DCSUG Newsletter
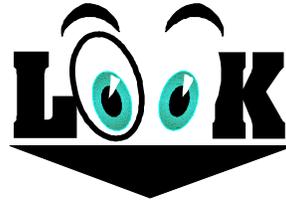
Third Quarter Meeting

When: Wednesday, September 23, 1998
Time: 8:30a.m. to noon
Place: Bureau of Labor Statistics
              Postal Square Building
              Room G440
              First Street North East
              Washington DC

LOOK

Date Change

Agenda:		
	8:30 - 9:00	Registration and refreshments
	9:00 - 9:15	Announcements
	9:15 - 10:15	Peter Knapp, U.S. Department of Commerce
		Debugging 101
	10:15 - 10:30	Break
	10:30 - 11:45	Paul Kent, SAS® Institute
		Your Base SAS® Dollars at Work
	11:45 - Noon	User-to User Questions and Answers
		Moderators - DCSUG officers

Visitors must use the visitor's entrance on First Street NE. Directions for those taking Metro: Take the Red Line to Union Station. Exit the station via the Amtrak exit, but do not go up to the train level. Instead, after going up to and out through the farecard gates, turn to the left where there is an exit to the street (First Street NE). Directly across from the exit are the employee and visitor's entrances to the building. After checking in with security, take the main elevators down to the G level. **BRING PICTURE ID!**

If you have special needs and are planning to attend this meeting, please contact any DCSUG officer no later than 9/16/98

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★ ★ ★ ★ ★ ★ ★ ★ ★ ★

☎☎☎☎☎☎☎   **If you are not currently a paid member of the DCSUG and are planning to attend the meeting, please Email Larry Altmayer at laltmaye@census.gov or call 301-457-3859 by Sept 17th and leave your name. Security at the Bureau of Labor Statistics is very tight and having your name on a list of possible attendees will make your entrance to the building easier.**   ☎☎☎☎☎☎☎

President's Message
Peter Knapp

I hope you will be able to attend the September meeting of the Washington, D.C. area SAS Users Group (DCSUG). The meeting is open to all interested SAS users (you do not have to be a member to attend). Paul Kent from the SAS Institute will present some new and useful features of the SAS System. I will be presenting a paper I will be giving in the Beginning Tutorials section of NESUG '98. You will find this meeting very informative and I am looking forward to meeting all of you. Please note that the date of the meeting has been changed from the previously announced date.

Your Base SAS® Dollars at Work

Paul Kent, SAS® Institute

Abstract

The BASE procedures group (IPD) at SAS Institute has been hard at work adding new and useful features to the heart of the SAS System. This talk describes this work and uses generic "business oriented" examples to place these features in a context that demonstrates their use in everyday programming. Covered are:

New SUMMARY/TABULATE options like percentiles, independent ordering of class variables, and the preloading of the class-variable space using formats and/or datasets

The ODS statement for producing output datasets and HTML output from all SAS procedures, High-Fidelity Printing and more ODS specific additions to PROC REPORT, PROC TABULATE and the SAS/Graph Procedures that enhance the web potential of these work-horse tools. Build trees of web pages with graphics, embedded links and cell-specific formatting (like font and color) easily, repeatedly from your current batch jobs.

Paul has been a SAS User for almost 20 years and has worked for SAS Institute far longer than he thought he'd hold any single job. Previous contributions to SAS Software include PROC SQL; the WHERE Clause and TCP/IP connectivity. Currently Paul manages the developers responsible for ODS and the majority of BASE SAS Procedures.

Debugging 101

Peter Knapp, U.S. Department of Commerce

Abstract

The aim of this paper is to show a beginning user of SAS how to debug SAS programs. New users often review their logs only for syntax errors that appear in red. They neglect to look for other types of coding errors. SAS identifies non-syntax errors in notes and warnings. Examples include notes that SAS has found uninitialized variables, generated missing values, or encountered more than one data set with repeats of BY values in a MERGE statement. In addition, once all coding errors are cleaned up, new users can find that their programs do not produce the desired results. To produce the desired results they need to uncover logic errors that are often more difficult to find than coding errors. By demonstrating various debugging techniques, I plan to show that with a little practice, one can master the art of debugging SAS programs.

Peter Knapp interned at the Bureau of Labor Statistics (BLS) where he learned the joys of SAS on an MVS mainframe environment. After contracting with BLS for three years, he joined the International Trade Administration (ITA) at the Commerce Department. For eight years Mr Knapp has helped administer international trade law at ITA. During this time he has guided SAS processing from a central mainframe shop to an end user PC based system. He is the current president of the DC SAS Users Group.

