



HARTFORD AREA SAS® USERS GROUP

Volume 11, Issue 3 Third Quarter, August 2000

Table of Contents

Note from the Chairman	2
Meeting Announcement	2
Continuing with Education	3
Steering Committee Members	3
Consultants Special Interest Group	4
Sponsorship Policy	4
May Highlights	4
Pictures from May Meeting	5
The Life and Times of a SAS Programmer	5
Recruiting Policy	5
Calendar of Events	6
Book Review: <i>Cody's Data Cleaning Techniques Using SAS Software</i>	6
Editorial and Production Staff	6
Tip Index	7
Tips and Techniques	7 to 11
Hyperlinks of Interest	11
Directions to August Meeting at LEPH, Yale University, New Haven	12

The HASUG Flash is available for reading on the World Wide Web at <http://www.hasug.org>
SAS is a registered trademark of SAS Institute Inc. Cary, North Carolina

Note from the Chairperson

Barbara Moss
CIGNA Managed Care Systems

At the May HASUG meeting, we had a tremendous turnout of ninety-one people. As well as hearing three presentations about SAS Version 8, those in attendance voted for a Steering Committee to serve over the next year. In addition to the people continuing in their posts from last year, we welcome two new members, Bernard Dubb from Online Associates and Clint Rickards from Purdue Pharma. A complete list of committee members can be found later in this newsletter.

My name is Barbara Moss. As the newly elected chairperson, I am looking forward to working with all of these talented people to put together quarterly meetings and newsletters full of information for the HASUG community. Many thanks to Miguel Hernandez for his time and efforts as chairperson over the last two years. He presided over exciting times, including HASUG's successful transition from paper folding, labeling and stamping to the Internet and email. Another change is in the structure of the Steering Committee. The office of secretary has been dissolved. A special thank you to Karol Katz for her many years of handling the mailing list and labels.

A reminder to all to take note of our ever improving website: <http://www.hasug.org>. If you have comments or suggestions, please let us know. The newest feature we think will be helpful is the pick for the Next Meeting Announcement. A click on this button will show you directions, dates, times, topics and speakers for the next quarterly users group meeting. This will provide up-to-date meeting information in advance of the newsletter, for your planning convenience. In fact, the information will be updated following each quarterly meeting. The Flash newsletter will continue to be published quarterly with the many types of articles you have come to expect.

HASUG Meeting Announcement

The third quarter HASUG meeting is to be held on Thursday, August 17, 2000, 9:00 a.m. to noon at the Laboratory of Epidemiology and Public Health at Yale University in New Haven, Connecticut..

Our first presentation will be by Christianna S. Williams of Yale University. Christianna will present, "PROC SQL for DATA Step Die-Hards". PROC SQL can be rather intimidating for those who have learned SAS(data management techniques exclusively using the DATA

STEP. However, when it comes to data manipulation, SAS often provides more than one method to achieve the same result, and SQL provides another valuable tool to have in one's repertoire. Further, Structured Query Language is implemented in many widely used relational database systems with which SAS may interface, so it is a worthwhile skill to have from that perspective as well.

Christianna Williams has been a programmer/analyst in the Epidemiology and Public Health Department at Yale University for seven years. She has lectured on SAS topics, including MACRO and SQL to graduate students and research professionals as well as at NESUG meetings. She has been using SAS for data management and analysis in academic research for almost fifteen years.

Our second presentation is titled Adventures in Building Web Applications: A Tutorial on Techniques for Real-World Applications and will be presented by Jason Gordon, GE Capital Card Services and Michael Davis, Bassett Consulting Services, Inc.. This presentation was also co-authored by George Sharrard, GPS Corporation.

The authors recently completed their first web-based application, a Dashboard reporting system for the Card Services Division of GE Capital. Along the way, they discovered how SAS/IntrNet software operates differently than they original thought. They also developed some tools and not so obvious strategies to build and maintain a web site with well over a hundred pages. This presentation is an attempt to share those experiences. Among the topics covered:

- maintaining a test site using automated string replacement
- automating web site updates through block replacement
- validating user input without Javascript or Java
- logging what users do without hit counters or server logs
- using PUT statements to _webout -- not what you thought
- returning SAS/GRAPH output to a web browser

The presentation will feature some on-line demonstrations to illustrate how these techniques are used in real-world applications.

Jason Gordon is a Senior Risk Manager for GE Capital Card Services in Stamford, Connecticut. He began using SAS during his graduate work in statistics at The Ohio State University in 1995.

(Continued on page 3)

(Meeting Announcement continued from page 2)

Michael Davis is Vice President of Bassett Consulting Services, Inc., a SAS Institute Quality Partner™. An independent consultant since 1994, he previously worked for Blue Cross & Blue Shield of Connecticut and the Connecticut Hospital Association. A SAS user since 1985, Michael specializes in creating SAS/AF FRAME and SAS/IntrNet web-enabled applications. He is a past chairman of the Hartford Area SAS User Group and is a frequent presenter and section chair at NESUG and SUGI. Michael is also the president of the Connecticut Chapter of the Independent Computer Consultants Association.

