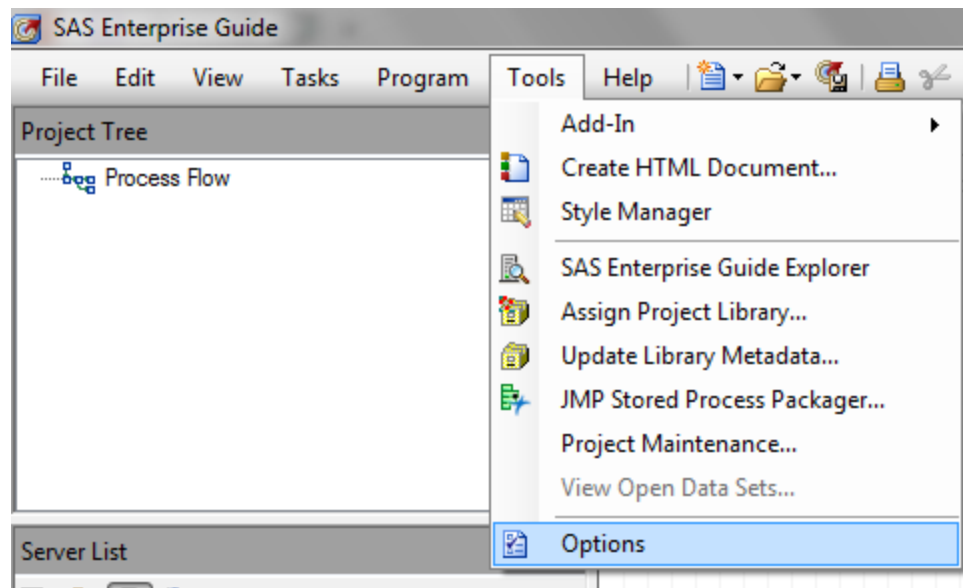
ABSTRACT

No need to fret, Base SAS® programmers. Converting to SAS® Enterprise Guide® is a breeze, and it provides so many advantages. Coding remote connections to SAS® servers is a thing of the past. Generate WYSIWYG prompts to increase the usage of the SAS code and to create reports and SAS® Stored Processes to share easily with people who don't use SAS Enterprise Guide. The first and most important thing, however, is to change the default options and preferences to tame SAS Enterprise Guide, making it behave similar to your Base SAS ways. I cover all of these topics and provide demos along the way.

WHY ENTERPRISE GUIDE

If you consider the immediate benefits you can receive, making the initial switch is more likely. First, the point-and-click wizards that are available reduce the need to memorize or search through documentation for obscure options such as creating three-dimensional bar charts or adding table output to your SUMMARY procedure results. Second, in a client/server environment the RSUBMIT and FTP technologies are no longer required as you can save and run code on the server through Enterprise Guide. Finally, Enterprise Guide can be used instead of SAS® Management Console to directly manage your metadata via the Update Library tool and create Stored Processes through a wizard. SAS administrators appreciate this last one as it allows SAS developers to complete tasks without an administrator's help.

MODIFY YOUR OPTIONS

After programming in Base SAS® for years, switching to SAS Enterprise Guide can be a huge paradigm shift. Fortunately, modifying the options of SAS Enterprise Guide to force it to behave more like Base SAS will eliminate your initial frustrations. Included are nine options that I recommend changing as soon as you install SAS Enterprise Guide. All options are accessed via the menu bar: **Tools** -> **Options**.
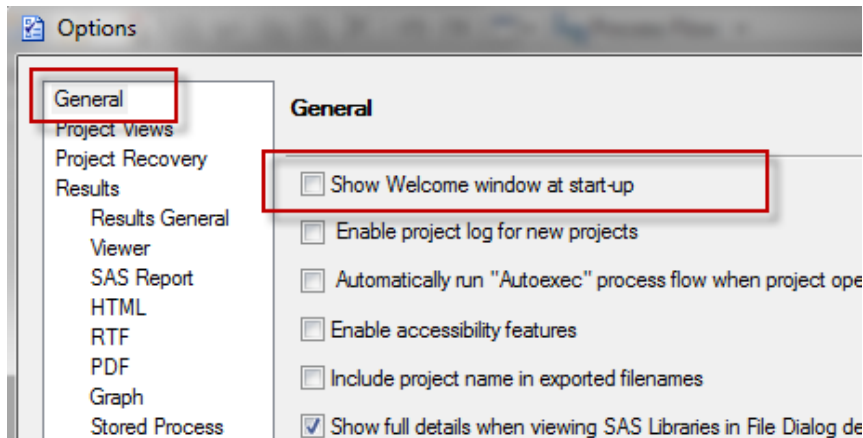

Display 1. Menu bar to open options

OPTION #1 - WELCOME SCREEN

The initial welcome screen provides you with the ability to quickly open a prior saved project or create a new code node. However, for seasoned Base SAS programmers we would prefer to open programs via the menu bar.

