Back in 1992 when SESUG was first organized, the year 2000 was a long time in the future. Our sole focus was to create the best possible conference for SAS users in the Southeast. We had an impossibly short planning cycle for that conference — only ten months from start to finish. The result was SESUG ’93, held in February 1993 in St. Petersburg Beach, Florida. After a successful SESUG ’93, we started looking to the future. SESUG ’94 followed, and the SouthEast SAS Users Group has continued to grow and improve the conferences and services it provides to SAS users in the Southeast.

It is hard to believe, but our SEVENTH annual conference is almost here, SESUG ’99. As a result of the hard work of the conference co-chairs, Greg Barnes Nelson and George Matthews, the SESUG Executive Council, and the volunteers, SESUG ’99 promises to be the biggest and best SESUG conference ever. As you will see in this newsletter, SESUG ’99 builds on the successes of past conferences, while adding some unique innovations. Don’t miss this conference!

However, that isn’t all. We are well underway with planning our eighth and ninth conferences. SESUG 2K will be held in Charlotte, NC on October 15-17, 2000. We are also working on SSU 2001, a joint conference with the South Central SAS Users Group, to be held in New Orleans. More information on both of these conferences can be found elsewhere in this newsletter.

Finally, SESUG is your SAS Users Group. We are an all-volunteer organization dedicated to the improvement of our SAS software knowledge and skills. First and foremost, all of us are SAS USERS. These conferences and SESUG’s other activities are a great way to meet others with similar interests. Get involved. Volunteer. Have a great time.

See you in Mobile.
SQL: Fast or Slow?
Ian Whitlock

Is SAS SQL fast or slow? Consider a fictitious argument that I over heard between two of my colleagues. I will refer to them as Dr. Fast and Mr. Slow to help remind you of their conclusions about SQL. They were discussing a file JOBS. Two of the variables were PERSID (a key to persons) and JOBSID (the key to jobs held by that person). For example:

<table>
<thead>
<tr>
<th>PERSID</th>
<th>JOBSID</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>13</td>
<td>16</td>
</tr>
</tbody>
</table>

Mr. Slow said, "I ran into a nasty problem the other day. I wanted to add a new variable to the JOBS file giving the originally assigned JOBSID to each record with the same PERSID. Of course there was a lot more to it, but the details don't matter. After much agonizing, because of the client's request to use pure SQL code, I developed some nifty SQL to solve the problem. You know I just love subqueries. Unfortunately SQL is so slow that it ran for hours."

Dr. Fast asked for an explanation of the code. Mr. Slow responded, "Well, since it is complex, let me simplify the task for you - just subset JOBS to the first record in each group of PERSID. That, of course would be easy with FIRST dot processing in a DATA step, but remember I am limited to SQL. I have found an important method of counting using a subquery to solve this problem. Consider:

1. select a.jobsid, a.persid,
2. ( select count(b.jobsid)
3. from jobs as b
4. where (b.jobsid <= a.jobsid)
5. and (b.persid = a.persid
6. ) as rank
7. ) from a
8. where calculated rank = 1 ;

Dr. Fast automatically responded, "But an important principle of SQL is that you cannot assume any order to the processing of the file, so how can you guarantee that the count is always made in the desired order?"

"Well, line 5 insures that we are looking at records in the same group, and line 4 shows that we are counting the specific records where the JOBSID is less than or equal to a given JOBSID. The first time we count the lowest value of JOBSID, the next time the two lowest values of JOBSID, and so on. So you can see that there is no assumption of order to my method", replied Mr. Slow. Dr. Fast, who is really quite slow to understand some things, muttered something about people who use subqueries and returned to his office to think about the problem.

Lines 2 through 6 form a correlated subquery because the subquery's where condition in lines 4 and 5 refers to the outer query. This means that the SQL optimizer cannot process the inner query first. In fact it must form the subset for each record in the outer query. Consequently correlated subqueries can be notoriously slow.