Continuing With Education...

Peter Prause, The Hartford

The SAS Institute Regional Training Center in Glastonbury, CT. is offering these courses through December 2000. Course information for these courses and many other non-local courses is available on the internet at the SAS website www.sas.com. To register for a course or to get more information, phone SAS Institute at 1-800-333-7660.

SAS Programming II	Aug 2-4
Getting Started with SAS Software	Aug 10-11
SAS Programming III	Aug 24-25
New Features in the Nashville Release	Sep 7-8

SAS Programming I: Essentials	Sep 27-29
Optimizing SAS Programs	Oct 12-13
SAS Report Writing	Oct 19-20
SAS Programming II	Nov 1-3
SAS Programming I: Essentials	Nov 15-17
SAS Macro Language	Nov 30-Dec 1
SQL Processing with the SAS System	Dec 13-14
Processing with SAS/ACCESS	Dec 15

Local SAS training is also available at Destiny Corporation in Wethersfield, CT. Below is a list of their scheduled classes through December 2000. You can reach Destiny at 1-800-787-2464 or at 860-721-1684, or send email to info@destinycorp.com. You can visit their web site at www.destinycorp.com.

Fundamentals of the SAS System	Sep 6-8
Programming in SAS Software	Sep 27-29
Version 8 Changes and Enhancements	Oct 2-3
Macros in SAS Software	Oct 4-6
Report Writing in SAS Software	Oct 12-13
Advanced Programming Techniques	Nov 6-7
Getting Started with SAS	Nov 8-10
Fundamentals of the SAS System	Dec 4-6
SQL Processing with SAS Software	Dec 7

(Continued on page 4)

STEERING COMMITTEE MEMBERS

Name	Organization	Telephone	E-Mail
James Alling		(860) 447-2253	jtalling@home.com
Michael Davis	Bassett Consulting	(203) 562-0640	michael@bassettconsulting.com
Bernard Dubb	Online Associates	(860)-487-1917	kb1dgy@yahoo.com
Miguel Hernandez	Enherent	(860) 687-2262	mhernandez@enherent.com
Cindy Johnson	Bristol-Myers Squibb	(203) 677-6922	johnsonc@bms.com
Karol Katz	Yale University	(203) 764-4338	Karol.Katz@yale.edu
Rob Krajcik	Bristol-Myers Squibb	(203) 677-6125	Robert.Krajcik@bms.com
Rene Laurencot	Pfizer	(860) 228-4786	renehana@gateway.net
Albert Lavoie	Bristol-Myers Squibb	(203) 677-6166	lavoiea@bms.com
Barbara Moss	CIGNA	(860) 726-1504	Barbara.Moss@CIGNA.com
Chuck Patridge	The Hartford	(860) 547-6644	Charles_S_Patridge@prodigy.net
Peter Prause	The Hartford	(860) 547-7484	Peter.Prause@thehartford.com
Clinton Rickards	Purdue Pharma	(203) 588-7547	Clinton.Rickards@pharma.com
Janet Stuelpner	consultant	(212) 573-3452	stuelj@pfizer.com
Gerald Zuckier	CHIME	(203) 624-0940	GZuckier@alum.mit.edu

(Education continued from page 3)

The Department of Mathematical Sciences at Central Connecticut State University has asked that we announce a new course designed to prepare students for the SAS Version 8 Level 1 Certification Exam. The course, STAT 51: SAS Professional Certification, will be offered at CCSU in New Britain on Tuesdays and Thursdays 5:15pm to 6:30pm from January to May 2001. It is a regular three credit college course. For more information, contact Prof. Daniel Larose, Ph.D., at larosed@ccsu.edu. To register for the course, call the CCSU Enrollment Center at 860-832-2256, or go to their web site (www.ccsu.edu/enrollmentctr/) to find more information..

If you or your organization has need for training which is not currently scheduled, please speak to a Steering Committee Member about it.

SAS CONSIG

The SAS Consultants Special Interest Group (SAS CONSIG) operates and maintains a web site located at www.sasconsig.com. This site lists employment opportunities, contracts, vitas, resumes, and companies seeking SAS professional talent. It is updated weekly. You are encouraged to visit that web site or to contact Charles Patridge (Email:Charles_S_Patridge@prodigy.net) for further information.

The HASUG Sponsorship Policy

All parties are encouraged and welcome to attend our quarterly HASUG meetings scheduled during the months of February, May, August, and November of each year. Usually these meetings are scheduled the 3rd Thursday from 9:00 am to noon at various locations throughout Connecticut. Past locations have included Hartford, Meriden, Middletown, Norwalk, Glastonbury, and New Haven. We are always looking for new hosts within the state of Connecticut. If you feel your organization can host a meeting of up to 70 or so people, please contact one of the Steering Committee members.