Turn off the initial welcome screen by either checking the option '**Don't show this window again**' on the welcome screen itself or removing the option from the General settings screen as seen below.
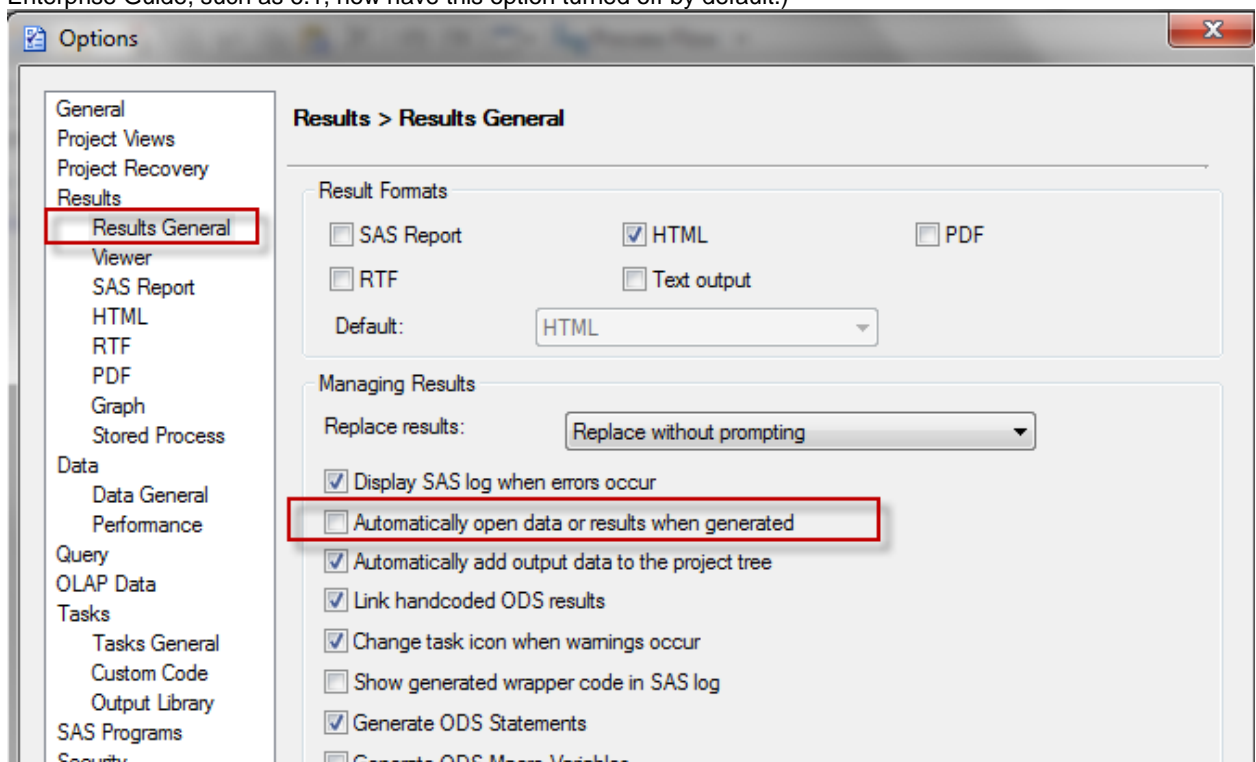
Display 2. Disable the Welcome Window

OPTION #2 – MANAGING OUTPUTS AND LOG

When I started programming in SAS, I was a statistics student and my professor was adamant about checking the logs before reviewing any results. He made it a point that just because results and reports generate output doesn't necessarily mean that the program was successful. It is always best to do a review to make sure the data tables were refreshed in the run, that all the observations that you expect were included in the process, and that the macros resolved. In SAS Enterprise Guide, the default is to jump you right to the results after running a program, so changing that is critical to keeping the professor happy.
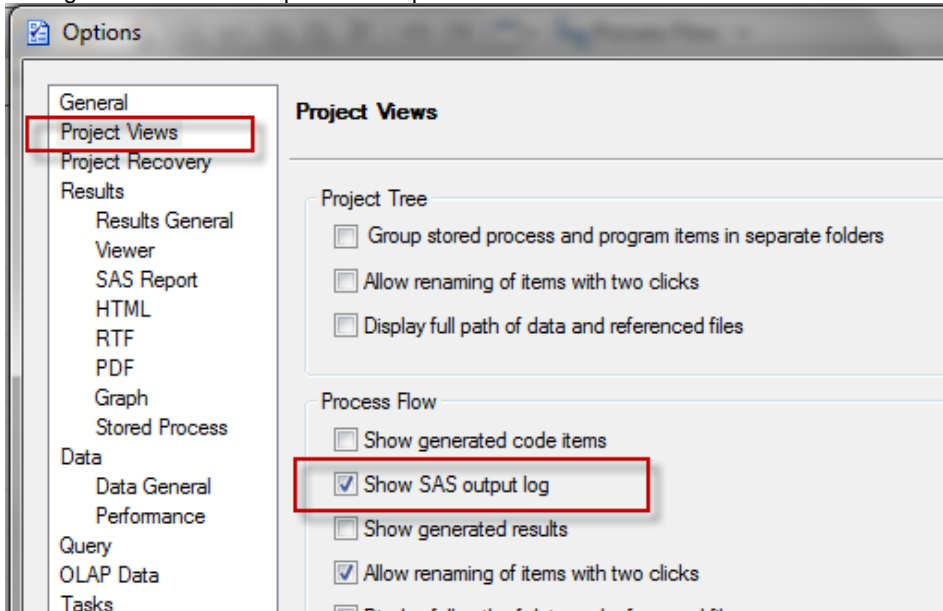
There are several steps to this modification.