I soon heard Dr. Fast exclaim, "Aha! He just wants the minimum JOBSID in each group of PERSID. I wonder why he didn't simply use:

1. select persid, min(jobsid) as origid
2. from jobs
3. group by persid ;

Now Dr. Fast's code involves the calculation of a statistic, but he eliminated the correlated subquery. Surely his code would execute much faster than Mr. Slow's code. To investigate how much faster he generated some test data with the code:

1. %let npers = 10000 ;
2. data jobs ;
3. drop temp i ;
4. do persid = 1 to &npers ;
5. temp = ceil(ranuni(8573124)*30) ;
6. do i = 1 to 5 ;
7. jobsid = put ( temp + i , z8. ) ;

(Continued on page 4)
Shape Your Business Data into a masterpiece of Business Intelligence

SAS Institute & Sun

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Contact us for your FREE copy of “Enterprise Mining — Shaping Business Data Into Strategic Business Knowledge” — an informative brief of the many ways enterprise mining is helping to craft distinct business advantage. Call 919/677-8200 or visit www.sas.com/summinter
I had no idea the discrepancy could be so great. Dr Fast replied, "Yes, the ratio of times is a factor greater than 4,000."

The macro variable NPERS allowed him to control the amount of test data easily. First he tried a small size, since correlated subqueries tend to bog down with size, and then he set NPERS to 10,000. He never tried a large number. Here is the log that he showed me.

```sql
16 proc sql stimer;
NOTE: The SQL Statement used 0.16 seconds.
17 18 create table mins3 as
19   select persid, min ( jobsid ) as minjobid
20    from JOBS
21    group by persid
22  ;
NOTE: Table WORK.MINS3 created, with 10000 rows and 2 columns.
NOTE: The SQL Statement used 1.81 seconds.
23 24 create table mins1 as
25   select a.persid, a.jobsid
26    from JOBS as a
27    where ( select count(b.persid)
28     from JOBS as b
29     where (b.jobsid <= a.jobsid)
30     and (b.persid = a.persid)
31     ) = 1
32  ;
NOTE: Table WORK.MINS1 created, with 10000 rows and 2 columns.
NOTE: The SQL Statement used 2 hours 12 minutes 36.02 seconds.
33 quit;
NOTE: The PROCEDURE SQL used 0.0 seconds.
```

I had no idea the discrepancy could be so great. Dr Fast replied, “Yes, the ratio of times is a factor greater than 4,000. No wonder Mr. Slow is complaining about the speed of SQL. Perhaps he will be relieved to know that it is only his code and not the language. The difference in times here reminds me of the time when I removed 30,000 steps from some procedural macro code. I wonder if the genie will always do what you tell it to.”

The lesson here is that even with a nonprocedural language like SQL it is sometimes important for the programmer to understand what he is asking the computer to do.
and the winner in the category of customer satisfaction by UNIX (the envelope please) is Tru 64 UNIX by Compaq

www.compaq.com/nonstopfacts
Delivering Results with the Output Delivery System (ODS)
Kirk Paul Lafler

The Output Delivery System (ODS) in Version 7 of the SAS System controls the formatting of all procedure output. It has many great features and provides flexibility when working with output since each output is split into two component objects: a data component and a template component. The data object contains the raw data values for each piece of output while the template object contains how the piece should look.

Procedure Output Listings
Prior to ODS, SAS users were accustomed to using the basic formatted output available with each procedure or with using techniques of merging SAS output into document editors such as MS-Word. The advantages of using default procedure print formats is that they are so familiar to users and easy to use. Beyond that, there isn’t too much motivation for using them, especially when incorporating procedure output into a formatted document. The limitations of the listing file are: 1) monospace fonts are used, 2) each output line is rendered at a time, 3) inability to control formatting, and 4) difficulty creating HTML code for web enablement.

Delivering Results with ODS
The Output Delivery System (ODS) provides added control for users to: 1) create customized procedure output, 2) create “master” templates, 3) produce output as two objects: a data component and a template component, and 4) generate output as HTML code to simplify web enablement.

Interacting with ODS
Several ways exist for interacting with ODS. They are the: 1) ODS statement, 2) SAS Explorer, 3) Template procedure, and 4) output procedure.

The SAS Explorer
The SAS Explorer is a new Version 7 feature used to explore the various elements of the SAS System. It consists of the Libraries (listing of allocated SAS libraries) and Results (contains the output directory as a result of executed SAS jobs).

ODS Output Structure
Output producing procedures create objects that

Have an ODS question?
Reach for the book with the answers!
SAS® Output Delivery System Answer Guide

This book is the ideal tool for getting the help you need to take full advantage of the SAS® Output Delivery System (ODS). It’s clearly written and organized into specific subject areas so you can be more productive and find what you need fast. You’ll get straightforward answers on how you can use ODS to produce great looking SAS output. Questions such as:

✓ Is ODS output and line-printer output different?
✓ How can I create output with ODS?
✓ Can I tell ODS where to direct output?
✓ Is there a way to list output object names?
✓ Should I know HTML before I output to the web?
✓ How can I customize ODS output?
✓ Can I create a SAS data set in ODS?
✓ How can I modify the values in an output object?
✓ Can I use ODS in the DATA step?
✓ How can I use the TEMPLATE procedure?
✓ And much more!

