Boston Area SAS Users Group Meeting Announcement

Wednesday, January 11, 1989, 9:00-11:30 AM

Mitre Corporation

Building "A", Burlington Road (Rte 62), Bedford MA

Mitre is located at the junction of routes 3 and 62. From around Boston, take route 128 to the Burlington Mall area and proceed north on route 3 until the first exit, route 62. At the end of the ramp, go right on 62. Mitre is on the immediate left. Upon entering their complex, bear right to visitor parking, then proceed to the Building A lobby.

Mitre is a secure area. To expedite your entrance you should give at least one week notice to Loretta Dunn on (617) 271-7866. Foreign-born nationals should state this fact to Loretta.

Admission is free to first-time attendees. Dues for 1989 are payable now. Individual annual membership is $16 (or $2/meeting). Corporate annual membership dues are $60.

Boston Area SAS Users Group (BASUG)

P O Box 253, Boston MA 02117

(617) 572-6533

9:00-9:15	Coffee, Pastry / General Announcements
9:15-10:15	An Introduction to SAS/IML Bob Efird *Independent Consultant*

BASUG's own resident expert on IML will talk about the SAS Interactive Matrix Language facility for advanced mathematical, engineering, and statistical procedures.

10:15-10:30	Break
10:30-11:30	Learning Proc Tabulate Bob Virgile *Independent Consultant*

A reprise of Bob's excellent NESUG '88 presentation concerning the "right" approach to learning this beautiful-but-deadly SAS reporting procedure.

Subsequent Meetings:

February 8 at a site TBD.

March 8 at a site TBD.

No April meeting due to SUGI at San Fran.

May 10, 8:30 AM at John Hancock, Boston MA.

BOSTON AREA SAS USERS GROUP

PO Box 253 Boston MA 02117

Wendell Refior, Chairperson
(508) 799-4441

Alan Dickson, Treasurer
(508) 799-4441

DATE: January 27, 1989

BASUG News

NESUG '89 Conference Announced

The NorthEast SAS Users Group (NESUG), an association of local groups between Washington and Boston (including our own), has made final plans for their second annual users conference. It will be held from Sunday, October 29 through Wednesday, November 1, 1989 at the Crowne Plaza Hotel, Rockville, Maryland. The site is conveniently located on the Metro subway line from Washington DC. Admission will be available daily or for the entire conference.

The only complaint we kept hearing from the 600+ attendees at our first conference at Pace University in New York last October was that it wasn't big enough. This year, NESUG moves to a large hotel with a formal Sunday night opening session by the SAS Institute, followed by two days of talks by your favorite speakers from the region, ORI, and SAS. There will be vendor displays, round-table luncheons, and evening BOFs: all the benefits of SUGI just a shuttle flight away. Further details will follow.

BASUG Member List Update

Our mailing list has swollen to almost 200 souls. In an effort to hold the line on mailing costs, this April we shall purge the list of people we haven't been hearing from. Please ensure that your dues are paid up before then if you wish to remain on the list. Individual membership is a measly $2 per meeting; $16 per year. An entire corporation may join for $60 per year. Call us if you have any questions.

Boston Area SAS Users Group Meeting Announcement

Wednesday, February 8, 1989, 8:30-11:30 AM

GTE Communications Systems

Building #8, 156 "B" Street, Needham Heights MA

(See map on reverse side) The entrance and parking lot are on the left side of Building #8 as you approach on "B" Street.

Please arrive early since parking is at a premium. There will be a section reserved for approximately 20 vehicles. On-street parking is available, but it goes quickly.

GTE is a secure area. To expedite your entrance please give at least two days notice to Paul Babin on (617) 455-5841.

8:30-9:00 Coffee, Pastry, Announcements

9:00-10:00 SAS Coding Techniques: A Real-World Example
Alan Dickson
Paul Revere Insurance

An example of SAS data manipulation in solving ah actual problem: unobtrusively changing the values of two non-consecutive observations in a SAS dataset. Discussion and any suggested improvements follow.

10:00-10:15 Break

10:15-10:30 NESUG Conference News

An update on plans for this year's regional SAS users conference in Washington DC, as well as some early details about the 1990 edition (to be held in a city whose name appears at the top of this page).