> a. In the **Results General** area of the Project View, uncheck the option '**Automatically open data or results when generated**'. This ensures that I don't look at the output first. (Note that more recent versions of SAS Enterprise Guide, such as 6.1, now have this option turned off by default.)
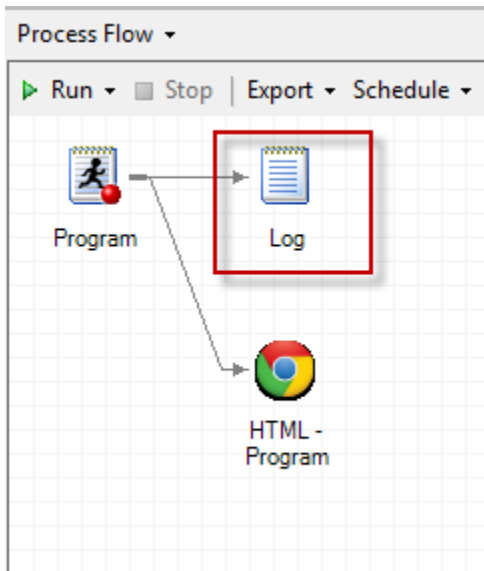

Display 3. Do not open results automatically

b. In the Options window, move to the **Project Views** area, and select '**Show SAS output log**'. This will allow the log to be clicked and opened from process flow screen.
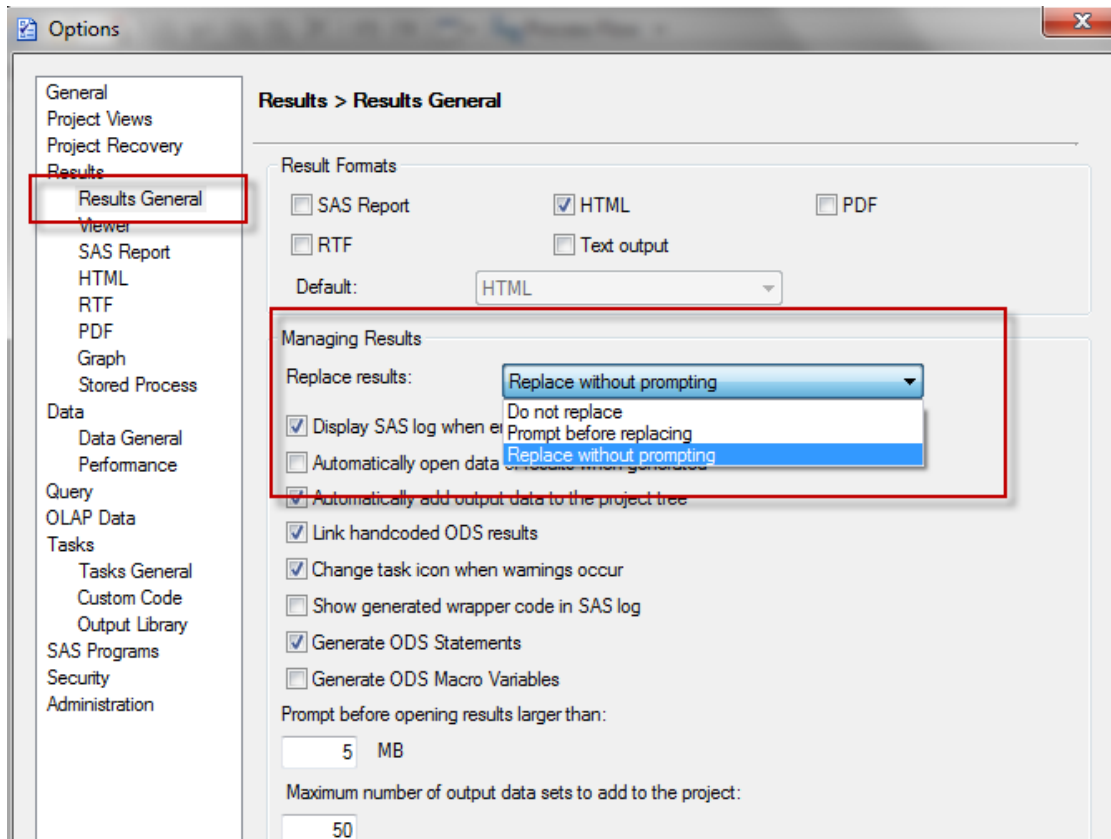

