



November 2004 will be a good month for SAS-related event attendees like myself. The SAS Forum UK was held in Birmingham on November 3-4 and the *VIEWS* Books-by-User Day will be in London on November 29. You can read a report and an advertisement, respectively, in this issue, as well as articles from our regular contributors on SAS/GRAPH, resolving coding errors, Viewtable documentation and SAS Certification.

If you would like to contribute an article, or discuss the possibility of doing so, please send an email to me at newsletter@views-uk.org. A list of possible subjects for your articles can be found on the *VIEWS* web site, and anyone is very welcome to add to that list by sending emails with your own questions to newsletter@views-uk.org.

Philip R Holland (Newsletter Editor)

*Membership of VIEWS is **free** and you can register for notification of all future VIEWS events by emailing us at membership@views-uk.org, making certain you include your name and postal address. If you would like to receive a free copy of the quarterly VIEWS News by email, please remember to also include your email address.*

Stop Press!

Books-by-User Day on 29 November 2004

The *VIEWS* Committee are pleased to announce the latest Books-by-User (BBU) event titled:

The Past, Present and Future of Statistical Graphics

Our presenter, Michael Friendly, is an associate professor and associate director of the Statistical Consulting Service at York University in Toronto, Ontario, Canada. Michael teaches graduate-level courses in multivariate data analysis and computer methods in the Department of Psychology, where he has been teaching the SAS System for over ten years. His research interests generally apply quantitative and computer methods to problems in cognitive psychology, including the cognitive aspects of extracting information from graphical displays. Michael is the author of the book: "Visualizing Categorical Data (VCD)", which will be referenced throughout the day. Attendees to the Books-by-User event will receive a copy as part of their delegate pack.

The Agenda:

1. Visions from the history of data visualization

- The Milestones Project
- The Golden Age of Statistical Graphics
- Problems of Statistical Historiography

2. Graphs and tables: Some principles for graphical displays

- Graphical failures and successes
- Graphical comparisons
- Corrgrams: rendering and variable order
- Effect ordering for data display

3. Graphical methods for categorical data

- Overview: Categorical Data and Graphics
- Methods for two-way frequency tables
- Mosaic displays and loglinear models for n-way tables

4. Wither thou goest? Visions of the future

- SAS graphics: The power to grow?
- Statistical graphics: Models for growth?
- Wider visions
- Conclusions

The Venue:

The Books-by-User event will be held on Monday 29th November 2004 at the Churchill Intercontinental Hotel, Portman Square, London.

How Much Does it Cost and How do I Book?

The cost for the BBU Event will be £190.00 plus VAT. This includes refreshments, a seated lunch and a copy of Michael Friendly's book "Visualizing Categorical Data (VCD)". Please download a booking form in Word from www.views-uk.org, or email info@amadeus.co.uk to request a form.

VIEWS Committee

News

Report on the SAS Forum UK 2004

The SAS Forum UK 2004 was held on 3-4 November 2004 at the Hilton Metropole Hotel in Birmingham. The conference was split into 10 Special Interest Groups (SIGs) on the Wednesday and 3 streams in the main conference on Thursday. I had a particular interest in the Business Intelligence & Reporting stream, as I was presenting a paper there, but there were also a number of papers in the Analytical Intelligence and Data Integration & Management streams that I wanted to see too. In-between the presentations I took the opportunity to talk to the experts in the Knowledge Zone. There was also the opportunity to take SAS Certification tests for free, which was accepted by around 70 of the conference delegates, including myself.

In the past the SAS Forum in the UK has been primarily a marketing tool for SAS UK. This year was different, as the papers and especially the SIGs had a more technical content, with more involvement of SAS users, rather than SAS customers. I felt that this was a conference aimed at SAS Professionals, and I'm now keen to see if the trend towards more technical content is continued at the SAS Forum UK 2005.

Philip R Holland (Newsletter Editor)

Did You Know?

