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VIEWS NEWS

Issue 10 – 2nd Quarter 2000

News, Hints, Tips, and information for UK SAS Users

The continual growth of VIEWS shows the demand for the sharing of SAS® software knowledge and experience. This year's European user group meeting (SEUGI) is in Dublin next month (see *Diary*). If you've given thought to attending in the past but never actually done so, now is a good time to reconsider.

If you particularly like the technical content of *VIEWS News* then you'll enjoy the papers in the Coders' Corner stream at SEUGI. It will contain a variety of short and long papers on a range of technical topics. Intersperse these with SAS papers on V8 of SAS software and your week will be worthwhile. See you there…

VIEWS' Books By Users℠ (BBU) events are always popular and Frank Dilorio's event earlier this year was testament to that. For those who couldn't make it, Frank has written an article for this edition of VIEWS News and provided a paper to start-off the new Resources section on the VIEWS web site.

Andrew Ratcliffe (Editor)

The Consultant

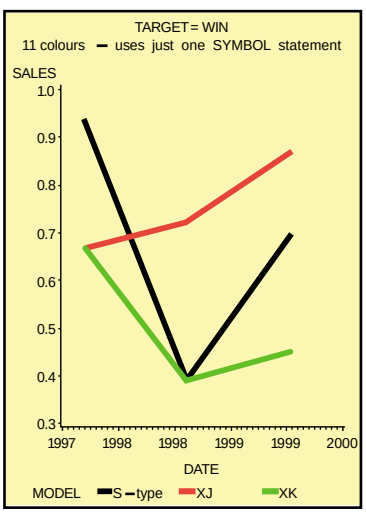
If you have a useful hint or tip, send it to the Editor and share it with the VIEWS membership.

WYSIWYG Graphs

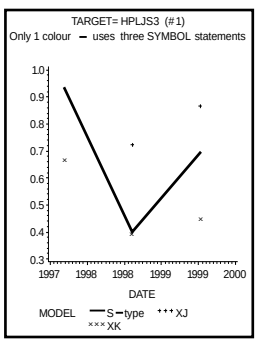
Q: Whenever I'm developing graphs in interactive SAS software on my UNIX workstation I always have to keep printing them to see what I'll finish-up with: the graphs shown on my screen are not the same when I print them out. For example, the screen's graph has a black background and the lines on my graph don't obey my symbol statement.

A: SAS software does permit WYSIWYG (what you see is what you get) printing of graphs. You need to use the GOPTIONS TARGETDEVICE= parameter to tell SAS software what device you're finally going to print to. Just add TARGETDEVICE= (or its abbreviation TARGET=) to one of your existing GOPTIONS statements, specifying your intended final output device (such as HPLJS3).

The default device for your UNIX workstation is XCOLOR; the default background colour for the XCOLOR device is black. Your HP laser printer has white paper (I presume!) and does not support any colour other than black. Your UNIX workstation (and the XCOLOR device) supports several colours. By using TARGET= you are able to tell SAS software that it should limit itself to the functionality of your intended output device, i.e. use a white background and only draw black lines.



Changing from a device with colours to a monochrome device causes your other problem related to the symbol statement. If you don't specify a COLOR option, SAS software will 'cycle' each symbol definition through each of the default colours associated with the DEVICE you are using (or each of the colours, if any, specified in your GOPTIONS statement). When it has used all of the colours available it will then use the next symbol statement, i.e. after SYMBOL1 it uses SYMBOL2.