Display 4. Output log

Included is an example of the process flow view, which allows quick access to the logs for a step in the flow.

Display 5. Open log from process flow
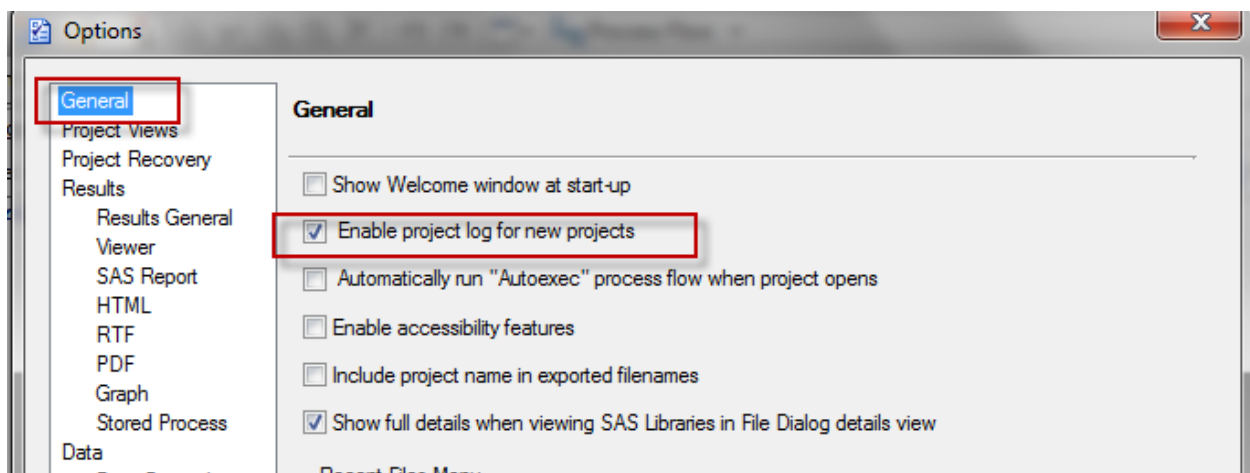
OPTION #3 – REPLACE RESULTS

In Base SAS, when you click '**Submit**' the job runs, period. In SAS Enterprise Guide, you are prompted with a message 'Do you want to replace the results from the prior run?' This might be useful if you are testing a couple of different strings of code, but for hardcore SAS programmers this is seen as just another barrier to completing the programming task at hand. Change this behavior by selecting '**Replace without prompting**' in the **Results General** area of the Options GUI.

Display 6. Replace without prompting

A second step to this is to enable project logging. As program node logs are cleared and refreshed when the process is run, the project log will maintain everything. Just as programmers are familiar with the logs operating in Base SAS.

In the **General** area, select the option to generate a project log for all new projects. This will store the full length of the logs.

Display 7. Enable project logging

All logs will then be stored in the Project Log (open via the menu **View** -> **Project Log**). Included is an example of running two different procedures in the same program node. The project log has both logs, but the program log will have only the most recent run.

```
Project Log ▾
Turn On  Turn Off  | ⬆ ⬇ | Clear Log  Export ▾  Send To ▾ | 🔲 Properties
⊞ Project Log turned on at 2/13/2014 10:58:16 AM
⊟ Log for "Program" run at 2/13/2014 10:58:37 AM on Local
   1          ;*';*";*/;quit;run;
   2          OPTIONS PAGENO=MIN;
   3          %_eg_hidenotesandsource;
  18
  19          proc print data=sashelp.shoes;
  20          run;

 NOTE: There were 395 observations read from the data set SASHELP.SHOES.
 NOTE: PROCEDURE PRINT used (Total process time):
       real time            0.11 seconds
       cpu time             0.10 seconds


  21
  22          %_eg_hidenotesandsource;
  34
  35
  36          QUIT; RUN;
  37
⊟ Log for "Program" run at 2/13/2014 10:59:41 AM on Local
   1          ;*';*";*/;quit;run;
   2          OPTIONS PAGENO=MIN;
   3          %_eg_hidenotesandsource;
  18
  19          proc freq data=sashelp.shoes; tables sales; run;

 NOTE: There were 395 observations read from the data set SASHELP.SHOES.
 NOTE: PROCEDURE FREQ used (Total process time):
       real time            0.44 seconds
       cpu time             0.14 seconds
```

