OASUS Spring 2014 Questions and Answers

The following answers are provided to the benefit of the OASUS Users Group and are not meant to replace SAS Technical Support. Also, the Enterprise Guide project is provided as a companion to this document. The project is available on the OASUS web site (www.oasus.ca).

Question: Are there ways to automatically produce formatted Excel graphs and tables from a SAS program?

Yes, it is posible!

1. With the SAS Add-In for Ms-Office

The easiest way of producing graphs into Excel is using the SAS Add-In for Ms-Office. You simply have to select one of the many graph tasks and when it is run, the generated graph is displayed in an Excel sheet.

2. Using the HTML ODS destination

Excel can read html and render any graphics being referenced. Unfortunetaly, the SAS ODS Tagset ExcelXP creates *.xml output, and *.xml output cannot contain graphs.

```
ods html3 file='c:/temp/report.xls' gpath='c:/temp/samefolder';
proc print data=sashelp.class;
   run;
proc gplot data=sashelp.class;
   plot height*weight;
   run;
   quit;
ods html close;
```

3. Via VBA or DDE

This method lets Excel generate the graph without the help of SAS. This does tightly coupled your SAS program with Excel. However, it offers a lot of control over the graphs and tables being displayed by Excel. A good paper on the topic is:

References

Yes! SAS® ExcelXP WILL NOT Create a Microsoft Excel® Graph; But SAS Users Can Command Microsoft Excel to Automatically Create Graphs From SAS ExcelXP Output

SAS® Add-In 6.1 for Microsoft Office Getting Started in Microsoft Excel, Microsoft Word, and Microsoft PowerPoint

Most graphs generated by Excel can be done in SAS. Robert Allison's SAS/GRAPH web site provides many examples

Question: I am a SAS EG user exclusively. While EG is fantastic for analytics, I'm struggling with the reporting. Is there a way (outside of copy and pasting) to get report outputs (one-way frequencies, summary tables, etc.) into Excel nicely?

Depending on the particular situation, you have a choice between several approaches. Here is a partial list:

1) Use the SAS Add-In for Ms-Office

The SAS Add-In is meant for invoking SAS reports directly from Excel (or the other MS-Office products) and displaying the results directly into Excel. It fully integrates SAS with Excel!

2) Build report using the EG Reporting tool and then send to Excel

By using the Send To Excel, you do not leave EG but you still need to have the SAS Add-In installed on your machine.

3) Export EG reports to HTML

In EG you can export any report to an HTML file. Because Excel can read HTML, the results can be rendered in excel when save in HTML.

Question: How to fix damaged data due to out of memory?

A SAS file can be damaged for several reasons:

• A system failure occurs while a SAS data file or a catalog is being updated
• The device on which a SAS data file or an associated index resides is damaged.
• The disk that stores the SAS data or catalog becomes full before the file is completely written to disk.
• An I/O error occurs while a SAS data file or catalog is being written.

In the case of the out-of-memory situation, a SAS file could get damaged because some I/O operation(s) didn't complete properly.

SAS does provide a tool to restore damaged data files to a usable condition. This tool is invoked using the REPAIR statement in a PROC DATASET. It is important to note that the repair is not garanteed. As well, it is likely that some data would be lost even if the repair is successful. So it is critical to caefully review the resulting file.

```
proc datasets lib = sasuser;
repair myclass;
quit;
```

References

[REPAIR statement PROC DATASETS](#)

[Using the DATASETS Procedure Part II](#)

Question: I have variables/columns VAR.1 to VAR.X in the data set. The number of columns may change. I perform various operations on the data and define an array of x elements each time. Is there a way to dynamically define number of columns/variables available

Contrary to other languages, a DATA step array is not a data structure but rather a grouping of individual variables under a common name (the array name).
A DATA step array is mostly used to faciltate the programming of repetitive calculation on different variables. DATA step arrays are not dynamic in that the number of elements (one per referenced variable) must be known at compile-time and cannot be changed while the DATA step is running. There exists other arrays in SAS notably the PROC FCMP arrays and the SCL arrays. In both cases, these arrays are dynamic and their size can change at runtime.

For this specific question, when you do not know the number of columns in the input data set until the DATA step runs, you can still make do with the DATA step array. As usual in SAS, there are many techniques. Here is a short list from the simplest to the more complex to implement.

1. Use name range if the columns starts with a common prefix.

2. Using full variable list

3. Using Numbered range list

SAS Code

```sas
/* Create data set with distances in miles */
data distances;
      input distance1 distance2 distance3;
      datalines;
12        45        87
65        89        103
1987      762       7
;
run;

/* Example 1: Using numeric variable list */
data distances1;
      set distances;
      array distances[ * ] _numeric_;

      do i = 1 to dim(distances);
            distances[i] = distances[i] * 1.609344;
      end;
run;

/* Example 2: Using full variable list */
PROC SQL NOPRINT;
      SELECT name into :distance_vars  separated by ' '
            FROM SASHELP.VCOLUMN
                  WHERE name LIKE 'distance%' AND memname = 'DISTANCES'
                        ORDER BY name;
QUIT;

%put &distance_vars;

data distances2;
      set distances;
      array distances[ * ] &distance_vars;

      do i = 1 to dim(distances);
            distances[i] = distances[i] * 1.609344;
      end;
run;

/* Example 3:Using Numbered range list */
PROC SQL NOPRINT;
      SELECT count(*) into :num_distance_vars
            FROM SASHELP.VCOLUMN
                  WHERE name LIKE 'distance%' AND memname = 'DISTANCES';
QUIT;

%let num_distance_vars=%cmpres(&num_distance_vars);/* remove blanks */
```

```
data distances4;
    set distances;
    array distances[ * ] distance1-distance&num_distance_vars;

    do i = 1 to dim(distances);
        distances[i] = distances[i] * 1.609344;
    end;

run;
```