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

Finding Help from SAS Help Files (Viewtable)

[SAS 8] Since I was unable to find documentation on Viewtable (see *VIEWS News* issue 27), I was helped by Dante diTommaso & Randy Herbison who pointed out that there was documentation available. It is not in the SAS OnlineDoc, but rather is in the help files installed with SAS, which end with .CHM (compiled HTML help). The CHM files are typically located in:

C:\Program Files\SAS Institute\SAS\V8\core\help

or

C:\Program Files\SAS\SAS 9.1\core\help

depending on where you have installed SAS and the version. Viewtable syntax, including the invocation arguments are covered here:

```
ms-its:C:\Program%20Files\SAS%20Institute\
SAS\V8\core\help\fsp.chm: /fsp.hlp/a000007097.htm
```

If you are unsure how to use that reference, you can just paste it into the address area of the Windows Explorer, as it doesn't seem to work if you do the same in the Internet Explorer. You can see the reference includes the path I installed SAS in, which was on my C-drive in the default location, so you will need to adjust this if your copy of the SAS system is installed in a different location.

If you want to do this all from SAS, then you can use the following program:

```
%LET systemroot = %SYSGET(systemroot);
%LET sasroot = %SYSGET(sasroot);
X "&SystemRoot\explorer.exe ms-its:&sasroot\
core\help\fsp.chm: /fsp.hlp/a000007097.htm";
```

Phil Mason, Wood Street Consultants

The New SAS Certification Exams

[SAS 8+9] Having taken the original paper-based SAS Certification examinations for SAS v6 in 1999, and then upgraded them to SAS v8 using the computer-based test in 2001, I've been able to watch the examination content evolve over time. My major criticism of the SAS v6 and v8 examinations was the emphasis on the testing of remembered syntax, rather than of coding ability. For example, the PROC REPORT options are numerous, but you should only need to be aware of their existence, not be able to recite them all with their uses verbatim.

On the first day of the SAS Forum UK I was persuaded to miss the SIGs by the opportunity to take one of the new SAS Certification tests for free, and took the SAS Certified Professional Advanced Programming exam instead to upgrade my V6 and V8 Advanced Programmer certificates. I'm pleased to announce that I passed it, along with those others who took the Advanced Programming exam on Wednesday and Thursday. The Base Programming exam only had a pass rate of about a third of the 70 who took it over the 2 days, but I'm sure that all of them learnt a lot about their SAS programming strengths and weaknesses.

These new SAS Certification examinations have many more questions that test your ability to read and understand SAS code. You can't avoid the inclusion of a few questions on specific data step and procedure options and statements, but the majority of the questions involved coding to solve a problem, or solving a problem in the code. Pass or fail you received a report on how you got on in the various sections of the test. The Base Programming included a wider variety of programming topics. The Advanced Programming examination included questions on PROC SQL, macros and advanced programming techniques, each of which was given a percentage figure. Now developed as a version-independent certificate that will expire in 3 years' time, they will evolve, but can't include more than a very small percentage of questions about version-specific features of the latest version of SAS software.

The offering for the first time of free SAS Certification tests at the SAS Forum UK 2004 proved to be a great success, as the organisers had to add a 4th session to accommodate all those wanting to take the examinations, totalling more than 70 over the 2 days. I believe that future SAS UK events will include free tests, and I would encourage everyone to do a little revision and give them a try. You never know, but you might surprise yourself!

Philip R Holland (Newsletter Editor)

Ask The Consultant

This part of VIEWS News is where you can get your technical questions answered. Send your questions to the Editor.

Unravelling Your SAS Knickers

Q: How do you correct typographical errors without having to restart your SAS session?

A: How many times have you found that your SAS Session suspends, implying a DATA step or PROC step is still running? I'm sure almost all SAS programmers experience it, after you run a program that had an unbalanced quote, missing semicolon, etc.

So your SAS session has its "knickers in a twist". Trying to find the correct combination of quote, semicolon, or RUN statement to return the session to its normal state.

Enterprise Guide 3 automatically inserts the following code into the programs it generates:

```
*';*"/;run;
```

Submitting the above returns the SAS session to its default state. Consider the following:

```
* Unbalanced quotes;
DATA work.sample;
  SET sashelp.class;
  LENGTH name2 $2;
  name2 = '::;
RUN;
*';*"/;RUN;
```

```

/* Open block comment
DATA work.sample;
  SET sashelp.class;
  bmi = weight / (height ** 2);
RUN;

*';*";*/*;RUN;

DATA _NULL_;
  PUT "NOTE: SAS Session OK.";
RUN;

```

Assigning the code to a shortcut key, or keyboard macro in the enhanced editor, can save restarting the SAS DMS.