10:30-11:30 An Introduction to SAS Macros
Tom Marx
MSSR Associates

For beginners, an introduction to what macros are about. Brief examples show how to implement macro-based SAS programs.

Admission is free to first-time attendees. Dues for 1989 are payable now. Individual annual membership is $16 (or $2/meeting). Corporate annual membership dues are $60.

Boston Area SAS Users Group (BASUG)

P O Box 253, Boston MA 02117

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Subsequent Meetings:

March 8 at a site TBD.

No April meeting due to SUGI at San Fran.

May 10, 8:30 AM at John Hancock, Boston MA.

June 14 at a site TBD.

Boston Area SAS Users Group Meeting Announcement

Wednesday, March 8, 1989, 8:30-11:30 AM

Boston Edison Company

Room 29-N of the Prudential Building, 29th Floor, 800 Boylston St, Boston MA

The Pru can be reached using public transportation via any branch of the Green Line (Pru, Copley, or Auditorium stops). If you drive, recommended parking is at the Cheri garage on Dalton Street (across from the Sheraton-Boston main entrance). Call Wendell Refior for further directions (508-799-4441 x5718).

8:30-9:00	Coffee, Pastry
9:00-9:15	General Announcements
9:15-10:15	Strategies for Processing Large Datasets Yevgenia MacKiernan *Health Data Institute*

Be among the first to hear Yevgenia's invited SUGI-14 tutorial on overall resource management, comparing the effects of some alternative DATA step and PROC step strategies on resource use.

10:15-10:30	Break
10:30-11:30	Roundtable Discussion: Data Cleaning

Learn others' (and share your) tips and techniques on what to do with that dirty data. Topics include ways of recognizing invalid values, unallowable answers, measurements outside of range, unlikely patterns of answers, and how to edit and validate SAS datasets prior to reporting and statistical analysis.

Admission is free to first-time attendees. Dues for 1989 are payable now. Individual annual membership is $16 (or $2/meeting). Corporate annual membership dues are $60.

Subsequent Meetings:

No April meeting due to SUGI at San Fran.

May 10, 8:30 AM at John Hancock, Boston MA.

June 14, 8:30 AM at MBTA HQ, Park Sq., Boston MA.

Sept 13 at a site TBD.

Boston Area SAS Users Group (BASUG)

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SAS News Releases:

The following announcements have been received from The Institute since the last BASUG meeting. Further details will be available at the May meeting.

- SAS/RTERM Software enhanced, delivering increased graphics and communications support
- SAS/OR Software offered on the PC, bringing management science to the desktop
- New line of CBT courses offered for the PC
- New release of the SAS System for Prime and Data General users is available, offering increased functionality and two new components
- SAS/C Compiler enhanced for mainframe systems

BASUG Members Win Top Honors:

For the second year in a row, a BASUG member paper has been voted the best in a section at SUGI. Following Fred Pratter's honor last year in Orlando, Christian Vye (U of RI) and Craig Dickstein (BCBS of NH) were voted the best in the Econometrics, Operations Research, and Quality Control section at SUGI 14 for their contributed paper "*SAS Macros and a SAS/AF Menu System for Reading COMPUSTAT Files.*" Congratulations.

NESUG '89 Takes Shape:

If you were unable to make it to San Francisco, an opportunity to attend presentations on many of the same topics (by some of the same individuals) is afforded by the regional NESUG conference. The second annual NorthEast SAS Users Group spectacular will take place in Washington DC for two full days, October 30 and 31, with an opening session and mixer the previous evening. Registration materials will be mailed by both BASUG and the SAS Institute shortly. There will be several presentations on each of the following topics: beginning tutorials (macros, arrays, efficiency), advanced tutorials, statistics, graphics, SAS PC, SAS/AF, SAS Version 6, training, consulting, capacity planning, the insurance industry, and the health industry. We shall be looking for your input regarding special interest group subjects. Hope you can attend.

Local SAS Training Available:

Two local classes have been announced that have come to the attention of the BASUG steering committee. If you hear of others, please let us know so that we may pass along the information to other members.

- May 22-23 - Intermediate SAS, Worcester MA
- May 30-June 1 - SAS Programming Techniques, Boston MA

For further details, call (617) 648-1347.

