

# VIEWS

International SAS Programmer Community



## News, Hints, Tips and Information for SAS® Users

Issue 45, 1st Quarter 2009

The New Year begins with some old and new SAS events to the conference calendar. The next SAS Global Forum (SGF09) will be held in Washington DC (or should I say Maryland!) in March, along with the new PhUSE Single Day Events from March to June in Basel, Brussels, Frankfurt and London. You may be able to find me at SGF09 and in Brussels and Frankfurt, so, if you do see me, please come and tell me what you would like to see in future issues of *VIEWS News*. More information about all of these events, and others, can be found in the Diary section.

In this issue of *VIEWS News* I have some more articles from new and familiar sources. I would like to welcome our newest *VIEWS* Consultant Ian Whitlock with his improvement to the PRX code in issue 44, our regular contributor LeRoy Bessler gives us a SAS/GRAPH feature comparison of SAS 9.2 and 9.1.3, and there is also some topical advice on calculating mortgage payments from the Amadeus Software Consultancy Team. Along with our regular sections, including some new SAS Formats, Options, and Functions in SAS 9.2, I hope you will find at least some of them relevant to your use of SAS software.

If you would like to contribute an article, to re-visit and improve an existing article, or just discuss the possibility of doing so, please send an email to me at [newsletter@views-uk.org](mailto:newsletter@views-uk.org). A list of subject suggestions for your articles can be found on the *VIEWS* web site, and anyone is very welcome to add to that list by sending emails to [newsletter@views-uk.org](mailto:newsletter@views-uk.org) with your own questions.

**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](mailto:membership@views-uk.org), making certain you include your name and postal address. If you would like to receive email notification whenever a new issue of the free quarterly *VIEWS News* is published on the web site, please remember to also include your email address.

## Did You Know?

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

### SAS 9.2 versus 9.1.3 Case Study 1: 3D HBAR Chart As a Pie Chart Alternative

[SAS 9.2] What are the benefits of SAS 9.2 of SAS/GRAPH, besides high profile enhancements like Graph Template Language, Statistical Graphics, etc.? What features are still not there?

Below are visual results, using exactly the same HEIGHT and FONT specifications in each case. SAS 9.2 is better than 9.1.3, but SAS 9.2 GIF would have delivered an image identical to SAS 9.2 PNG.



Here is a survey of what I have reported in past work for SAS 8.2 and 9.1.3, most of it also published in back issues of *VIEWS News*. 3D pie charts always visually distort the relative size of shares of the whole, a cruel irony given the distinguishing purpose of a pie chart. Typical 3D bar charts involve needless complexity that do not aid or accelerate their interpretation for inference. Horizontal bar charts can accommodate longer bar labels than vertical bar charts. For vertical bar charts, tilted bar labels are a poor "solution" to the problem, and vertical bar labels are a needless impediment to communication.

**Font Changes.** The best font news, for me, is that fonts are drawn thicker in SAS 9.2. Unfortunately, the dreaded SIMULATE font (OK, maybe only "dreaded" by me) is still with us.

Bar Chart Changes. The length limit for bar labels in SAS 9.1.3 is 32 characters. The length limit in SAS 9.2 is 256 characters. This is more than enough for any business chart. My optimized 3D horizontal bar chart relies on removal of the 3D frame and 3D axis planes. In the example shown here, the old limit of 32 characters is not relevant, but I have had to create bar charts where it was a nuisance. This is a very valuable enhancement. In SAS 9.1.3, it is necessary to code NOPLANE on both axis statements. In SAS 9.2, NOPLANE can instead be coded directly on the HBAR3D statement. Described as an enhancement is correction of a former omission: in SAS 9.2 the COUTLINE now works for SHAPE=CYLINDER, not just the other 3D shapes as in SAS 9.1.3. Initially, I was needlessly excited by the availability in SAS 9.2 of the PCTSUM option for bar charts to display a column of percentages for the sum variable values. For a bar chart as pie chart alternative, I need to display both a column of sum variable values and a column of the percentages. As you will see in the code, it is still necessary to go through counter-intuitive jiggery-pokery to accomplish that. At least the old trick is simple and concise code that is hard to mess up.