Amadeus Software Consultancy Team.

The Advantages of Horizontal Bar Charts

Q: What are the advantages of horizontal bar charts?

A: [SAS 8] Vertical bar charts, and plots of lines or points, suffer from tick mark label length constraints along the horizontal axis. The common circumvention of tilted label text (or, worse, vertically stacking the characters in the labels) is not only inelegant, but also can be hard to read.

Horizontal bar charts, if exploiting the ability of PROC GCHART to list the measurement values in a listing at the right margin of the graph display area, totally eliminate this problem. There is no practical constraint on any bar label of reasonable length. Furthermore, for Microsoft Word or PDF documents that are designed with landscape orientation, or for Microsoft PowerPoint slides or the web (which are inherently landscape display media), even extraordinarily long bar labels can be accommodated.



```

PROC SUMMARY DATA = sashelp.shoes
  (KEEP = Region Subsidiary Sales);
WHERE INDEX(Region, 'Europe') NE 0;
CLASS Subsidiary;
VAR Sales;
OUTPUT OUT = work.Summary (DROP = _FREQ_
  RENAME = (Subsidiary = City))
  SUM = Sales;
FORMAT Sales COMMA10.;
LABEL Sales = 'Sales';
RUN;

```

```

DATA work.ViewsNov2004;
  DROP _TYPE_;
  SET work.Summary;
  IF _TYPE_ = 1 THEN OUTPUT;
  ELSE CALL SYMPUT('GrandTotal',
    TRIM(LEFT(PUT(Sales, COMMA10.))));
RUN;

GOPTIONS RESET = ALL;
GOPTIONS NOBORDER;
GOPTIONS DEVICE = PNG GSFNAME = anyname;
GOPTIONS VPOS = 20 YMAX = 3.0 IN
  VSIZE = 3.0 IN YPIXELS = 900;
GOPTIONS HPOS = 34 XMAX = 3.25 IN
  HSIZE = 3.25 IN XPIXELS = 975;
GOPTIONS HTEXT = 1.0 FTEXT = 'Verdana'
  CTEXT = 'CX000000';

TITLE1 H = 0.5 F = NONE ' ';
TITLE2 H = 1.0 F = 'Georgia' J = C C = CX000000
  'Shoe Sales in Europe by City';
TITLE3 H = 1.0 F = 'Georgia' J = C C = CX000000
  "Total Sales = &GrandTotal";
PATTERN1 V = solid C = CXCCCCC R = 99;
AXIS1 LABEL = NONE MAJOR = NONE MINOR = NONE
  STYLE = 0;
AXIS2 LABEL = NONE MAJOR = NONE MINOR = NONE
  STYLE = 0 VALUE = NONE;

FILENAME anyname
  "C:\RankedHorizontalBarChart.png";

PROC GCHART DATA = work.ViewsNov2004;
  HBAR City / SUMVAR = Sales
    SUMLABEL = 'Sales'
    WIDTH = 0.5
    SPACE = 0.5
    MAXIS = axis1
    RAXIS = axis2
    DESCENDING;

RUN;
QUIT;

FILENAME anyname CLEAR;

```

Pie charts, unless they are trivially simple (a few slices, and none of them very small), can be difficult, if not impossible, to label. They require labels for the slice names, for absolute values of the measurement of interest, and for percents of the whole. When you can actually fit all of the labels, a pie chart is the best solution to visually display shares of the whole. However, when slices are too many and/or too small, the horizontal bar chart is the only solution. You can display even shares that are vanishingly narrow, thus avoiding the dreaded category of "Other" - which invites questions (What is in "Other"?), rather than anticipating and answering any question, which should be the objective of any one-way communication instrument, such as a graphic or tabular report.