Display 8. Project log

OPTION #4 – REMOVING GENERATED CODE FROM LOGS

While reviewing the log messages generated from SAS Enterprise Guide, you will find a significant chunk is wrapper code automatically created by the tool. A simple PROC PRINT can output 14 extra lines above the PROC within the log file.
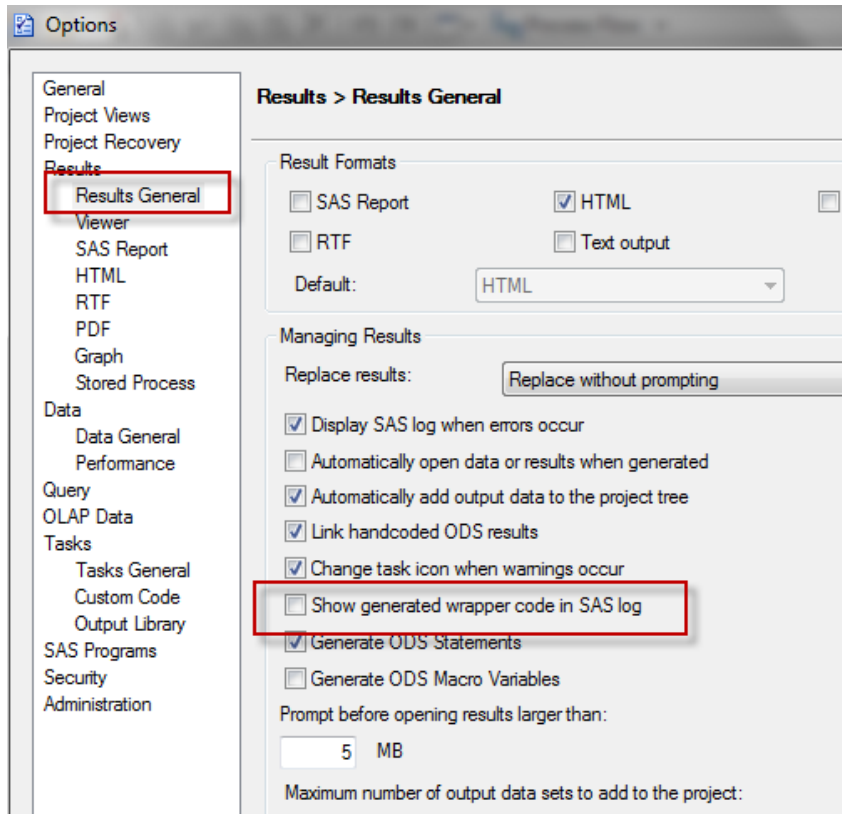
```
1          ;*';*";*/;quit;run;
2          OPTIONS PAGENO=MIN;
3          %LET _CLIENTTASKLABEL='Program';
4          %LET _CLIENTPROJECTPATH='';
5          %LET _CLIENTPROJECTNAME='';
6          %LET _SASPROGRAMFILE=;
7
8          ODS _ALL_ CLOSE;
9          OPTIONS DEV=ACTIVEX;
10         GOPTIONS XPIXELS=0 YPIXELS=0;
11         FILENAME EGHTML TEMP;
12         ODS HTML(ID=EGHTML) FILE=EGHTML ENCODING='utf-8' STYLE=sasweb
12       ! STYLESHEET=(URL="file:///C:/Program%20Files/SASHome/x86/SASEnterpriseGuide/4.3/Styles/s
12       ! asweb.css")
12       ! ATTRIBUTES=("CODEBASE"="http://www2.sas.com/codebase/graph/v92/sasgraph.exe#version=9,2
12       ! ") NOGTITLE NOGFOOTNOTE GPATH=&sasworklocation;
NOTE: Writing HTML(EGHTML) Body file: EGHTML
13
14         GOPTIONS ACCESSIBLE;
```