May HASUG Highlights

Albert Lavoie
Bristol-Myers Squibb

At the May HASUG meeting, the membership held its annual Steering Committee elections. All current, active members were re-elected. In addition, Bernard Dubb, (Online Associates) and Clinton Rickards (Purdue Pharma) were elected. The newly elected Steering Com-

mittee then elected Barbara Moss (CIGNA) as the new HASUG chairperson. Many thanks go to our outgoing chairperson, Miguel Hernandez Jr. (Enherent), for two years of strong and growth oriented leadership.

This quarter, the HASUG membership was treated to three Version 8 presentations. There were approximately 90 people in attendance.

The first presentation was given by Scott Mebust (SAS Institute). Scott's presentation was titled "Version 8 base SAS Performance, How does it stack up?". The concept driving Scott's presentation was that SI would like to use Version 6 performance as a benchmark with which to compare Version 8 performance. Using a number of charts, tables and graphs, performance statistics for four operating systems (OS/390, Windows NT, two flavors of UNIX) were compared for a number of PROC's and the DATA step. Generally, Version 8 is about on par with Version 6 (the benchmark). However, SI has a number of future initiatives to improve performance. Concluding the presentation Scott gave some insights into SI's long term plans for a new release (i.e., Version 9). Version 9 initiatives include: Multi-threading, Multi-platform and Scalability.

Judy Sullivan (Pfizer) gave an excellent presentation titled "SAS Version 8, ODS for Drug Safety Reporting". The standard electronic reporting format required of the Pharmaceutical Industry by the FDA is now PDS Postscript format. Within a mere half hour, Judy was able to give a concise overview. She was able to describe the main features of ODS with enough detail of the syntax that a programmer could start effectively using the product immediately.

The third presenter was Michael Davis (Bassett Consulting and SAS Quality Partner). As always, if you missed this Davis presentation, you missed a great opportunity for significant insights regarding SAS Software. Michael presented, (in David Letterman style), his "Eight Reasons to Start Using SAS Version 8 Software". Michael's choice for #1 reason to migrate your SAS environment was the Output Delivery System (ODS). Additionally, Michael gave an effective demonstration of these Version 8 features:

- SAS Explorer Interface,
- SAS Enhanced Editor,
- Version 8 OnlineDoc.

For anyone planning a migration from Version 6 to

(Continued on page 5)

(Highlights continued from page 4)

Version 8, Michael's paper detailed several SI Resources available from their web site (www.sas.com). Two of note are Tech Note: TS-628, found at:

<http://ftp.sas.com/techsup/download/technote/ts628.pdf>

and "What's new in Version 8 of the SAS System at:

www.sas.com/service/techsup/news/whatsnew_v8.html

Pictures from May Meeting

Pictures taken at the May meeting, such as the one of Scott Mebust and Barbara Moss shown below, can be seen by visiting the HASUG web site:

<http://www.hasug.org>.



SAS Book and Video Review The Life and Times of a SAS Programmer

Daniel T. Cannon,
The Hartford

The HASUG Steering Committee is always looking for people to review new SAS offerings. In the spirit of this, I chose to check out some new SAS books and videos published by Delta Press Ltd. I thought it was kind of unusual that these offerings would be found in what is normally a military-based catalog (an extension of the Books by Users program?). Anyhow, this is my review...

Fighting Skills of the SAS by Mike Robinson

The catalog describes this book as having "individual chapters on weapon skills, how SAS teams operate behind enemy lines, sabotage techniques and various booby trap scenarios"

The HASUG Recruiting Policy

HASUG's primary mission is to provide a forum for SAS professionals to meet and share experiences. HASUG also recognizes that searching for new employment opportunities is a normal activity when professionals meet. Since we depend on our respective employers to support HASUG by providing time for members to attend, prepare presentations, and provide meeting facilities, we do not wish to jeopardize those relationships we have all nurtured.

Therefore, when attending any of our quarterly meetings, we request that all parties engaged in recruiting activities be "professional and discreet", and suggest that such activities be carried outside and after our meetings. Those seeking or offering positions may display materials at a location designated by HASUG at each quarterly meeting. The materials may include resumes, job openings, contract opportunities, business cards, etc. None of the materials may include salary information. All such materials left after the meeting will be discarded. Violators of this policy may be asked to leave the meeting.

For other recruiting opportunities, please see the SAS CONSIG article elsewhere in this newsletter or visit www.sasconsig.com.

Commentary: While many of these skills are helpful, I didn't see much on DATA or PROC steps. Throughout the book, they kept talking about some British Special Air Service, but I couldn't quite figure out who or what they were talking about (a new feature of Version 8 ?). Gee, the SAS Bowl teams at SUGI had seemed pretty friendly to me.