Questions and Answers

Moderated by DCSUG Officers

Bring your SAS programming or procedure questions to DCSUG and its members. During this open session, you can ask questions of and get answers from experienced SAS users. All are welcomed to participate

SAS Institute is offering a new discount for purchasing SAS manuals and Books by Users. Once a year (for DCSUG this year, at our September meeting), attendees in each local user group will have the opportunity to purchase books at a 15% discount. You must attend the meeting to qualify for the discount. You may complete your order form at the meeting or mail it in to SAS Institute within 2 weeks of the meeting. YOU MUST PAY BY CREDIT CARD or PURCHASE ORDER (no checks or cash please). We will have catalogs and order forms available at the meeting.

Win a free SAS manual!

We will be having a drawing and four persons who win will receive a free SAS manual of their choice.

Nominations for 1999 DCSUG Officers

Its that time of year again. We need to elect officers for DCSUG for next year and we need your help. Please nominate people to fill the following positions. Give your nominations to any current DCSUG officer or send them to DCSUG, P.O. Box 44670, Washington, DC 20026.

President	Secretary
Treasurer	SAS Liaison

Desktop Special Interest Group

by David Kiasi-Barnes

DCSUG's Desktop Special Interest Group will meet next in the Fall on Wednesday, October 28, 1998 at Westat Inc., 1650 Research Blvd.in Rockville, Md. at 7:30PM in the Human Resources meeting room, room #112C, on the first floor. The phone number in the meeting room is (301) 294-3973 if you are lost and need to contact us. Directions to the meeting follow.

At our last meeting, we had an excellent presentation by Nautilus systems on Data Mining, covering all aspects. We had many questions relating to SAS's Enterprise Data Miner, what statistical assumptions are used in Data Mining, and what Neural Networks are. Based on these, our next meeting will be presented by SAS Institute on SAS's Enterprise Data Miner product. This will not be a cursory review or a marketing oriented presentation. Rather, the guts of the product will be explained, e.g., what statistical routines are used, what assumptions are made, how the Neural network feature works in the product, and other statistician oriented topics. It will be keynoted by Ms. Ingela Welbrock, SAS Institute Account Executive and presented by Ms. Lauren Lieberman, SAS Institute Systems Engineer for the Analytics portion of SAS.

We will also have our annual elections for Chair and Vice-Chair. If you have any suggestions for future meeting topics, speakers, or alternate locations, or you'd like to be added to our group's mailing list please contact me at (301) 350-4752 or our Vice-Chair, Yesvy Gustasp at (301) 589-4530.

To get to Westat, take I-270 8 miles from the Capital Beltway to exit#6B - Route 28 (toward Darnestown). Once on 28, go past the traffic light at the Shell station and make a right on Research Blvd. The building will be on your left. You can park in any non-reserved space.

If using Metro, take the Red line towards Shady Grove and get off at the Rockville station. Take Ride-On bus #54 in the direction of Lakeforest Mall. The bus goes out on 28 past I-270 and the Shell station and then turns onto Research Blvd. Get off of the first stop on Research and cross the street. It takes 8-10 minutes from the Metro station to Westat.
The #54 bus runs every half hour.

DCSUG 1998 Steering Committee
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appalt@aol.com

VICE-CHAIR -- Yesvy Gustasp
(301) 589-4530   (202) 633-2668 (fax)
Yesvy.Gustasp@mix.cpcug.org

IF-THEN/ (ELSE) WITH ARRAYS

Paul Gorrell (Paul Gorrell@bls.gov)

Intuition, and SAS programming experience, suggest that the presence or absence of a following ELSE statement should not affect how an IF statement is evaluated. However, there is an apparent exception to this which may cause a data step to produce unintended results, especially if the output is 'blindly' fed to further processes within a complex program. Here's an example:

Consider the following sample data and data step.

```
data sample;
        input v1 v2 v3 v4;
datalines;
0 0 0 1
0 0 1 1
0 1 0 1
0 1 1 1
1 0 0 1
1 0 1 1
1 1 0 1
1 1 1 1
;
run;

data yes_else (drop=I);
        set sample;
        array v_ray{3} v1-v3;
        do I = 1 to 3;
                if v_ray{I}=v4
                        then eval=1;
                else eval=0;
        end;
run;
```

If the intent of the IF statement above is to identify those observations in which at least one of v1-v3 equals v4, then the wrong result is produced, as dataset yes_else below demonstrates. It appears as if v1 and v2 are simply being ignored by the data step. That is, 'eval' = 1 if and only if the value of v3 (the last variable in the array) equals the value of v4.