Output 1. Generated automatic output from SAS Enterprise Guide

Remove these lines from the log by unchecking the option '**Show generated wrapper code in SAS log**' from the **Results General** area.
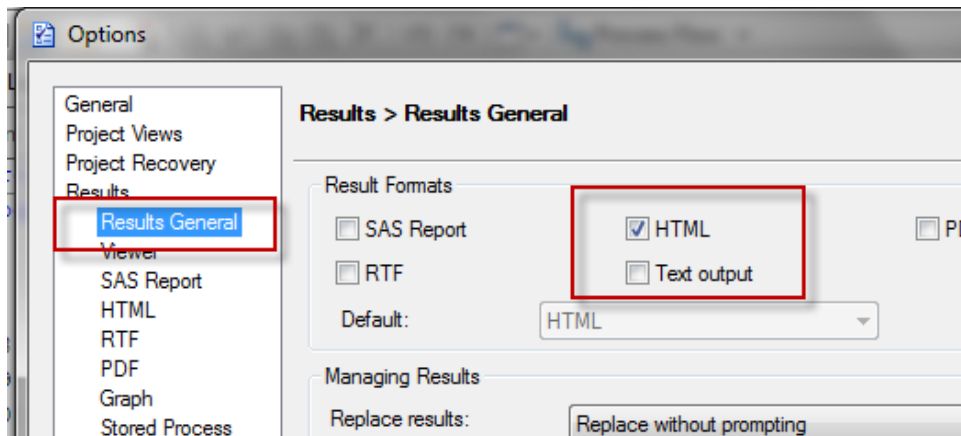
Display 9. Remove wrapper code from logs

This also reduces the size of the project log, enabling faster reviews of multiple code logs.
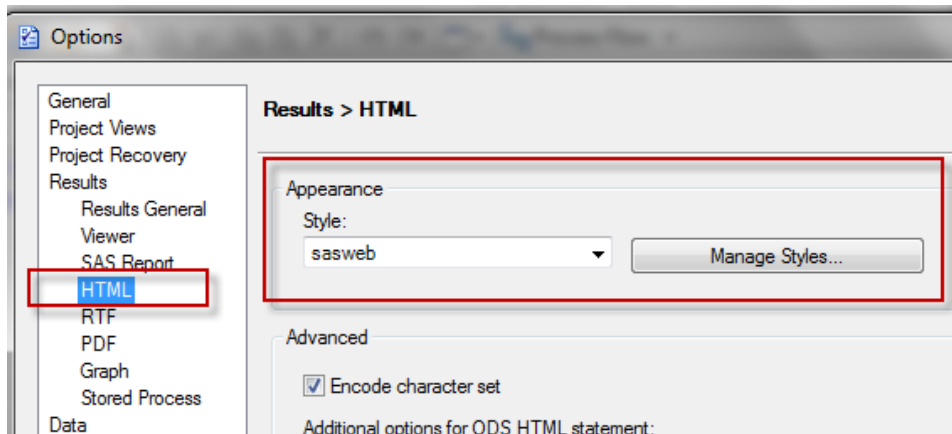
OPTION #5 – MODIFYING THE RESULT FORMATS

SAS Enterprise Guide by default produces all output in SAS Report format. Depending on how long you have been programming in Base SAS, you might prefer text or HTML format instead. Take your pick by modifying the Result Formats options in the Results General Options area.

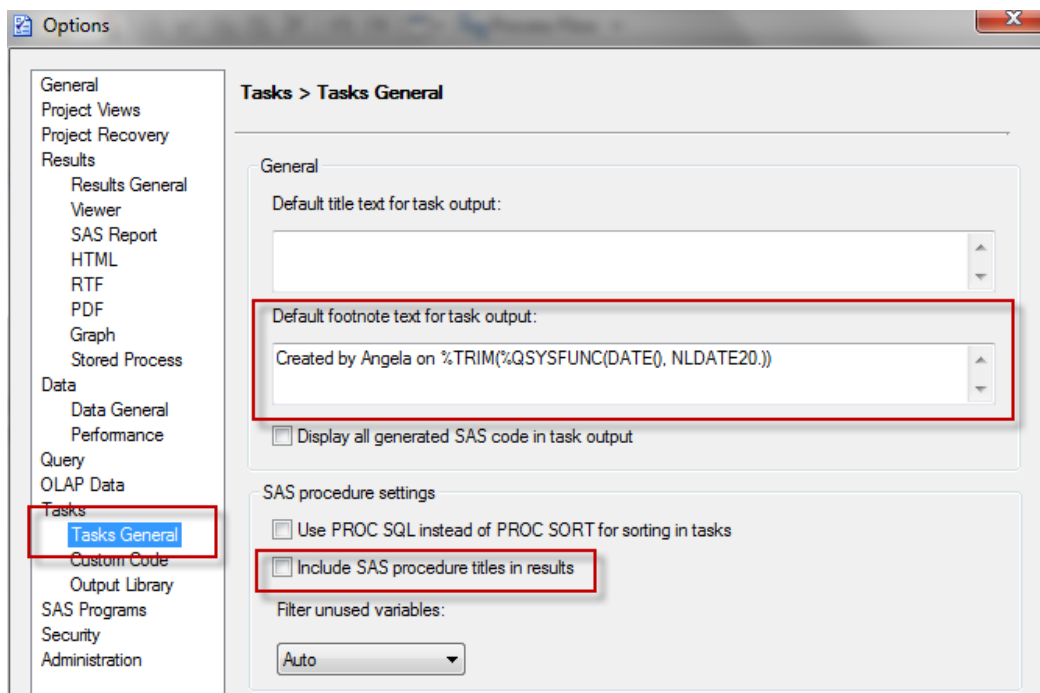**Display 10. Change result formats**

You can also modify the results default settings further by selecting the related output from the left menu bar and choosing other options. In the below example, I have selected the HTML output result and changed the default stylesheet to sasweb.