SAS Encyclopedia of Survival by Barry Davies

This manual "covers every area of survival – from basic fieldcraft techniques to the most modern GPS navigation and signaling equipment ...It contains 120 diagrams that show you how the SAS uses its fighting skills"

Commentary: Again, very little in the way of programming techniques. I thought I'd been in some pretty good battles with SAS, but nothing like this. I figured GPS must be a new PROC, perhaps an extension of PROC PLOT, but I didn't see any code references. The diagrams might be helpful with an unruly user or two, but can't help you tackle PROC TABULATE. Funny – this book also mentions Britain's SAS very prominently throughout (maybe a user group in SAS/UK ?).

(Continued on page 6)

(Life and Times, continued from page 5)

Not finding much in the way of programming tips in either manual, I decided to check out a couple of new videos...

SAS Weapons & Training (60 min. Color VHS)
This video claims “**SAS** is the most feared and revered fighting force! Their elite training techniques are the envy of the world’s special forces! Now with this video you too can know the training secrets...”

Commentary: Boy, this sure was different than any other SAS training video I’d ever seen. Personally, I thought it better suited for a postman than a SAS programmer, but certainly this new release looks demanding. I mean, I’ve been in a few rough Steering Committee meetings, but I still think this is a bit much...

SAS Escape, Evasion, Survival (60 min. Color VHS)
This video “takes you on a behind the lines **SAS** mission...showing the responses and tactics used to survive and not get caught!”

Commentary: I thought I’d find this video particularly useful for evading SMF detection and RACF violations and such, but they weren’t even mentioned! I just don’t know...

Conclusion: I find it hard to believe that SAS Institute would endorse such books and videos, but I guess they felt they the need to toughen things up a bit with Version 8. I’m still not sure why they’re endorsing combat and survival over standard programming techniques, but it certainly is more exciting. One thing I do know though – personally, I’m going to have to really start working out if I’m going to pass the next Professional Certification exam!

Calendar of Events

Future General Meetings and Conferences:

August 17, 2000	Yale University, New Haven, CT
Sept. 24-26, 2000	NESUG, Philadelphia, PA
November 16, 2000	The Hartford, Hartford, CT
February 15, 2000	TBA

HASUG Steering Committee Meetings:

August 17, 2000	Immediately after HASUG Meeting
TBA	Conference Call, 11:30 - 12:15
November 16, 2000	Immediately after HASUG Meeting

Book Review

Cody's Data Cleaning Techniques Using SAS Software

Author: Ron Cody
ISBN 1-58025-600-7
Publication # 57198
Cost: \$34.95

Review by Janet Stuelpner and Charles Patridge

"Cody's Data Cleaning Techniques Using SAS Software" is an excellent tutorial for beginning through intermediate SAS programmers who have to deal with imperfect data which is quite common in many environments and applications. This is a very good step-by-step introduction to the world of data cleansing. Many advanced SAS professionals would also benefit from reading this book for its various creative techniques, and refreshing those sometimes long forgotten "tricks" one may have used in the past.

Even though Ron Cody's book illustrates all of his techniques using a typical clinical trial data set (file), the test data can easily be understood by most readers of this book and easily transferable to any industry. The style of the book is very conversational and this is one of very few drawbacks. If you have ever attended a presentation by Ron Cody, as you read, you feel like you are sitting in the auditorium with him as he speaks, but without the vacation pictures. The book could be a bit less familiar. To those of us who know all of the people to whom he refers, this is not a problem. However, without knowing the personalities and skill level of the people he quotes, it can be disconcerting.

The biggest advantage to this book is Ron's approach to addressing a cleansing technique for a particular problem by starting with a simple solution and building upon its simplicity to a very robust SAS macro solution. The book begins each section with a very elementary example upon which is built a more complicated task. This is

(Continued on page 7)

Editorial and Production Staff:

Editor	Janet Stuelpner
Layout	Michael Davis
Member Lists	Charles Patridge
Contributions	Dan Cannon
	Albert Lavoie
	Peter Prause
	Charles Patridge
	Barbara Moss
	Janet Stuelpner

(Book Review continued from page 6)

very advantageous, especially for the beginner. There are a great number of helpful hints and methods that can be used by one and all. One criticism is the last example in the book, although pertinent to cleaning the data, is overkill. This last example brings the book from one that is geared toward the novice to one that is understood only by the expert. A big plus for this book is that it points out several approaches to a given problem highlighting the advantages and disadvantages of each approach. And, Ron should be commended for the way in which he provides comments to the numbered statements in each program making it very easy to read and understand.

Having more than twenty years of experience dealing with "messy" data and developing our own data "scrubbing" routines, we recommend having this book in your SAS library of books. It should be required reading for all new SAS programmers, as we all too often have to deal with imperfect data. The cost of this book, at \$34.95, can easily be justified by being able to utilize many of the actual source code examples illustrated within this book in your own applications. Overall, we give this book a THUMBS up!