Driver Changes. In SAS 9.1.3, the PNG driver created output with an awkward aspect ratio, too short for the width. Also, the PNG driver did not support the transparency GOPTION, which is very useful if you want your web page background to show through the unoccupied areas of a graph, rather than present the graph as an island on the web page. In SAS 9.2, the PNG default aspect ratio is 4:3, which is the same as that of GIF, and PNG now supports transparency, just as GIF always has. A claimed advantage for SAS 9.2 PNG is its ability to create a chart with up to over four billion distinct colours. In all my years of creating business charts since 1981, I have never been inhibited by the pre-9.1.3 limit of using up to any 255 colours from whatever was the available huge palette. The number 255 was built into SAS/GRAPH itself. The GIF graphic file format is inherently limited to 256 colours, regardless of the size of palette from which they are chosen. SAS/GRAPH developers can not change that limit. My SAS 9.2 testing of PNG vs GIF showed absolutely no difference in the conformation of fonts or graphic elements. Fortunately, SAS 9.2 includes ZPNG and ZGIF drivers, which allow you to preserve SAS 9.1.3 graph characteristics. In an example not shown here, I was forced to rely on ZGIF to avoid a SAS 9.2 problem. The SAS/GRAPH developers are now promoting PNG over GIF, and, whenever feasible, I will “go with the flow”. One example of such promotion is that, if you use ODS HTML and do not specify a graphic device driver, PNG is now the default, rather than GIF.

Below is the code used for the optimized 3D bar chart. Any differences between SAS 9.1.3 and 9.2 are commented:

```
GOPTIONS RESET = ALL;
GOPTIONS DEVICE = PNG; /* Use GIF for 9.1.3 */
GOPTIONS BORDER /* put the chart in a box */
  CBACK = CXFFFF00 /* background RGB yellow */
/* characteristics of text not explicitly
  specified in graph creation code: */
  HTEXT = 5 PCT FTEXT = 'Verdana'
  CTEXT = BLACK;
GOPTIONS GSFNAME = anyname;
FILENAME anyname "C:\VIEWS45\Chart.PNG";
/* file extension must match DEVICE */

TITLE1 FONT = NONE HEIGHT = 1 PCT ' ';
TITLE2 FONT = 'Verdana' HEIGHT = 5 PCT
  'Shoe Sales in Europe by City';
```

```
FOOTNOTE1 FONT = 'Verdana' HEIGHT = 5 PCT
  JUSTIFY = LEFT ' PNG 9.2';
FOOTNOTE2 FONT = NONE HEIGHT = 1 PCT ' ';
/* above footnotes are for demo only */

PATTERN1
  VALUE = solid REPEAT = 99
  COLOR = CX006600 /* medium dark RGB green */
;

/* Removing all axis paraphernalia: */
AXIS1 LABEL = NONE MAJOR = NONE MINOR = NONE
  STYLE = 0 VALUE = (JUSTIFY = RIGHT)
/* NOPLANE Uncomment this for 9.1.3 */;
AXIS2 LABEL = NONE MAJOR = NONE MINOR = NONE
  STYLE = 0 VALUE = NONE
  OFFSET = (1 PCT, 0 PCT)
/* NOPLANE Uncomment this for 9.1.3 */;

PROC GCHART DATA = sashelp.shoes
  (KEEP = Region Subsidiary Sales
  RENAME = (Subsidiary = City)
  WHERE = (INDEX(Region, 'Europe') NE 0)
  );
HBAR3D City /
  FREQ = Sales
  FREQ
  FREQ LABEL = 'Dollars'
  PERCENT
  PERCENT LABEL = 'Percent'
  MAXIS = axis1
  RAXIS = axis2
  DESCENDING
  NOFRAME
  NOPLANE /* only supported by 9.2 */
  SHAPE = CYLINDER
  COUTLINE = BLACK /* ignored by 9.1.3 */
;

RUN;
QUIT;

/* Still not available in 9.2:
  format control for FREQ & PERCENT */

FILENAME anyname CLEAR;
```

**NOTE:** If using COUTLINE and SHAPE=CYLINDER, always use BLACK. The 3D effect for SAS/GRAPH cylinders is achieved with horizontal stripes along the surface of the cylinder that progress from the specified PATTERN colour through incrementally darker shades all the way to black. The result of using a non-black outline would be, in my opinion, peculiar.

*LeRoy Bessler, Assurant Health*

## PRX 5: Matches and replays (re-visited)

[SAS 9] Here is a corrected and improved version of the first DATA step in the article “PRX 5: Matches and replays” in issue 44:

```
DATA test1;
  LENGTH instr $60;
  INPUT instr $ 1-60;
  rx = PRXPARSE("/cat|mog/");
  start = 1;
  len = 0 ;
  stop = LENGTH(instr);
```

```

DO UNTIL (p = 0);
  CALL PRXNEXT(rx, start, stop, instr,
              p, len);
  IF p > 0 THEN DO;
    sub = SUBSTR(instr, p, len);
    PUT "Matching "" sub +(-1)
        "" found at position " p;
  END;
  ELSE PUT "No more matches found";
END;
DATALINES;
Transmogrification of cattle demographics
;

```

There was no need for the TRIM() function, since LENGTH() automatically trims and PRXNEXT() uses the stop argument. The last argument of PRXNEXT() must be a variable, since it is a returned value.