This unexpected outcome is due to the fact that each observation requires multiple comparisons as the DO loop iterates through the array, but only permits one result ('eval' = 0 or 1). With an explicit ELSE statement, each succeeding comparison returns a new value for 'eval'.

DATASET: yes_else

v1	v2	v3	v4	eval
0	0	0	1	0
0	0	1	1	1
0	1	0	1	0
0	1	1	1	1
1	0	0	1	0
1	0	1	1	1
1	1	0	1	0
1	1	1	1	1

Given this, the value of 'eval' in dataset yes_else reflects only the *final* comparison of the iteration, i.e. the value of v3. The prior comparisons of v1 with v4, and v2 with v4, do not affect the returned value of 'eval' in the dataset.

One way to correctly identify observations for which at least one of v1-v3 equals v4 is, perhaps surprisingly, to eliminate the ELSE statement, as in the following 'no_else' data step (Note that, outside the DO loop, missing 'eval' values are converted to zeros.).

```
data  no_else (drop=I);
        set sample;
        array v_ray{3} v1-v3;
        do I = 1 to 3;
                if v_ray{I}=v4
                        then eval=1;
        end;
        if eval = . then eval = 0;
run;
```

DATASET: no_else

v1	v2	v3	v4	eval
0	0	0	1	0
0	0	1	1	1
0	1	0	1	1
0	1	1	1	1
1	0	0	1	1
1	0	1	1	1
1	1	0	1	1
1	1	1	1	1

In dataset no_else, eval = 1 whenever at least one of v1-v3 equals v4. This is the correct, i.e. intended, result. Although somewhat counter-intuitive, eliminating the ELSE statement can serve as a useful option for comparisons within arrays. Now compare the data steps using a sum statement ("then eval+1;"), or '^=', instead of '='.

Use Socket in SAS

by Michael Yu

This short article shows sample codes of two SAS sessions running on different computers, via TCP's socket communication method, to talk to each other. One SAS session is acting as server, waiting for any client's request, processes it, and sends back results. The other SAS session is a client, passing work to the server. Try these programs on Unix and PC, you'll be surprised to see no signon required, and the server simply does anything the client requests. This sample can be expanded for a client written in C, or Perl, requesting remote host's SAS service, without running SAS on local machine.

Practical uses of socket communication method are two free Perl programs, available for download from DC SAS Users Group web site, enabling dynamic web publishing of SAS data – when used in conjunction with SAS Institute's free Web Publishing Tools (http://www.sas.com/rnd/web/publish.html). For questions, comments, and limited support of these free Perl programs, contact this author at vhyu@netkonnect.net.

```
/* Server code: Run this on Unix or PC */
%let portno= 4013; * Change per your site;
filename in_msg socket ":&portno" server; * For incoming message;

%let DIR= %sysfunc( pathname( work ));
filename ready "&DIR/a-ready.sas";

data _null_;
infile in_msg;
  file ready;

 input ;
   put _infile_;
run;

%inc ready;
run;

filename ready;
filename in_msg;

/* Client code: Run on a different machine than that of server's */
%let host= the-server-machine's-IP-address;
%let portno= 4013; * Same as the &portno specified in server code;
%let pgm_file= program-file-containing-SAS-code-for-the-server-to-
run;
filename remote socket "&host:&portno" ;

filename input "&pgm_file";

data _null_; * Sends work over to the server;
  file remote;
infile input end= EOF;

 input ;
   put _infile_;
run;

filename input;
filename remote;
```

```
/* Use a different port number to accept response from the server */
%let portno= %eval( &portno + 1 );
filename back_rst socket ":&portno" server;

data _null_; * Receives response from the server;
infile back_rst;
  file print;

 input ;
   put _infile_;
run;

filename back_rst;

/* program-file-containing-SAS-code-for-the-server-to-run */
/* This file is located on the client's machine */
/* It is sent by the client to be run on the server's machine */
%let cleint= the-client-machine's-IP-address;
%let ret_port= 4014; * the &portno specified in server code + 1;

/* Server sending results back to the requesting client */
filename remote2 socket "&client:&ret_port";

proc printto print= remote2;
run;

title1 "Print server machine's sasuser.fitness";
proc print data= sasuser.fitness;
run;

proc printto;
run;

filename remote2;
```
*Hsiwei Yu (Michael) works for Northrop Grumman Corporation, on site at Environmental Protection Agency in downtown D.C. Previously with Legent and SAS, Michael has been a devoted SAS programmer for over 10 years. His current assignment is to analyze EPA corporate data and implement user-friendly dynamic queries on the Web. Michael can be reached at **yu.michael@epa.gov(W), vhyu@netkonnect.net (H).***

CAREER OPPORTUNITIES AT WESTAT

Westat is an employee-owned company located in Rockville, MD. We currently are seeking systems professionals to lead and support systems applications and development for research projects in health, education, human services and other areas for both government agencies and private industry.