One big complaint in reading this book in the **Books by Users**TM program is not having the various programs and data files easily accessible in electronic form. It would have been very easy for SAS Institute Inc. to provide a downloadable ZIP file on their web site making it easy to access, execute and, actually run the various programs while reading Ron Cody's newest book. This feature should be considered mandatory in all future books unless a diskette is included. It would be much more effective if the data and programs were in electronic format so the audience could try out the programs and the ideas put forth in the book.

Tips and Techniques

Disclaimer:

"Each tip included here addresses a problem, and presents a use of one or more SAS concepts. Use it to stimulate your thinking and help you on your way to solving your own problem. Some tips may or may not work in your environment or with your version of the SAS Software, and you should use these tips with this in mind. Neither HASUG nor contributing Author(s) should be held responsible for any direct and/or indirect damage to you or your applications from using these free tips."

Index of Tips in Newsletter

- | | |
|---------|--|
| Tip 142 | Calculate the Median Value for Each of Several Class |
| Tip 143 | How to make all Variable Labels equal to BLANKS |
| Tip 144 | Is there a way to make SAS print the current time and date rather than the date and time that the SAS session started? |
| Tip 145 | macros that read an external file contains a list of external SAS programs to be saved in a SAS catalog |
| Tip 146 | Is it possible to dynamically allocate datasets with dynamically allocated macro variables? |

Note: These tips and all prior tips can be found at :

<http://www.sasconsig.com>

TIP 00142

```
/* Neale Parsons */
/* Email: PARSONSN@BUPA.COM */

/* routine to calculate medians */
/* - calculates the median value */
/* for each of several classes */
/* - have found this to be quicker */
/* than PROC UNIVARIATE for */
/* large data sets but takes */
/* longer for small data sets */

/* There is no time savings in */
/* this example */
```

```
*CREATE DUMMY DATA*;
DATA TESTDATA;
***INPUT PROCEDURE CODE AND LENGTH
OF STAY DUMMY DATA*** ;
INPUT OPCODE $8. LOS;
CARDS;
A6500 5
F0910 0
F0910 1
F0910 1
```

(Continued on page 8)

(TIP00146 continued from page 7)

```
G4500      0
G4500      1
G4500      2
G4500      2
S0630      0
S0630      0
S0630      1
S0630      1
S0630      2
S0630      2
S0630      3
T2000      0
T2000      0
T2000      1
T2000      1
T2000      2
T2000      2
T2000      2
T2000      3
T2000      3
T2000      3
W4210      0
W4210      9
W4210      9
W4210      10
W4210      11
W4210      11
W4210      11
W4210      12
W4210      12
W4210      13
W4210      13
W4210      14
W4210      14
X1050      0
X1050      2
;
RUN;

*OBTAIN BREAKDOWN OF VOLUME BY
PROCEDURE CODE*;
PROC SORT DATA=TESTDATA;
  BY OPCODE LOS;
RUN;

DATA MEDIAN(KEEP=OPCODE VOL);
  SET TESTDATA;
  BY OPCODE;
  VOL+1;
  IF FIRST.OPCODE THEN VOL=1;
  IF LAST.OPCODE;
RUN;
```

```
*CALCULATE MEDIAN LENGTH OF STAY FOR
EACH PROCEDURE CODE*;
*Equivalent to the middle value in the
range where volume is an odd number*;
*Or the average of the 2 middle values
where volume is an even number*;
DATA MEDIAN(KEEP=OPCODE VOL MEDIAN);
  RETAIN CUMVOL 0;
  SET MEDIAN;
  CUMVOL+VOL;
  DO I=1 TO (MOD(VOL,2)=1); *ODD*;
    OBSNUM=CUMVOL-VOL*0.5+0.5;
    SET TESTDATA POINT=OBSNUM;
    MEDIAN=LOS;
    RETURN;
  END;
  DO I=1 TO (MOD(VOL,2)=0); *EVEN*;
    MEDIAN=0;
    DO J=0 TO 1;
      OBSNUM=CUMVOL-VOL*0.5+J;
      SET TESTDATA POINT=OBSNUM;
      MEDIAN=LOS+MEDIAN;
    END;
    MEDIAN=MEDIAN/2;
  RETURN;
END;
RUN;

*OUTPUT RESULTS*;
OPTIONS NONUMBER NODATE;
TITLE 'MEDIAN LENGTH OF STAY AND
EPISODE VOLUME BY PROCEDURE CODE';
FOOTNOTE;

PROC PRINT DATA=MEDIAN NOOBS;
  VAR OPCODE VOL MEDIAN;
  FORMAT VOL MEDIAN 8.2;
RUN;

*PROC UNIVARIATE, FOR COMPARISON*;
PROC UNIVARIATE DATA=TESTDATA NOPRINT;
  BY OPCODE;
  VAR LOS;
  OUTPUT OUT=TESTUNIV MEDIAN=MEDLOS;
RUN;

/*** end of TIP 00142 ***/
```