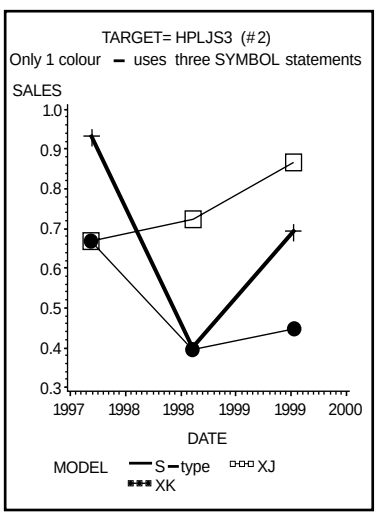
If you draw three plot lines with your multi-colour device, SAS/GRAPH® software will use the SYMBOL1 definition with three different colours. If you use a monochrome device, SAS/GRAPH software will use SYMBOL1, SYMBOL2, and SYMBOL3. If you haven't defined SYMBOL2 or SYMBOL3 then it will use the default settings. The following code and output shows the effect.

```
data demo;
  attrib model length=$6
         date  format=year. ;
  do date='1jan98'd, '1jan99'd, '1jan2000'd;
    do model='XJ', 'XK', 'S-type';
      sales = ranuni(0); OUTPUT;
    end;
  end;
run;

goptions reset=all;

symbol1 i=join w=18;

title1 'TARGET=multi-colour;
title2 '11 colours - uses just one SYMBOL statement';
proc gplot data=demo;
  plot sales*date=model;
run; quit;

goptions target=hpljs3;
title 'TARGET=monochrome (#1)';
title2 'Only 1 colour - uses three SYMBOL statements';
proc gplot data=demo;
  plot sales*date=model;
run; quit;

goptions target=hpljs3;

symbol1 i=join v=plus  f=, h=4;
symbol2 i=join v=square f=, h=4;
symbol3 i=join v=dot f=, h=4;

title 'TARGET=monochrome (#2)';
title2 'Only 1 colour - uses three SYMBOL statements';
proc gplot data=demo;
  plot sales*date=model;
run; quit;
```

Andrew Ratcliffe (Editor)

(Yet Another!) Observation-Counting Macro

A common requirement of even basic utility and report-writing macros is determining the number of observations in a SAS data set. One approach is to use SAS software's dictionary tables to determine both the number of observations and the existence of the data set. If we looked only at the TABLES table variable NOBS, a zero value could mean either no



observations in a valid/present data set or that the data set doesn't exist. A robust macro would distinguish between these possibilities. The macro developed for this article returns a value of –1 if the data set does not exist, or 0 or greater if the data set exists. The core functionality is shown in the following code fragment.

```
%let wh = where libname = "&libname"  &
                memname = "&memname"  &
                memtype = "DATA" ;

proc sql noprint;
select nobs into :&count from dictionary.tables &wh;
select count(nobs) into :dataok from dictionary.tables &wh;
quit;

* If no members, change the 'no observations' 0 value of COUNT
  to the 'no tables/datasets' value of COUNT. ;
%if &dataok = 0 %then %let &count = -1;
```

The complete paper is located on the VIEWS website in the new Resources section. It contains the complete macro to count observations and shows how it could be embedded in a simple reporting application.

Frank Dilorio

All back issues of *VIEWS NEWS* are available from the VIEWS web site (see *Contacts*). The latest issue often appears a couple of weeks before the postal copy arrives.

Which Graphics Device?

Q: When I'm developing graphs I need to tell SAS software what graphics device (goptions device=???) to use. How do I know what devices are available to choose from?

A: All of the SAS graphics devices are in the SASHELP.DEVICES catalog. To see their descriptions, take a look at the catalog (enter "catalog sashelp.devices" from the interactive SAS command line); or alternatively submit "proc gdevice; run;." If you want a printable listing, submit "proc gdevice nofs; list _all_; quit;" and you'll get a list in your output window or file.

Andrew Ratcliffe

Did You Know?

If you have a useful hint or tip, please send it to the Editor and share it with the VIEWS membership.

Allocating FILEREFs and LIBNAMEs in CONFIG.SAS

When setting-up a SAS software development environment, or a packaged application, the CONFIG.SAS file can easily be overlooked as a central point to permit customisation. In particular, the -SET system option is often under-utilised.

You can use -SET to set the value of a SAS environment variable. You can query the value from a SAS software program using the SYSGET function.