Ian Whitlock

## Ask The Consultant

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

### How will the interest change affect your mortgage payment?

**Q:** How will my mortgage payments change with the interest changes?

**A:** The media is full of interest rate changes at the moment, leading to lots of questions – will it go down? What does this mean for my savings? How will it affect me?

One of the biggest questions people want the answer to is “How will this affect my monthly mortgage payment?”

Well, SAS has a little function which can help give you some indication of how the changes will affect you.

The MORT() function can be used in several ways. It always takes 4 numeric arguments, but one must be set to missing (.) for the function to work. The function will calculate and return the missing value.

So, say you have £150,000 mortgage, to pay over 20 years. Your annual interest rate was 2.5%, but has now dropped to 2%. You expect the payment to drop, but by how much? Also, what would happen should interest rates suddenly rise to, say, 10%?

If you run the following code you can get some idea of the impact:

```

DATA mort_int;
  INPUT borrowed payment interest period;
  calc = MORT(borrowed
              ,payment
              ,interest / 12
              ,period * 12
              );
  * assumes monthly payments;

```

```

DATALINES;
150000 . 0.025 20
150000 . 0.02 20
150000 . 0.1 20
;
RUN;

```

Note that payment has been set to missing. Also note that interest has been input as a decimal (so 2% is input as 0.02), but this is assumed to be spread over 12 monthly instalments. Likewise, the period of 20 years is also converted to months in the calculation.

The following output is produced:

Obs	borrowed	payment	interest	period	calc
1	150000	.	0.025	20	794.85
2	150000	.	0.020	20	758.83
3	150000	.	0.100	20	1447.53

So, your monthly payment should drop by about £35, if your interest rate falls from 2.5% to 2%.

However, if interest were to jump to 10%, you would need to find approximately £650 a month extra.

Please note that this will only give a rough guide to the impact, and not the exact payments you will expect to pay, as it is likely your mortgage agreement is much more complicated.

*Amadeus Consultancy Team*

## Formats, Options, and Functions

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

[SAS 9.2] The familiar DATEw. format now is able to display dates as “dd-mon-yyyy”, as well as the previously available “ddmonyy” and “ddmonyyyy”.

[SAS 9.2] There are a number of new system options relating to PDF security, all controlled by the PDFSECURITY= system options, controlling the editing and extraction of PDF content, including PDFCONTENT/NOPDFCONTENT.

[SAS 9.2] The COUNTW() function has been added to count words in a text value, in a similar way the COUNTC() function counted characters in a text value.

## In Brief

- Back issues of VIEWS News are available from the VIEWS web site, and also from the VIEWS News page at [www.sascommunity.org/wiki/VIEWS\\_News](http://www.sascommunity.org/wiki/VIEWS_News)
- More SAS hints and tips can be found on the SAS FAQ pages [www.hollandnumerics.com/sasfaq](http://www.hollandnumerics.com/sasfaq) and also on the Amadeus Software Tips pages at [www.amadeus.co.uk/TipsList.aspx?ST=1](http://www.amadeus.co.uk/TipsList.aspx?ST=1)
- Looking for a SAS-related job? Try the following web pages: [www.hollandnumerics.com/careers](http://www.hollandnumerics.com/careers) and [www.amadeus.co.uk/Careers.aspx](http://www.amadeus.co.uk/Careers.aspx)

- There are now 2 social networking groups for SAS users on Ning:
  - **SAS Professionals**, for SAS users in the UK, at [sasprofessionals.ning.com](http://sasprofessionals.ning.com).
  - **A Place for SAS Users**, an international group for SAS programmers, at [sascomm.ning.com](http://sascomm.ning.com).
- Phil Holland has also started a group page on Squidoo for other pages related to SAS, and would like to make it a central resource for SAS hints, tips, links and books at [www.squidoo.com/groups/SAS\\_users](http://www.squidoo.com/groups/SAS_users)
- Phil Mason has a SAS tips newsletter, which can be requested by going to [www.woodstreet.org.uk](http://www.woodstreet.org.uk) and then clicking on Tips. Previous tips can also be found on the web site.

## PhUSE News

### PhUSE 2009 Conference in Basel

Preparations for this year's PhUSE conference in Basel are ongoing at full speed and the committee is excited to offer yet another highly valuable package to the PhUSE Society members. Please find below details of the event which promises to become another milestone in the 5 years history of PhUSE.