TIP00143

```
/* Author: Charles Patridge */
/* Charles_S_Patridge@prodigy.net */

/* How to make all Variable Labels */
/* equal to BLANKS */

data test;
  label x = 'x';
  label y = 'y';
  label z = 'z';
  x = 1;
  y = 2;
  z = 3;
run;

proc contents data=test out=contents
  noprint; run;

proc sql;
  select name into :alphaord
    separated by '=' ' '
  from contents
quit;

data newtest;
  set test;
  label &alphaord = " ";
run;

/* or without having to re-read the */
/* SAS dataset */
proc datasets library=work;
  modify test;
  label &alphaord = " ";
quit;

/* A Better Solution Provided by */
/* Robert Krajcik */
/* Email: robert.krajcik@bms.com */

proc datasets lib= nolist;
  modify a;
  attrib _all_ label='';
quit;

/* Another trick is to simply use.. */
/* options nolabel; */
/* to temporarily turn off labels */

/** end of tip 00143 **/
```

TIP 00144

```
/* Author: Robert Workman */
/* Email: rworkman@CARBOMEDICS.COM */

/* Is there a way to make SAS print */
/* the current time and date, */
/* rather than the time and date */
/* when SAS was last started? */

%put %sysfunc(datetime(),
  datetime.);

/* end of tip 00144 */
```

TIP00145

```
/* Author: Charles Patridge */
/* Charles_S_Patridge@prodigy.net */

/* SAVECAT.SAS */
/* */
/* It is a series of 3 separate sas */
/* macros which will read an */
/* external OS file (such as */
/* convert.lis) that contains a */
/* list of external SAS programs to */
/* be saved in a SAS catalog. */
/* */
/* To create CONVERT.lis use OS */
/* command such as: */
/* DIR *.SAS/OUT=CONVERT.LIS */
/* (ALPHA VMS OS) */
/* DIR *.SAS>CONVERT.LIS (DOS OS) */
/* */
/* TO EXECUTE THE MACRO SAVECAT, */
/* YOU WILL NEED TO PASS THREE */
/* ARGUMENTS TO THE MACRO. */
/* */
/* %SAVECAT( FILEPATH, SEARCH.FILE, */
/* SAVECAT ); */
/* */
/* - FILEPATH, is a directory */
/* path of where the */
/* CONVERT.LIS can be found, */
/* as well as the files listed */
/* in the CONVERT.LIS are */
/* located. That is, the */
/* files you wish to SAVE to */
/* CATALOG, and the file which */
/* lists these files must be */
/* in the same directory. */
```

(Continued on page 10)

(TIP00145 continued from page 9)

```
/*      - CONVERT.LIS IS THE FILE      */
/*      CREATED BY AN OS COMMAND      */
/*      such as                        */
/*      DIR *.SAS/OUT=CONVERT.LIS     */
/*      - SAVECAT is the SAS CATALOG  */
/*      you wish to save these        */
/*      external SAS programs in      */
/*      (ie SAVECAT=sasuser.newcat)   */
/*      The name should be a new      */
/*      catalog that does not exist   */
/*      otherwise, the macro may      */
/*      not work due to existing      */
/*      source programs with same     */
/*      names.                         */
/*                                     */
/* Currently this Macro is setup to   */
/* run in an ALPHA VMS OS. Changes    */
/* will be required to execute in     */
/* another OS. You need to change     */
/* the first data step (GETFILES)     */
/* in the SAVECAT macro below to be   */
/* able to read the list of files     */
/* in the file containing the list    */
/* of files to be saved               */
/* (CONVERT.LIS).                    */
```

```
OPTIONS SOURCE SOURCE2 MPRINT MLOGIC
SYMBOLGEN;
```

```
%MACRO SAVESRC(FILEPATH, EXTFILE,
SAVECAT, SASNAME );
  DM "CLEAR; CAPS OFF;" ;
  /** retain case sensitivity ***/
  DM "INCLUDE '&filepath.&EXTFILE' ";
  /** include external sas pgm ***/
  DM "SAVE &SAVECAT..&SASNAME..source";
  /** save sas pgm in catalog ***/
  DM "CLEAR;";
%MEND SAVESRC;
```

```
%GLOBAL NUMOBS;
%MACRO NUMOBS(DSNAME);
/* macro to get number of obs in    */
/* dataset                            */
  DATA _NULL_;
    IF 0 THEN SET &DSNAME
      NOBS=NUMOBS;
    CALL SYMPUT('NUMOBS' ,
      PUT(NUMOBS , BEST.));
    STOP;
  RUN;
%MEND NUMOBS;
```

```
%MACRO SAVECAT( filepath, EXTFILE,
SAVECAT );
```

```
DATA GETFILES(KEEP=GETFILES SASPGMNA);
  LENGTH GETFILES $ 200 ;
  /* infile needs to be modified    */
  /* depending on the OS            */
  INFILE "&filepath.&EXTFILE"
    MISSEVER LENGTH=LEN FIRSTOBS=4
    end=eof;
  /* needs to be modified for each */
  /* Operating System and how to   */
  /* get the name of each file to  */
  /* be changed                     */
  INPUT @1 GETFILES $VARYING. LEN ;
  GETFILES = SUBSTR(GETFILES,1,
    INDEXC(GETFILES, ';')-1);
  /** name.ext ***/
  SASPGMNA = SUBSTR(GETFILES,1,
    INDEXC(GETFILES, '.')-1);
  /** just name ***/
  getfiles = lowercase(getfiles);
  if getfiles = ' ' then delete;
  /* This eof depends on the OS    */
  if eof then delete;
RUN;
```

```
%NUMOBS(GETFILES);
/* How many files to get and save */
```

```
%DO I = 1 %TO &NUMOBS;
  /* Loop through list of files    */
  /* 1 at a time                    */
  DATA _NULL_;
    GETRECD = &I;
    SET GETFILES POINT=GETRECD;
    CALL SYMPUT('EXTFILE',
      GETFILES);
    /* external file name          */
    /* with extension              */
    CALL SYMPUT('SASPGMN',
      SASPGMNA);
    /* name of sas program        */
    /* without extension           */
    STOP;
  RUN;
```

```
/* Get External SAS Program      */
/* and Save to SAS Catalog       */
%SAVESRC(&filepath, &EXTFILE,
&SAVECAT, &SASPGMN );
  %END;
%MEND SAVECAT;

/* SAMPLE EXECUTION OF A SAVECAT */
*** %SAVECAT( userdisk1:[patridge.
  prtpgms], savelis.lis,
  sasuser.newcat);
/** end of tip 00145            */
```