Display 11. Additional result output options

OPTION #6 – REMOVING OR CHANGING RESULT TITLES AND FOOTERS
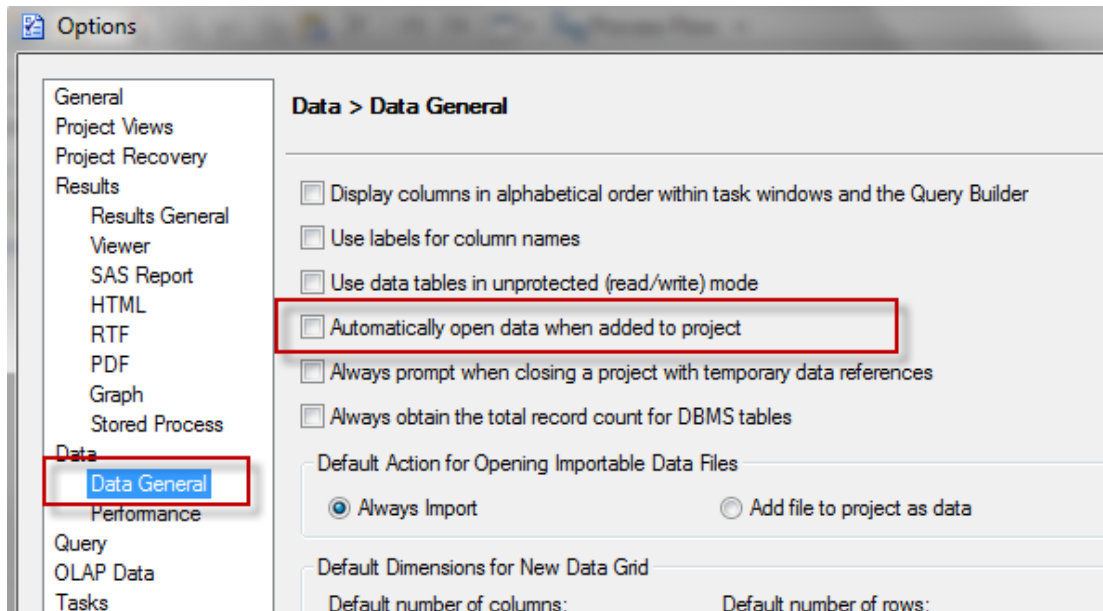
In Base SAS, the default title is 'The SAS System' and there are no footers. In Enterprise Guide, the procedure is included in the title and the footer contains text for the date. All of this can be modified using the **Tasks General** area of the Options window. You can add a default title, default footer, and choose to remove the SAS procedure title. Included is an example of my settings for results. Note that these can always be overridden by using the title or footnote statements within the program itself.

Display 12. Output result titles and footnotes

OPTION #7 – MANAGING PERFORMANCE

Unlike Base SAS, when you use data in Enterprise Guide it appears to add it to the project. By default, Enterprise Guide will also attempt to open the data table. If the table is significant in size, your Enterprise Guide session could experience a performance issue. Turn this off by changing the '**Automatically open data when added to the project**' option in the **Data General** area. (Note that more recent versions of SAS Enterprise Guide, such as 6.1, now have this option turned off by default.)
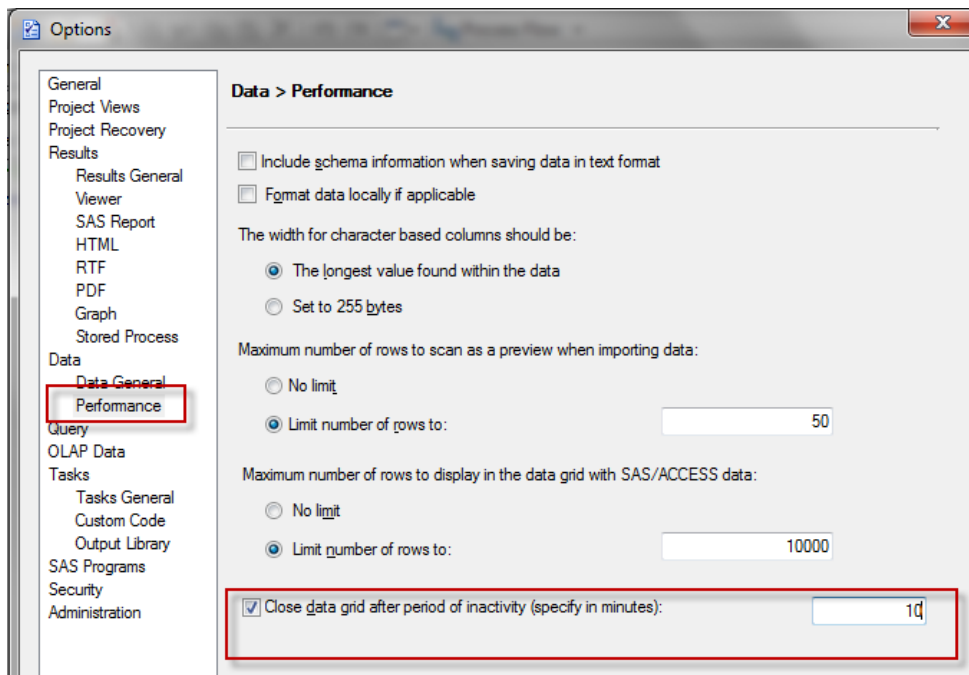
Display 13. Do not open data automatically