Shoe Sales in Europe by City
Total Sales = 7,267,940

		Sales	Percent
Heidelberg		967739	13.32
Lisbon		898345	12.36
Warsaw		786714	10.82
London		762009	10.48
Copenhagen		693116	9.54
Prague		636721	8.76
Paris		621877	8.56
Moscow		560976	7.72
Geneva		447208	6.15
Budapest		410529	5.65
Rome		282064	3.88
Madrid		200642	2.76

```
FILENAME anyname "C:\PieChartAlternative.png";
PROC GCHART DATA = work.ViewsNov2004;
  HBAR City / FREQ = Sales
    FREQ
    FREQLABEL = 'Sales'
    PERCENT
    PERCENTLABEL = 'Percent'
    WIDTH = 0.5
    SPACE = 0.5
    MAXIS = axis1
    RAXIS = axis2
    DESCENDING;
RUN;
QUIT;
FILENAME anyname CLEAR;
```

It is true that you might be able to overcome pie chart labelling problems with customization via the ANNOTATE facility, or by rearranging slice order out of desperation, rather than based on some design objective (such as my preference for ordering slices by descending or ascending size), but the horizontal bar chart can yield an acceptable result the first time every time - as long as the number of bars does not change. If you are building a production batch application or a dynamically generated graph for a SAS/IntrNet application, then any adhoc intervention to cope with input data that changes each time your program runs is infeasible. If the number of bars changes from run to run, then it is necessary to develop what I call a "software-intelligent" application, which dynamically adjusts the GOPTIONS for the graph display area to fit the number of bars to be displayed.

LeRoy Bessler, Assurant Health

Formats, Options, and Functions

This section is devoted to the description of useful, or unusual, SAS Formats, Options, and Functions.

Data surrounded by a variety of quotation marks can be difficult to process. The **\$QUOTEw.** informat will automatically remove matching quotation marks, either single or double, and saves an unquoted string. The corresponding **\$QUOTEw.** format adds double quotation marks when used to write character values.

[SAS 8] The **VALIDVARNAME=** system option controls the type of SAS variable names that can be created and processed during a SAS session. This can be particularly important while you are in transition between different versions of SAS software. **VALIDNAME=V7** is the default option, which allows up to 32 mixed-case alphanumeric characters, beginning with alphabetic characters or an underscore. **VALIDNAME=UPCASE** is the same as **V7**, except that the names are changed internally to upper-case. **VALIDNAME=V6** is the same as **UPCASE**, except that the names are limited to 8 alphanumeric characters. **VALIDNAME=ANY** extends **V7** by allowing any characters to appear as valid SAS variable names, including blanks, "=" and "*", but these must be contained in a '*varname*'*n* construct, and can only be used in certain SAS steps, e.g. Data step and PROC SQL. Note also that **VALIDNAME=V6** option is not available in SAS v9!

[SAS 8] The **SCAN()** function returns the *n*th word from the left-hand end of the input character variable, based on the specified delimiters. If *n* is negative, then it returns the *n*th word from the right-hand end of the input character variable. If less than *n* words can be extracted from the input variable, it returns a blank value. The related **SCANQ()** function, introduced in SAS v9, ignores delimiters that are enclosed in quotation marks.

In Brief

- Back issues of *VIEWS News* are available from the *VIEWS* web site.
- Phil Mason now has a daily SAS tips newsletter, which can be requested by going to www.woodstreet.org.uk and then clicking on Tips. Previous tips can also be found on the web site. This month's article from Phil was taken from a tips newsletters.
- SAS users looking for contracts, jobs, services and products may find what they are looking for on the Sponsored Links web page at www.hollandnumerics.com/careers.

Diary

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.

November 2004

23 **Changes and Enhancements to SAS Version 9**, Amadeus Software - FREE!

See the Amadeus Software web site for further details.

29 **IEWS BBU Event**, London

"**The Past, Present and Future of Statistical Graphics**", a statistics seminar day presented by Michael Friendly, a SAS Books-By-Users author. See the *IEWS* web site for the latest details.

December 2004

2 **Changes and Enhancements to SAS Version 9 for the Applied Statistician**, Amadeus Software - FREE!

See the Amadeus Software web site for further details.

April 2005

tba **IEWS 2005 Conference**, London

See the *IEWS* web site for the latest details.

10-13 **SUGI**, Philadelphia, USA

The SAS User Group International (SUGI) Conference is held each year and focuses on the technical aspects of SAS software.

June 2005

21-23 **SAS Forum International**, Lisbon, Portugal

The SAS Forum International is held each year and focuses on the more commercial aspects of SAS software.

All VIEWS event information will be posted and/or emailed to registered members of VIEWS, and will include an event application form. Please send your queries about any VIEWS events to event@views-uk.org, and don't forget to look at the web site for the latest news.

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