#### Main Theme: Accelerating Clinical Development

When the steering committee last year started to discuss what could be the main thread of the next conference, the requirements for it were that it had to be inclusive for the whole audience, provocative enough to initiate some good discussions and of high relevance in our daily business.

With selecting "Accelerating Clinical Development" we believe we have ticked all of these boxes. No matter whether we are statistical programmers, system developers, process analysts or managers, we all can tell stories of the pros and cons when it comes to doing our job faster year after year.

Be it the latest software version, an adjusted validation method, a novel study design or a new algorithm to sort large datasets, they can only be sold as "improvements" to a process if they offer a potential time saving and thus eventually help bringing the product earlier to the market.

So we are looking forward to hearing your views, ideas and concerns around this topic. Let us know what you think!

#### Pre-Conference Courses

For the first time, the PhUSE Conference 2009 will offer pre-conference courses on the Sunday afternoon. In partnership with Amadeus, we will offer two courses at 3 hours each. The topics covered will be:

- SAS 9.2 Graph
- SAS 9.2 Enhancements

PhUSE will provide these courses in combination with the conference registration. You will find further information soon on our PhUSE website.

#### Room 4, your special interests discussion club

One of the main questions we asked ourselves for this year was how can we keep the conference content fresh and interesting for our members?

Profiting from the great venue this year, we decided to separate one room for a new type of stream following the format of the successful management stream, i.e. a more informal setup, which should enable discussion and debate between presenters, subject matter experts and the audience.

The streams we will hold in this room will be:

- Management Stream (Chaired by Roy Ward, Novartis)
- Open Source (Chaired by Dante diTommaso, Roche)
- Industry Standards, where do we go? (Chaired by Frans Wald, Boehringer Ingelheim)
- Accelerating Clinical Development, what influence has it on the triangle Cost – Quality – Time? (Chaired by Christian Müller, Roche)
- University Day (Chaired by Gary Hearfield, Amgen)

We are looking forward to lively discussions, exchange of views and opinions and as a potential result, a huge pot of ideas on how to move forward in the coming years.

If you'd like to actively participate as a presenter at one of the sessions, please contact the session chair, or the PhUSE back-office at [office@phuse.eu](mailto:office@phuse.eu).

#### Basel, Europe's Premier Site for Life Sciences

Basel shares a history of more than 250 years with the chemical and pharmaceutical industry. World wide known companies like Ciba, Geigy, Hoffmann-La Roche, Syngenta or Novartis were founded here.

With more than 35,000 employees, Basel is Europe's largest site for Life Sciences. Having large pharma headquarters, biotechs, CROs and a strong academic backbone, it provides a perfect venue for a PhUSE conference!

The Basel Congress Center is a highly experienced host and we, the PhUSE committee, are excited to be able to offer our Society Members this venue for our yearly event.

Swissôtel Le Plaza is one of the largest hotels in Basel. Elegant and modern, the hotel is connected to the Congress Centre Basel in the heart of the city. The hotel offers 238 tastefully furnished guest rooms. Le Plaza restaurant features modern Swiss cuisine, with a choice of seasonal specialities; while the stylish Plaza Bar offers a variety of drinks and snacks in a friendly atmosphere.

#### *Benjamin Szilagyi, PhUSE Conference Chair*

### PhUSE 2009 Single Day Events (SDE)

The PhUSE Society is delighted to announce that 4 "Single Day Events" have been scheduled in to the calendar to run in the first half of 2009:

- Basel, Switzerland - Roche ITC Centre - 18 March 2009
- Brussels, Belgium - UCB Centre - 2 April 2009
- Frankfurt, Germany - Mercure Hotel - 6 May 2009
- London, UK - tba - June 2009

The 2009 Single Day Events further demonstrate PhUSE's commitment to fulfilling the primary objective of promoting and

facilitating “Software Exchange” within the pharmaceutical industry across Europe.

The 2009 SDEs will focus specifically on the impact of CDISC on the Software Users’ day to day working activities but also will dedicate a significant proportion of the day to “traditional” PhUSE technical stream presentations. The SDEs will consist of formal presentations, discussion sessions and educational workshops.

The London Single Day Event, scheduled for June, will be a joint collaboration with the CDISC English Speaking User Group and will be primarily an SDTM workshop.

These events, which continue to be free to PhUSE Society members, are scheduled to run from 0930 to 1600hr and will include a buffet lunch. Agenda will be available on the website 4 weeks prior to each event.

If you are interested in contributing to one of these Single Day Events, then there are still some slots available, so please do not hesitate to contact any member of the SDE committee, or the local chair, or co-chair, directly.