SAS Programmers and Analysts

You will support data collection, consolidation, and analysis tasks in SAS. One to 3 years of SAS data step programming required. Openings for SAS professionals with 4 to 8 years of experience to create SAS solutions for tabulations, analysis, and other tasks are also available.

Westat offers a competitive benefits package, including life and health insurance, an Employee Stock Ownership Plan (ESOP), and a 401k Plan. We provide tuition reimbursement and offer excellent growth opportunities. For immediate consideration, please send your resume and a brief cover to

Westat
Dept. 98-153
1650 Research Blvd.
Rockville, MD 20850
For a listing of other Westat opportunities, visit our Web site at www.westat.com
EOE

Calendar of Meetings and Events

This feature is meant to give users an idea of some of the activities of area users groups and special interest groups, as well as regional and international groups. If your group would like to be regularly included in this feature, please call Mike Rhoads or one of the DCSUG officers. There is a DCSUG directory with phone, fax, and E-mail contact information elsewhere in this newsletter.

September

13-15 SESUG SouthEast SAS Users Group
Annual Conference
Site: Omni Waterside Hotel
Norfolk VA
Contacts:
Joe Kelley at (706) 542-5359
jkelley@arches.uga.edu
Randy Finch at (205) 386-2197
rcfinch@tva.gov

23 DCSUG DC SAS Users Group,
General Meeting
Time: 8:30 am - 12:00 noon
Site: Bureau of Labor Statistics
2 Massachusetts Ave. N.E.
Program: See front page announcement
Contacts:
Linda Atkinson at (202) 694-5046
atkinson@econ.ag.gov
Peter Knapp at (202) 482-1359
peter_knapp@ita.doc.gov

October

4-6 NESUG NorthEast SAS Users Group
Annual Conference
Site: DoubleTree Hotel
Pittsburgh PA
Contacts:
Irene Mendelson at (973) 235-4334
irene.mendelson@roche.com
Paula Podolnick at (973) 540-7195
podolnp@pd.mops.wl.com

28 DCSUG Desktop SIG Meeting
Time: 7:30 P.M.
Site: TBA
Program: TBA

Contacts:
David Kiasi-Barnes at (301) 350-4752
appalt@aol.com
Yesvy Gustasp at (301) 589-4530
Yesvy.Gustasp@mix.cpcug.org

December

1 DCSUG DC SAS Users Group,
General Meeting
Time: 8:30 am - 12:00 noon
Site: Bureau of Labor Statistics
2 Massachusetts Ave. N.E.
Program: TBA
Contacts:
Linda Atkinson at (202) 694-5046
atkinson@econ.ag.gov
Peter Knapp at (202) 482-1359
peter_knapp@ita.doc.gov

Other Groups

CENSUG Census SAS Users Group
Contact: Rick Denby at (301) 763-8174

MDSUG Maryland SAS Users Group
Contact: Mr. R.H. Miller, (410) 740-4229
refa09a@prodigy.com

NCHSSUG National Center for Health Statistics SAS Users Group
Contacts: Arlene Siller at (301) 436-8522
abs2@cdc.gov
Linda Tompkins at (301) 436-7022

NIHSUG National Institutes of Health SAS Users Group
Contact: Ray Danner at (301) 496-6037

Membership Application/Renewal

Date:_____

Name:_____

Company Name:_____

Mailing Address:_____

_____

City,_____   State,_____   Zip _____

Phone # _____   Fax # _____

E-Mail:_____

Preferred mode of contact (check one):

                 Fax   e-mail

SAS Version(s) _____

SAS Product(s): _____

Operating System(s) _____

Check one:

              Individual membership   Corporate sponsorship

               for 1 year is $10.00   for 1 year is $50.00

Please indicate a contact person for Corporate Sponsorships!

              Check one:

              New membership   Renewal membership

              <u>DCSUG Membership Directory</u>

DCSUG is considering publishing a membership directory in 1997, containing members name, work affiliation (name of institution), work telephone number, e-mail address, and any areas of expertise that you would be willing to identify. This directory would be provided to DCSUG members only and would not be given to outside sources. If you would like to be included in such a directory please mark the boxes below, as appropriate.