OPTION #8 – LOCKING DATA TABLES

The biggest complaint received from SAS programmers is about the fact that Enterprise Guide can lock the data table and keep it locked even as the users believe they have moved to a different area in the project. Other users will try to access the table and get messages stating that the process failed because the data table is in use.
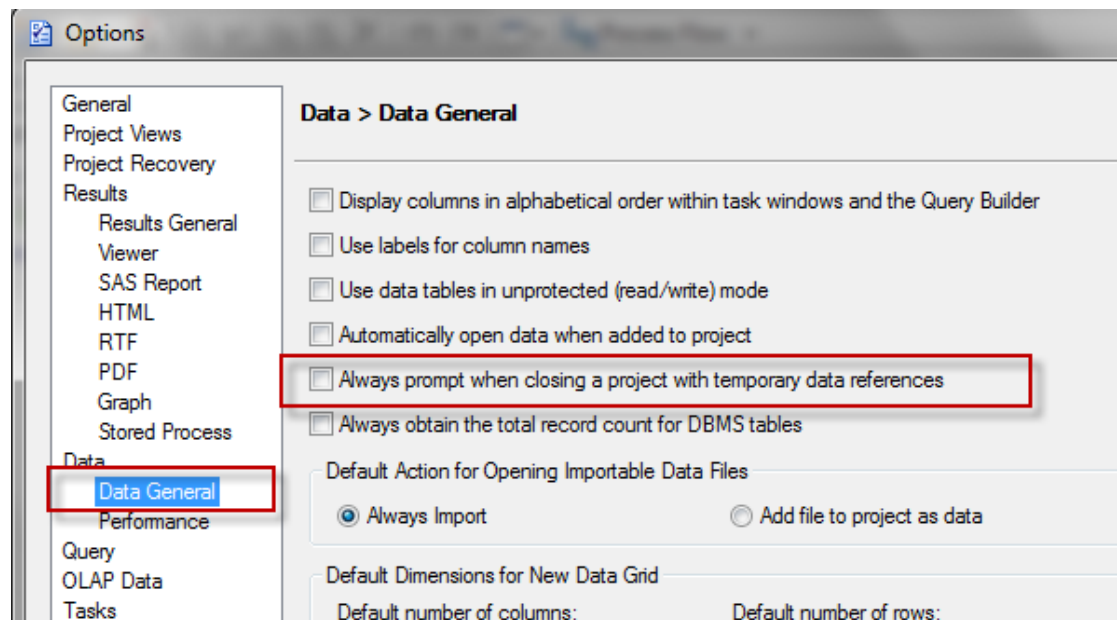
Select the option '**Close data grid after period of inactivity**' and enter in a number of minutes, such as 10. This will at least keep you from locking tables for other individuals. (Note that more recent versions of SAS Enterprise Guide, such as 6.1, now have this option turned on with a 30-minute timeout by default.)

Display 14. Close data grids after inactivity

OPTION #9 – DISABLE WARNING MESSAGES ON TOOL CLOSURE

As all seasoned programmers are aware, when you close Base SAS all of your data in the temporary library WORK is deleted. There is no recovery other than running your job again when you reopen the tool. We do not require a reminder about this; we have been programming for years. SAS Enterprise Guide will remind you unless you turn off the option '**Always prompt when closing a project with temporary data references**' in the **Data General** area.

Display 15. Remove prompt about temporary work data

REFERENCES

Seeno, Heather Y. "Top Ten Reasons to Switch to SAS® Enterprise Guide (Say Goodbye to PC SAS)." Proceedings of the NESUG 2008 Conference. Pittsburgh, PA. Available at http://www.nesug.org/proceedings/nesug08/ff/ff13.pdf

RECOMMENDED READING

The SAS Dummy Blog http://blogs.sas.com/content/sasdummy

CONTACT INFORMATION

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