Order your copy today! Available Sept. 1999
$34.95 plus $4.95 S/H
Software Intelligence Corporation
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Spring Valley, California 91979-1390
Phone: (619) 660-2400
E-mail: KirkLafler@CompuServe.com
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(Continued on page 11)
Would you like to achieve maximum performance from your SAS® business intelligence solutions?

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For more information about SGI, please call [800] 800-7441 or visit www.sgi.com
Welcome to Mobile!

The Seventh Annual SouthEast SAS Users Group Conference in Mobile, Alabama will begin on October 31, 1999 and we hope that you will be a part of it all!

This year promises to be an outstanding conference with all the things you’ve grown to expect – like Code Clinic, Beginning and Advanced Tutorials, SAS Institute Demo Area -- as well as some new things. This year, we have expanded our conference by another ½ day to accommodate the 7 Pre-Conference Workshops, the Hands-On-Workshops and the nearly 100 papers and presentations.

In addition to the Academic Content of the Conference, you will have an opportunity to network with your friends and colleagues with our new After-Hours program. Other events include our Opening Night Session and Dinner followed by a Halloween Party on Sunday night and the Monday Night Mixer at the Gulf Coast Exploreum (sponsored by Compaq). If you are a company interested in exhibiting at SESUG or sponsoring an event please e-mail us and let us know, we’d love to have you!

Here are some important dates for you to remember:

- September 7, 1999..... Last day for discounted Early Registration rate
- October 1, 1999........ Last day to cancel your conference registration and receive a refund
- October 7, 1999......... Last day SESUG room rates are honored at the Adams Mark Riverview Hotel
- October 8, 1999........ Last day for the Regular Registration Rate

October 31 - November 3, 1999 ....................SESUG ‘99!

If you are planning to attend, be sure to sign up to help Volunteer as there will be a special gift for those that Volunteer at SESUG ’99! To volunteer, please visit our web site at:

http://www.sesug.org/volunteer.html

You can indicate your interest at the time you register.
Look forward to seeing you in Mobile!

Regards,

Greg Barnes Nelson and George Matthews
1999 SESUG Conference Co-Chairs
## Preliminary Schedule

**Conference Activities:**

**Saturday, October 30**

- 9:15 a.m. – 11:15 a.m.: Wildlife Wetlands Tour *
- 1:15 p.m. – 3:15 p.m.: Wildlife Wetlands Tour *
- 7:00 p.m. – 9:00 p.m.: Ghost Tour *

**Sunday, October 31**

- 8:00 a.m. – 5:00 p.m.: Pre-Conference Workshops *
- 7:00 am – 6:00 p.m.: Conference Registration
- 3:30 p.m. – 4:30 p.m.: First-Timers’ Session
- 6:00 p.m. – 8:00 p.m.: Opening Night Session and Dinner
- 9:00 p.m. – Midnight: Mobile Madness – SESUG ’99 Halloween Party

**Monday, November 1**

- 8:00 a.m.-5:00 p.m.: Conference Registration
- 8:00 a.m.-10:30 a.m.: Pre-Conference Workshops *
- 8:30 a.m. – 10:30 a.m.: Area Tours (Historic Tour, USS Alabama and Riverboat Tour) *
- 9:00 a.m.-10:00 a.m.: Paper Presenters Meeting
- 11:00 a.m.-12:00 p.m.: SESUG ‘99 Opening Session
- 12:00 p.m.-1:20 p.m.: Meet the Presenters Lunch Activities
- 1:30 p.m.-5:30 p.m.: Concurrent Sessions and Formal On-Line Demos
- 1:30 p.m.-4:30 p.m.: Hands-On Workshops
- 1:30 p.m.-6:00 p.m.: SAS Institute Demo Area
- 6:00 p.m.-7:30 p.m.: Monday Night Mixer at the Gulf Coast Exploreum
- 7:30 p.m.-11:00 p.m.: SESUG After Hours *