In addition, if you set the value of an environment variable to a filename or a directory then SAS software will automatically allocate a FILENAME or LIBNAME on demand in your programs. For example, the following excerpt from a CONFIG.SAS file permits usage of the SYSTEM libref and METADATA fileref without pre-allocating them.

```
-set system   d:\apps\winner\sas\system
-set metadata d:\data\ascii\winner\metadata
```

To see this work, add the two lines to your CONFIG.SAS file, launch a SAS session, then issue the DIR SYSTEM and FSLIST METADATA commands to list your allocated libref and fileref. The library and file don't get allocated until specifically requested, so if you invoke the LIB window before issuing DIR SYSTEM you won't find the SYSTEM library in the list.

Some additional features are not implemented equally across all platforms. For instance, on the Windows platform you can define one value in terms of another using the exclamation mark for the reference. See the following example for a good use of this feature. The SYSTEM and FORMATS librefs would both be allocated accordingly.

```
-set approot  d:\apps\winner\sas
-set system   !approot\system
-set formats  !approot\formats
```

This additional feature is not implemented on UNIX. And when using the basic feature on UNIX remember that the environment variable names are case-sensitive.

Of course you needn't bother doing any of this in CONFIG.SAS, it can all be done in AUTOEXEC.SAS. It depends upon your needs and preferences

Andrew Ratcliffe

Formats, Options, and Functions

The **BESTw**. format is the default format for writing numeric values. SAS software chooses the format providing the most information about the value given the available field width.

The **MSGLEVEL**= system option controls the level of information written to the SAS log. With MSGLEVEL=I the system writes a note to the SAS log whenever an index is used to optimise a statement; and writes a warning whenever a MERGE statement would cause variables to be overwritten.

CALL LABEL(v1,v2) assigns the label of the variable specified as v1 to the character variable specified as v2. Also see the VARLABEL() function.

News

VIEWS Membership

Just in case you're not fully aware of what VIEWS is, let me briefly explain. VIEWS is a not-for-profit organisation run independently of SAS by a group of enthusiastic volunteers. Membership is free - just send your contact details to any of the committee members listed in the *Contacts* section.

Our aims and objectives are listed on our web pages. We focus on the technical features of SAS software. If you'd like to use SAS software more effectively then VIEWS is for you.

VIEWS' 1,200+ members receive quarterly copies of VIEWS News plus information about future VIEWS events. We don't share our membership list with any other organisations, so you won't get any unsolicited mail.

XML Technology

Tekoa Technology from Zurich Biostatistics, Inc. is an architecture that uses XML to tightly integrate SAS software with commercial off-the-shelf (COTS) publishing software. SAS software and the COTS publishing software talk to each other via XML.

Tekoa Technology was developed specifically for statistical tables in regulatory submissions, but it is useful wherever results from SAS software

```
/*********************************************************/
/*** Author: Charles Patridge                          ***/
/*** Example of using Nested Formats within a Format   ***/
/***                                                   ***/
/*** Documentation in Tech Report P-222, page 216-217 ***/
/*********************************************************/

proc format;
  value $other
    other = 'Undefined';
  value $maybe
    0 = 'Maybe Female'
    1 = 'Maybe Male'
    other = [$other.];
  value $gender
    'F'  = 'Female'
    'M'  = 'Male'
    other = [$maybe.];
run;

data test;
  length gender $ 1;
  infile cards ;
  input gender;
  gender=upcase(gender);

genlabel=put(gender,$gender.);
  cards;
 F
 M
 0
 1
 ?
;;;
run;

proc print; run;
```

OBS	GENDER	GENLABEL
1	F	Female
2	M	Male
3	0	Maybe Female
4	1	Maybe Male
5	?	Undefined

```
/*** end of Tip ***/
```

will appear in report-quality documents.

Articles describing Tekoa Technology in depth are available for downloading at the "Presentations and Publications" page of the ZBI web site (see *Contacts*).

Observations Updates

Do you remember the quarterly SAS publication named Observations? It used to consist of in-depth technical articles of SAS software usage and I used to look-forward to it dropping through my letterbox. Sadly, it is no longer published in printed form. For the last couple of years it has only been available as individual articles from the SAS web site. It has a "home page" at **service/doc/periodicals/obs/observations.html**. New articles are published on an irregular basis.