We would like to thank Accovion, Roche and UCB for their support and for volunteering to host and/or facilitate these events.

We are very much looking forward to welcoming you to a SDE.

**Gary Hearfield & Olivier Leconte, PhUSE Committee**

## 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.*

### February 2009

25 **New and Enhanced Features of SAS 9.2**, Oxfordshire  
See the Amadeus Software web site [www.amadeus.co.uk](http://www.amadeus.co.uk) for further details.

### March 2009

18 **PhUSE Single Day Event**, Basel, Switzerland  
See the PhUSE web site [www.phuse.eu](http://www.phuse.eu) for further details.

22-25 **SAS Global Forum**, National Harbor, MD, USA  
The SAS Global Forum (SGF, formerly called SUGI) is held each year and focuses on the technical aspects of SAS software. See [www.sasglobalforum.org](http://www.sasglobalforum.org) for more details.

26-27 **Best Practices in SAS Statistical Programming in Regulatory Submission**, New Brunswick, NJ, USA

These courses are intended for anyone directly or indirectly responsible for the creation, content or validation of summary tables, data lists and graphs used to support research, drug or medical device efficacy and safety in a regulatory submission. See [tinyurl.com/5ayrmq](http://tinyurl.com/5ayrmq) for more details of the courses from Sunil Gupta.

### April 2009

2 **PhUSE Single Day Event**, Brussels, Belgium  
See the PhUSE web site [www.phuse.eu](http://www.phuse.eu) for further details.

### May 2009

6 **PhUSE Single Day Event**, Frankfurt, Germany  
See the PhUSE web site [www.phuse.eu](http://www.phuse.eu) for further details.

### June 2009

1 **SAS Programming Tips and Tricks**, Oxfordshire  
See the Amadeus Software web site [www.amadeus.co.uk](http://www.amadeus.co.uk) for further details.

25 **New and Enhanced Features of SAS 9.2**, Oxfordshire  
See the Amadeus Software web site [www.amadeus.co.uk](http://www.amadeus.co.uk) for further details.

tba **PhUSE Single Day Event**, London  
See the PhUSE web site [www.phuse.eu](http://www.phuse.eu) for further details.

### July 2009

22 **From Data to Knowledge: A Journey into SAS9**, Oxfordshire  
See the Amadeus Software web site [www.amadeus.co.uk](http://www.amadeus.co.uk) for further details.

### September 2009

24 **SAS Programming Tips and Tricks**, Oxfordshire  
See the Amadeus Software web site [www.amadeus.co.uk](http://www.amadeus.co.uk) for further details.

### October 2009

19-21 **PhUSE Conference**, Basel, Switzerland  
The Pharmaceutical Users Software Exchange (PhUSE) conference is the premier programming event for the pharmaceutical industry in Europe. See [www.phuse.eu](http://www.phuse.eu) for more details.

28 **New and Enhanced Features of SAS 9.2**, Oxfordshire  
See the Amadeus Software web site [www.amadeus.co.uk](http://www.amadeus.co.uk) for further details.

### November 2009

19 **From Data to Knowledge: A Journey into SAS9**, Oxfordshire  
See the Amadeus Software web site [www.amadeus.co.uk](http://www.amadeus.co.uk) for further details.

### December 2009

1 **SAS Programming Tips and Tricks**, Oxfordshire  
See the Amadeus Software web site [www.amadeus.co.uk](http://www.amadeus.co.uk) for further details.

*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](mailto:event@views-uk.org), and don't forget to look at the web site for the latest news.*

## Contacts

**Amadeus Software**      Email:  
**info@amadeus.co.uk**  
Tel: +44-(0)1993-878287  
Web: **www.amadeus.co.uk**

**LeRoy Bessler**      Email:  
Assurant Health      **le\_roy\_bessler@wi.rr.com**

**Ian Whitlock**      Email:  
**iw1sas@gmail.com**

**PhUSE**      Email:  
**office@phuse.eu**  
Web: **www.phuse.eu**

**SAS UK**      Tel: +44-(0)1628-486933  
Web: **www.sas.com/uk**

### **IEWS**

Web Site      Web: **www.views-uk.org**

Chairman      Email:  
**chair@views-uk.org**

Newsletter Editor      Email:  
**newsletter@views-uk.org**

Membership secretary      Email:  
**membership@views-uk.org**

***IEWS News** is published quarterly by IIEWS International SAS Programmer Community. IIEWS is a not-for-profit organisation. Our Mission Statement and Rules can be viewed on our web site together with a list of current committee members.*