**Tuesday, November 2**

- 8:00 a.m.-5:00 p.m.: Conference Registration
- 8:00 a.m.-5:30 p.m.: Papers and Other Presentations
- 9:00 a.m.-4:30 p.m.: Hands-On Workshops
- 12:00 p.m.-1:20 p.m.: Meet the Presenters Lunch Activities
- 12:00 p.m.-6:00 p.m.: SAS Institute Demo Area
- 4:00 p.m. – 5:00 p.m.: SAS Quiz Bowl
- 5:00 p.m.-6:30 p.m.: SAS Futures Forum
- 7:00 p.m.-11:00 p.m.: Biloxi Casino Trip *
- 7:00 p.m.-11:00 p.m.: SESUG After Hours *

**Wednesday, November 3**

- 8:00 a.m.-11:00 a.m.: Conference Registration
- 8:00 a.m.-11:00 a.m.: Papers and Other Presentations
- 8:00 a.m.-11:00 a.m.: Hands-On Workshops
- 11:00 a.m.-Noon: Closing Session, Awards, and SUGI 25 Announcements

*Denotes extra-fee event
When was the last time you were asked to write an inefficient program? "Never" would be the likely answer to that question! In most cases, the word "efficiency" is never stated in a contract, specification, or verbal instruction; it is simply understood that part of the coder’s responsibility is to be efficient in both technique and development time. But, which coding constructs are truly efficient? Will a coding construct deemed to be efficient under one operating system be similarly efficient under your current operating system? And will the implementation of these efficient coding techniques cause undue delays in the development timeline?

Anyone who has ever dealt with these issues should read and study Robert Virgile’s "Efficiency - Improving the Performance of Your SAS Applications". In 228 pages, this book addresses many SAS programming issues, and evaluates the efficiencies of assorted methods of solving each problem. Mr. Virgile divides these techniques into logical chapter breaks, such as "Reading Data", "Sorting Data", and "Storage Space". For quick review, each coding problem is accompanied by an icon that illustrates the level of savings that can be achieved for the particular coding problem.

"The relatively small amounts of money and time it will take a developer to buy and study Robert Virgile’s 'Efficiency - Improving the Performance of Your SAS Application', is an investment that should provide immediate and recurring paybacks."

The author recognizes that "efficiency" can have many different definitions, and that techniques that provide savings in one area may be less efficient in another. For example, a technique that makes efficient use of I/O might require additional memory to execute. Another technique that cleverly maximizes CPU usage might require an extraordinary amount of programmer time to write and debug. These trade-offs are clearly stated under each applicable technique in the book. It is subsequently left to the reader to determine which factors are most important under their current working environment, and to code accordingly.

The author clearly identifies the techniques that he deems to be more efficient than others. However, he does not ask the reader to blindly trust his conclusions. Instead, the last chapter of "Efficiencies" is devoted to a detailed discussion of the coding techniques that were executed under 4 separate operating systems to prove the conclusions stated in the book. All of the author’s source code is provided, so the reader can verify the conclusions on his or her own operating system.

After completing my evaluation of this text, this reviewer would like to add one additional pointer to those already included in the book. "The relatively small amounts of money and time it will take a developer to buy and study Robert Virgile’s 'Efficiency - Improving the Performance of Your SAS Application', is an investment that should provide immediate and recurring paybacks."

SAS Institute gives us the latest scoop on user groups in the Southeast.

Brad Jordan fills out the RUN; section with a SAS crossword puzzle.

Finally, don’t forget to check out our sponsors’ ads.

I hope you enjoy this issue. Remember, if you want to write for, or advertise in, this newsletter, don’t be shy. Let me know.
Output producing procedures often create multiple pieces or tables of information. At times, it may be useful to know the names assigned to each piece of information. By knowing the names of each piece of output, you can better control the tables of information to be displayed in your output. The ODS statement syntax to use is:

\[
\text{ODS trace output} ; \\
< \text{SAS procedure code} > \\
\text{ODS trace off} ;
\]

### Selecting Desired Output Components

Once you know the individual names of each output component, you are now ready to select the desired piece of information for reporting purposes. The ODS statement syntax to use is:

\[
\text{ODS select output-component-name} ; \\
< \text{SAS procedure code} >
\]

where `output-component-name` is the name of the desired output table, such as

(Continued on page 12)

### Start Your Engines!

The 25th annual SAS Users Group International (SUGI) Conference is scheduled for April 9-12, 2000 in Indianapolis, Indiana. Make sure you're a part of this winning team by marking your calendars today.

Get in the fast lane and plan to participate. The Call for Papers and Participation is in progress now -- submit your paper or volunteer online via the web.