           I would like to be included in the membership directory DCSUG is considering publishing. Include my name, work affiliation, and work telephone number.

         Include my e-mail address as shown on this form.

         Include the following areas of expertise (up to 2 products, platforms).

Mail to:
Washington DC SAS Users Group
P.O. Box 44670
Washington, DC 20026-4670

Sierra Information Services, Inc. Presents…

SAS® System
Programming Efficiencies: Tips and Techniques
Monday, November 30, 1998
Coffee and Pastries at 8:30 am.
Class begins at 9:00 am and ends at 4:30 pm

The George Washington University K Street Center for Professional Education
2020 K Street NW (Farragut West Metro)
Washington, DC

- A *one day workshop* on how to *improve the efficiency* of your SAS® System programs and applications!
  Appropriate for all operating systems and platforms!
  - *Learn* how to **reduce**:
    - **CPU utilization** and Input/Output operations required to complete your program's execution
    - **Resources required** for Data Set creation, Data Step completion and Procedure execution
    - **Size** of SAS® data sets
    - **Observation** retrieval time
  - *Implement* SAS® System and Data Set Options to:
    - **Select** *only* the observations and variables you need
    - **Obtain** SAS® System utilization and performance statistics
    - **Combine** your data sets
  - *Receive* over 200 pages of course notes and other reference materials
- This workshop is **suitable** for**:**
  - *Beginning to Intermediate* SAS® System programmers, *Researchers, Business* **Analysts** and other "end users", as well as *Systems Programmers* and *Data Base Administrators*
- **Workshop Fees…register early and save $20!**
  - Payments made *on/before* November 15, 1998: **$219.00** (after 11/15 **$239.00**)

Group discounts available for three or more persons from the same organization for whom payment is received on/before November 15. **Call us toll-free** (see below) **for details.**

Workshop Facilitator: Andrew H. Karp, President of Sierra Information Services, Inc., has given this workshop to SAS users throughout the United States, as well as in the United Kingdom, Australia and New Zealand. He is a 15-year SAS Software user, former adjunct faculty member at the UC Berkeley Extension Division and presenter of over 40 invited papers at SAS user group conferences in five countries. His firm is one of the first to be designated a Quality Partner™ of SAS Institute, Inc.

- **Registration Details and Other Important Information:**
  - **Form of Payment: check**, or purchase order payable to **Sierra Information Services, Inc**. We also accept **VISA** and **MasterCard**..
  - **Registration is not complete, and seat(s) will not be reserved, until payment or purchase order has been received.** Sorry, we cannot invoice after course attendance.
  - We reserve the right to cancel this workshop. If we do have to cancel, Sierra Information Service's **liability is limited** to refund of fees paid. We are **not liable for special or consequential damages** arising from workshop cancellation.
  - Refunds subject to a **$50 processing charge** if *you* cancel on or before 11/15. **A $100 processing charge** is applied for participant cancellations received after 11/15. Substitution of attendees is permitted without additional charge.
  - SAS is a registered trademark of SAS Institute, Inc. in the United States and other countries. ® Indicates USA registration. Quality Partner is a trademark of SAS Institute, Inc.

Mail Address: Sierra Information Services, Inc. 1489 Webster Street Suite 1308 San Francisco, California 94115

- **Facsimile Telephone:**   415/441-9175   **Questions? Call Toll Free:**   **1-888-747-1411**
- **Electronic Mail:**   SierraInfo@AOL.COM
- **World Wide Web:**   www.Sierrainformation.com

1998 Meetings

Plan ahead and mark your calendars now. The DCSUG will meet on the following dates in 1998: **December 1.** Meeting times and locations to be announced. If at any time you have a question about an upcoming meeting or other DCSUG information, call one of the members of the Steering Committee.
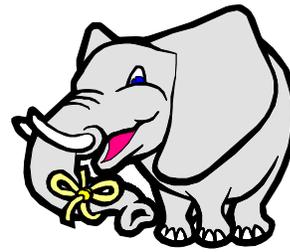
Remember to Join DCSUG!!!

Don't forget to renew your DCSUG membership for 1998. Dues are used to defray the costs of producing and mailing the newsletter and provide refreshments at our meetings. You'll make sure that you keep receiving the newsletter and keep DCSUG going. If you have not joined DCSUG, now is a great time to do so. Joining DCSUG is as easy as completing the membership form included in this newsletter. Individual memberships are only $10; corporate memberships are $50.

You're Invited

to visit the DCSUG home page

The URL for the DCSUG home page on the Web:
http://www.ita.doc.gov/industry/otea/dcsug

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