To save you the inconvenience of making regular visits to the home page in order to see if a new article has been published, you can subscribe to UK Doc News. The SAS Publications Division e-mails a piece called UK Doc News at the beginning of each month. It informs you of all sorts of newly published documents, including Observations articles. To subscribe to this listserv follow these four steps:

1. Send an e-mail message to **listserv@vm.sas.com**
2. Leave the Subject line blank
3. Use this text as your message:
   SUBSCRIBE UKDOCNEWS-L <firstname lastname>
4. Send the message. You will receive an e-mail confirmation and instructions on how to unsubscribe should you choose.

Supplying your first and last names is optional. If you do supply them, do not type the chevrons in your message - they simply indicate that the names are optional.

Addressing the Skills Shortage

The SAS MSc Business Intelligence course was launched at Sheffield Hallam University (SHU) in mid-February. Developed by a partnership between SAS and SHU, the course is a unique combination of education and SAS training.

Students on the full-time one year course will spend approximately six months in Sheffield followed by six months with an organisation on an in-company project. More information on this course is available from the associated web site at **www.careermsc.com**, or see *Contacts*.

VIEWS News Questionnaire Results

73 of the last issue's questionnaires were returned to me. The results and my analysis are given in detail on the VIEWS web site. Thank you to all those who made the effort and a special thank you to those who took the time to add comments – I read them all very carefully.

The overall impression is that *VIEWS News* meets your needs and expectations pretty well – in terms of content, size, frequency, and delivery method. Its focus on punchy technical articles seems to be what the majority wants. However, a little more SAS software product information would seem to be welcome.

I was disappointed by the fact that over 50% of responders thought that the newsletter was useful but they were not willing to pay a bean for it!

The most popular authors were 'users' so we will concentrate harder on finding those authors. However, since less than 20% of responders offered to write an article, finding user authors will continue to be difficult. I have contacted all those who offered and I look forward to receiving the results. If you ticked the "willing to be an author" box but haven't yet heard from me then I apologise and ask that you contact me again.

Full details are on the VIEWS web site in the Analysis of *VIEWS Events* section.

In Brief

- Introduced with V6.12 of SAS software, the Menu Builder and the Class Browser can be useful application development tools. They are invoked with the MENUB and CLASSBROWSER commands respectively
- In February SAS introduced its new e-intelligence software, including a clickstream data analysis tool and technology that analyses data from e-commerce systems for customer profiling and segmentation. The new e-intelligence suite is the first set of SAS products specifically for analysing e-commerce data
- Have you used the LIKE operator in a WHERE clause? "Like" selects character data that match a pattern. An underscore finds one character; for example, edulvl like 'Ph_'. A percent sign finds any number of characters; for example, edulvl like 'Mas%'
- In March, SAS announced that it will release a Linux version of SAS software later this year. Visit **Linux/faq.htm** at the SAS web site for details (note the capital L when typing Linux).
- And… the "sounds like" operator selects words that have a similar spelling or sound, such as Johnson and Johnsson; for example, surname=*"Johnson"
- Worth a look: *The How-To Book for SAS/GRAPH Software (#55203)*, by Thomas Miron. Self-contained articles lead users through tasks that SAS/GRAPH users typically need to perform. This BBU book features many graphic examples and programs and helps users interpret the steps SAS software code follows to produce results.

Diary of Events

Are you organising an event that would be of interest to the VIEWS readership? Let us know, as we are interested in all non profit making events related to SAS software.

May 2000

7-10 **PharmaSUG Seattle**, Washington, USA
11 **DM SIG** provisional
28-31 **DiaMondSUG** San Francisco, California, USA

June

20-23 **SEUGI**, Dublin, Ireland

August

1 **VIEWS News** 11th edition

September

26 **VIEWS#6 conference** London

November

? **PharmaSIG** provisional

Views News is published quarterly by VIEWS - the UK's independent SAS user group. VIEWS is a non-profit organisation. Our Mission Statement and Rules can be viewed on our web site together with a list of current committee members.

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