References

[ARRAY Statement](#)

[SAS Variable Lists](#)

[Arrays Made Easy: An Introduction to Arrays and Array Processing](#)

Question: If you use the same project over and over (example, monthly reporting) how can you create it so that it doesn't overwrite the previous month's data sets.

What you can do is parameterized your project with the use macro variables typically set with a prompt or as part of the autoexec Process Flow of the Processing month for example can be set automatically based on the current date.

As a safeguard, you can add some check to make sure that no data gets overwritten without a specific permission.

The rest of the project has to be built with this type of global parameter in mind. In the case of monthly reporting, no date should be hardcoded - it should be all be based on the parameter provided globally.

In a way parameterizing an EG project is not that different than parameterizing a regular SAS program; you simply have more tools at your disposal.

Question: Are there plans to allow viewing/editing SAS catalogs in EG? (maybe it has already been added to EG 5.1 or 6.1) other than the Catalog Explorer add-in

At the moment, there is no built-in catalog viewer neither in EG 5.1 nor in EG 6.1. However, the free custom task provided by SAS does a fine job. To install it, download the zip file found at http://support.sas.com/documentation/onlinedoc/guide/customtasks/samples/SAS.Tasks.Examples.CatalogExplorer.zip and follow the instructions in the README.txt file (in the archive) to make the task available for use.

The task will appear in the Tools menu under Tools->Add-Ins->SAS Catalog Explorer.

References

Viewing SAS catalogs from SAS Enterprise Guide

Question; Looking for information related to what SAS has in the way of user interface options? Currently not using EG. We use windows and unix

Lots of options now with the SAS Intelligence Platform. EG can be considered as the general-purpose interface whereas other interfaces are more specialized. Here is a partial list with a brief explanation of each interface:

- SAS Add-In for Ms-Office: Add-in that allows the user to invoke SAS from within Microsoft Office and display SAS output directly into an MS-Office document.
- SAS Studio: new interface for programmers that ressembles the Display Manager. It runs in a Web browser. It is also the interface for SAS U.
- IML Studio: provides a highly flexible programming environment in which you can run SAS/STAT or SAS/IML analyses and display the results with dynamically linked graphics and data tables.
- Forecast Studio: SAS Forecast Studio is the client component of the SAS Forecast Server. SAS Forecast Studio provides a graphical interface (based on Java) to the forecasting and time series analysis procedures contained in SAS High-Performance Forecasting and SAS/ETS software.
- SAS Management Console: SAS Management Console is a Java application that provides a single point of control for administering your SAS servers and for managing metadata objects that are used throughout the SAS Intelligence Platform.
- SAS Universal Viewer: enables you to view, sort, and filter SAS data sets and other simple text-based files. You cannot edit SAS data sets with the SAS Universal Viewer. You do not have to invoke SAS or install SAS on your computer in order to use the SAS Universal Viewer.
- SAS Simulation Studio: a graphical application that enables you to build, run, and analyze discrete event simulation models. Application areas include retail, customer service, health care, transportation, and many other industries. The graphical user interface of SAS Simulation Studio provides extensive modeling tools suitable for both novice and advanced simulation users.
- SAS JMP: JMP products complement – and are often deployed with – SAS solutions that provide server-based business intelligence. JMP software empowers its users by enabling interactive analytics on the desktop.
- SAS Enterprise Miner: provides a full graphical interface to streamline the data mining process in order to create highly accurate predictive and descriptive models based on analysis of vast amounts of data from across an enterprise.
- SAS BI Dashboard: enables users to use dashboards to monitor key performance indicators that convey how well an organization is performing. Dashboards can include graphics, text, colors, and hyperlinks. Dashboards are created, maintained, and viewed through an easy-to-use Web-based interface. All content is displayed in a role-based, secure, customizable, and extensible environment.
- SAS Data Integration Studio: provides a powerful visual design tool for building, implementing and managing data integration processes regardless of data sources, applications, or platforms. An easy-to-manage, multiple-user environment enables

collaboration on large enterprise projects with repeatable processes that are easily shared. The creation and management of data and metadata are improved with extensive impact analysis of potential changes made across all data integration processes.

- SAS Information Map Studio: provides a graphical user interface to create and manage SAS Information Maps, define how the items in an information map are presented so that they are most relevant to business user, run test queries and preview query results, and set various properties and permissions on an information map to control query generation, query execution, and data access.

References

[SAS® 9.4 Intelligence Platform Overview](#)