Check out the SUGI 25 website at [www.sas.com/sugi](http://www.sas.com/sugi) for the latest conference information.
How To (continued)

Moments in the UNIVARIATE procedure.

Web Enabling ODS Output
With the popularity of the Internet, you may find it useful to deploy selected pieces of output on your web site. ODS makes deploying procedure output to the web a simple process. Syntactically-correct HTML code is automatically produced and ready for you to deploy using your Internet browser’s software.

The ODS statement syntax to use is:

```
ODS html body = 'user-defined-html-file-name';
< SAS procedure code >;
ODS html close;
```

Using ODS to Output to Data Sets
At times, it may become necessary to have procedure output information written to a data set. ODS makes accessing individual tables an easy process. The syntax to use is:

```
ODS output output-table-name = user-defined-table-name;
< SAS procedure code >
```

where `output-table-name` is the name of the desired output table (component) containing the information you want written to a data set, such as `Moments` in the UNIVARIATE procedure. `User-defined-table-name` is the name you supply for the newly created data set.

Examples

**Standard SAS Procedure**
```
proc print data=ws151.movies noobs;
title1 'Detail Report Listing';
run;
```

**Web Enabling using PRINT**
```
ods html body = 'a:\ods-print.html';
proc print data=ws151.movies noobs;
title1 'ODS Web Enabled Detail Report';
run;
ods html close;
```

**Web Enabling using CONTENTS**
```
ods html body = 'a:\ods-contents.html';
proc contents data=ws151.movies;
title1 'ODS Web Enabled Contents Report';
run;
ods html close;
```

**Web Enabling using FREQ**
```
ods html body = 'a:\ods-freq.html';
proc freq data=ws151.movies;
title1 'ODS Web Enabled Frequency Report';
run;
ods html close;
```

**Web Enabling using PLOT**
```
ods html body = 'a:\ods-plot.html';
proc plot data=ws151.movies;
plot rating * length;
title1 'ODS Web Enabled Plot Report';
run;
ods html close;
```

**Web Enabling using UNIVARIATE**
```
ods html body = 'a:\ods-univariate.html';
proc univariate data=ws151.movies;
title1 'ODS Web Enabled Univariate Report';
run;
ods html close;
```

**Determining Results to Select**
```
ods trace output;
proc univariate data=ws151.movies;
title1 'Using ODS Trace';
run;
ods trace off;
```

**Delivering Results of Choice**
```
ods select Moments;
proc univariate data=ws151.movies;
title1 'Delivering Results of Choice';
run;
```

**Delivering Output to Data Sets**
```
ods output Moments = moments;
proc univariate data=ws151.movies;
title1 'Delivering Output to Data Sets';
run;
```

**ODS RTF Output**
```
ods rtf file = 'a:\ods-rtf.rtf';
ods select Moments;
proc univariate data=ws151.movies;
title1 'Delivering RTF Output';
run;
ods rtf close;
```

Conclusion

(Continued on page 14)
Statistician Position

The Atlanta division of one of the country’s leading providers of technology based management services, with a focus on direct marketing services and information technology outsourcing services, has an opportunity available for a statistician. This division develops products and services that support all aspects of credit management including: targeting and acquisitions, application processing, collections and recovery, servicing the banking, finance, retail, insurance and utility industries. Requirements: Must have a heavy concentration and strong academic performance in statistics and proficiency in the use of SAS or SPSS software. Degree required, (advanced degree a plus) with a major in Statistics, Math, Operations Research or Economics. 2 years direct experience creating risk or marketing models in the banking, credit bureau, finance or retail industries will be a plus. For confidential consideration, please fax your salary requirements along with a copy of your resume to: Kathy Kieffer, 404.869.2048.
How To (continued)

The Output Delivery System (ODS) provides flexibility and enhanced output capabilities for all SAS output. It permits users to explore how output attributes and controls are set; how output can be web enabled; formatted using colors, fonts, and other stylistic characteristics; and how to create output data sets and RTF output files.

References


Acknowledgments
SAS is the registered trademark of SAS Institute Inc., Cary, NC, USA and other countries. Other brand and product names are registered trademarks or trademarks of their respective companies.