TIP00146

```
/* Author: Charles Patridge */
/* Charles_S_Patridge@prodigy.net */

/* Is it possible to dynamically */
/* allocate datasets with */
/* dynamically allocated macro */
/* variables? */
/* */
/* for example: */
/* data _null_ ; */
/* set X ; */
/* j=compress('cb'!!put(_n_,4.)); */
/* call symput('j',_n_); */
/* run ; */
/* */
/* data &cb1 &cb2 ... &cb_n_ ; */
/* ***** is this possible? ***** */
/* run ; */
/* */
/* How to make SAS fill out ONLY */
/* the macro variables generated */
/* previously? */
/* */
/* SOLUTION: */

data cb1; z = 1; run;
/** sample data for CB1 **/
data cb3; z = 3; run;
/** sample data for CB3 **/
data cb6; z = 6; run;
/** sample data for CB6 **/

data X;
  infile cards;
  input dataset $;
  cards;
cb1
cb3
cb6
;;;
run;

%MACRO EMPTYYN(DSNAME);
/** macro to get number of OBS **/
  %global numobs;
  DATA _NULL_;
    IF 0 THEN SET &DSNAME
      NOBS=NUMOBS;
    CALL SYMPUT('NUMOBS' ,
      PUT(NUMOBS , BEST.));
  STOP;
  RUN;
%MEND EMPTYYN;
```

```
%emptyyn( work.x);
  %let Xobs = &numobs;

%macro assnvars;
  data _null_;
    %do i = 1 %to &Xobs;
      recdno = &i;
      set x point=recdno;
      %global ds&i ;
      call symput("ds&i", dataset);
    %end;
  stop;
  run;
%mend assnvars;

%assnvars;

%macro putvars( nobs );
  %do i = 1 %to &nobs ;
    &&ds&i
  %end;
%mend putvars;

%put %putvars( &Xobs ) ;

data combine;
  set %putvars( &Xobs );
run;

/** end of tip 00146 **/
```

Hyperlinks of Interest

September 24-26, the NorthEast SAS Users Group (NESUG) conference will be held in Philadelphia, Pennsylvania. It offers an opening session at the Franklin Institute Science Museum and nine section offerings – Hands-On Workshops, Pharmaceuticals, Beginning and Advanced Tutorials, Application Development, SAS Solutions Track, Coder's Corner, Internet/Intranets and the Web, Posters and Statistics. Find more information about NESUG 2000 at:

<http://www.nesug.org/2000>

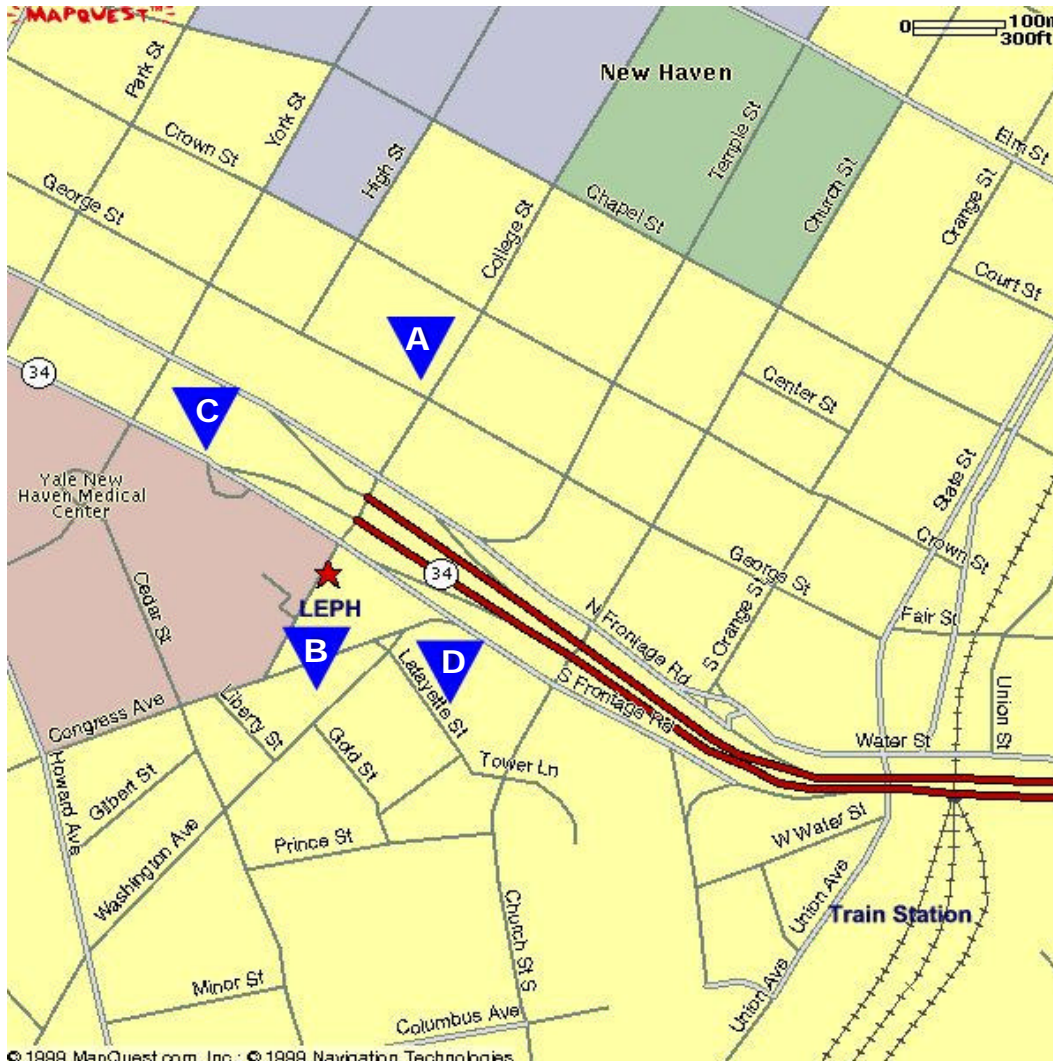
Catch the wave by attending SUGI 26, to be held April 22-25, 2001 in Long Beach, California. Find more information about SUGI 26 at:

<http://www.sas.com/usergroups/sugi/sugi26/>

Last, a variety of SAS information and links can be found at:

<http://www.sasconsig.com/>

**Directions to August 17, 2000 HASUG Meeting to be held at
Laboratory of Epidemiology and Public Health
Yale University, New Haven, Connecticut**



From South on Merritt Parkway, take Exit 57 onto Route 34 East toward New Haven. Turn right at Ella Grasso Blvd and left on So. Frontage Road. Stay on South Frontage to College Street. Turn right on College to LEPH (corner bldg)

From North on Wilbur Cross Parkway, take Exit 61. Go right on Whitney Avenue which eventually becomes Temple St. Continue to end and turn right on North Frontage Road. Get in left lane and Turn Left on College Street. (1st light). Pass one light and LEPH is corner tall beige building on your right.

Please note that on-street parking near the meeting location is not recommended due to vigilant parking enforcement. Please carpool if possible and use one of the following parking lots

(A)PROPARK, corner of College and George Street, \$7.00 a day.

Take Exit 1 off Route 34 West Connector. Go straight to Church Street. Turn right on Church then left on Crown Street. Turn left at College Street (2nd light). PROPARK is on the right before George Street.

(B)PROPARK, College Street across from LEPH, \$2.00 per hour.

Take Exit 2 off Route 34 West Connector. Go left at light onto College Street. Triangular shaped on left just past LEPH.

(C)Air Rights Garage (at Exit 3 of Route 34 West Connector) \$2.00 hour.

At Exit 3 take first left up ramp directly into garage.

(D)Doctors Building Parking, Lafayette Street between Church Street and Washington Avenue, \$1.00 per hour.

Take EXIT 1 off Route 34W connector. Go straight to Church Street. Turn left on Church Street. and Right on Lafayette Street. Doctor's Building parking lot is first driveway on right.