Author Information
Kirk Paul Lafler is senior consultant, founder of Software Intelligence Corporation, and SAS Institute Quality Partner™ with 22 years experience supporting enterprise-wide computer systems. As an industry-invited speaker, author, and consultant, he has advised organizations on a variety of information technology (IT) issues, including Year 2000 initiatives. He has written three books, The Output Delivery System (ODS) Answer Book, The Year 2000 How To Guide for Medical Laboratories, and The Year 2000 Quick Reference & Pocket Guide for Computer Hardware and Software. He has written numerous technology articles for professional journals and is a leading authority on technology issues and solutions. Kirk has bachelor’s and master’s degrees in Management Science Systems Analysis from the University of Miami and pursued post-graduate studies in Telecommunications Management from George Washington University.

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At times, it may become necessary to have procedure output information written to a data set. ODS makes accessing individual tables an easy process.

The Output Delivery System (ODS) provides flexibility and enhanced output capabilities for all SAS output.

Solution to SASWORD Puzzle on page 16
User Group Support Information

SESUG Liaison
Michael Smith
919-677-8000, ext 7462
Email: michael.smith@sas.com

SESUG Local User Group Liaison
Patsy Harbour
919-677-8000, ext 2855
Email: patsy.harbour@sas.com

Please feel free to contact us for assistance at any time!

Local SAS User Group News
Support your local SAS user groups! The following local groups within the SouthEast region have officially registered with the Institute:

- Atlanta SAS User Group
- Birmingham Users for SAS
- Charlotte Area SAS User Group
- FL Gulf Coast SAS Users Group
- Maryland SAS User Group
- North FL Users of SAS Software
- Northern VA SAS User Group
- Research Triangle SAS User Group
- South Carolina SAS Users Group
- South Florida SAS Users Group
- Tallahassee SAS Users Group
- Triad SAS User Group
- Virginia SAS User Group
- Washington, DC SAS Users Group
- Wilmington Area SAS User Group

SAS Institute recognizes and supports only those local groups that have officially registered with SAS Institute’s User Group Support Department. To register your group, please contact Patsy Harbour at 919-677-8000 ext. 2855 or by email at patsy.harbour@sas.com

Regional SAS User Group News
Visit the Institute’s web site at www.sas.com/usergroups/rugabs/index.html to find out about Institute keynotes, formal online demos, and paper presentations at upcoming Fall 1999 Regional Conferences, including SESUG ’99. This new Web site also includes presentation abstracts and presenter biographies.

SUGI 25 News
Conference Chair Nancy Patton invites you to participate in SUGI 25, scheduled for 09-12APR00! You can participate as a paper presenter, a session coordinator, or by sharing your ideas for improving the conference.

- Submit your contributed papers via the Web by 01OCT99: www.sas.com/usergroups/sugi/sugi25/cfp.gateway.html
- Volunteer, via the new Web form, to be a session coordinator, suggest paper topics or presenters, or offer any ideas you have for improving the conference: www.sas.com/usergroups/sugi/sugi25/25participation.form.html
- Register for the conference via the Web beginning 03JAN00.

For the latest SUGI information, visit the SUGI 25 home page at www.sas.com/usergroups/sugi/sugi25/intro.html

Subscribe to UGNEWS
The Institute's electronic newsletter, UGNEWS, provides periodic information about the User Group Support program. The newsletter is distributed via email and posted on the Institute’s Web site at www.sas.com/usergroups/ugnews

To start receiving UGNEWS: send email to the User Group & User Publishing Support division at sugweb@sas.com saying "SUBSCRIBE UGNEWS-L" and include your full name or use the form on our Web site at www.sas.com/usergroups/ugnews-form.html

Visit the Institute's web site at www.sas.com/usergroups/rugabs/index.html to find out about Institute keynotes, formal online demos, and paper presentations at upcoming Fall 1999 Regional Conferences, including SESUG ’99.

Conference Chair Nancy Patton invites you to participate in SUGI 25, scheduled for 09-12APR00!
**SASWORD Puzzle**

**Brad Jordan**

**ACROSS**
3  If you use the POINT= option on a SET statement, what other statement is required in the data step?
4  How you create a macro variable inside a DATA step
5  How you define the end of a macro
6  Function that gives a random number from a uniform distribution
10 Function to convert zip codes to state names
12 How you delete obs. with duplicate key values using PROC SORT

**DOWN**
1  \( X=a+b+c+d \); What is the value of \( X \) when: \( a=1, b=.., c=3, \) and \( d=4 \)?
2  How you delete duplicate observations using PROC SORT
3  Function that corrects the problem with \( X \) in 1 down
7  The loneliest number
8  Remainder function
9  Function to increment date values, for example: change the date ‘20MAY1998’d into ‘01MAY1999’d
11 Small canine

**Solution on page 14**

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