SUGI 14 News:

Notes from the Opening Session, April 9, 7:00 PM, San Francisco Civic Auditorium, featuring Rich LaValley (conference chair), Kathy Council (SAS VP, Publications), Mason Nichols (SAS Director, Tech Support), Jim Goodnight (SAS President)

The opening session is a production of the SAS Institute's marketing and communications people. It is the traditional launching pad for announcing new products and versions of the SAS System. This was the 14th annual SAS international conference. There were 3900+ attendees. 350 papers were presented in two-and-one-half days.

The remarks by Council concerned the customer support actions taken during the past year by SAS: opening regional sales offices in Austin, Washington, LA, Chicago, and Toronto, expanding telephone support coverage, increasing training opportunities.

Nichols retold the tale of the Institute's decision, five years ago, to solve the portability problem across different operating systems by completely rewriting the SAS System in C, a process that will be finished this summer. The impending version 6.06 will be the first to be available and identical across all hardware platforms (OS/MVS, VM/CMS, VMS, PRIMOS, MS-DOS, UNIX..).

Goodnight, while unable to announce the availability of anything new at a definite time, told the group that mainframe version 6.06 will go to QC in July. Release to installations was semi-promised for first quarter 1990.

On a PC, 6.06 will reside in the native windowing system of the platform on which it is installed (XWindows, Decwindows, Presentation Manager..) or SAS windows if none others are available. SAS' windows will feature optional command scroll bars in place of COMMAND line instructions. Other features of 6.06 will be a new logistic regression procedure and PROC SQL.

Goodnight gave the group a peek at some long-range products being tested at SAS for inclusion in future releases:

- PROC REPORT, a QMF-like, point-and-shoot utility that allows changes to a completed SAS report (appearance of columns, headings, grouping of rows, calculated subtotals, ...) without regenerating the data.
- PROC PUBLISH, desktop publishing integration of graphs and text
- NEO-VISUALS, the Canadian company SAS bought last year, that sells a standalone 3-D graphics system, someday to be integrated with the SAS System.
- Artificial Intelligence (EQL), English query language

Boston Area SAS Users Group Meeting Announcement

Wednesday, May 10, 1989, 8:30-11:45 AM

John Hancock Conference Center

Room 402, Trinity Place, Boston MA

By car: from the west use the Mass Pike to Exit 22 (Copley Square), follow Stuart Street to the garage on Clarendon. From the north take the Expressway (I-93) to Storrow Drive, Copley exit, right on Beacon, left on Clarendon, follow to garage. From the south, take the Expressway to Chinatown/Downtown exit, left on Kneeland Street to Stuart Street.

By public transportation: from the west take the Green Line to Copley; from other points connect to the Orange Line and exit at Back Bay. Call Mike Murphy for further information (617-572-6533).

8:30-9:00 **Coffee, Pastry**

9:00-9:20 **SAS User News II**

A new edition of SAS' video newsmagazine for users groups. It features product developments (CPE, VAX CPE), new SAS PC modules, and technical tips from the estimable Dave Brumitt.

Admission is free to first-time attendees. Individual annual membership is $16 (or $2/meeting). Corporate annual membership dues are $60.

Boston Area SAS Users Group (BASUG)

P O Box 253, Boston MA 02117

(617) 572-6533

9:20-9:40 **General Announcements**

9:40-10:30 **Intro to SAS Application Facility (AF)**
Marge Scerbo
University of Maryland

For beginners: how to build your first SAS/AF application. Marge will later demonstrate a small, working AF system in use at UM's Information Resources Management.

10:30-10:45 **Break**

10:45-11:00 **Career Concerns**
Gordon Nyquist
Silver Incorporated

BASUG member and local employment counselor will give you a few pointers about your career development in the computer field.

11:00-11:45 **Neat Things You Can do with SAS**
Frederick Pratter
Abt Associates Inc.

What can you do with SAS that you can't do with other programming applications? Fred will reprise his invited SUGI 14 paper featuring examples of macros and %INCLUDEs that make your SAS program even more intelligent.

Subsequent Meetings:

June 14, 8:30 AM at MBTA HQ, Park Sq., Boston MA.

Sept 13 at a site TBD.

Boston Area SAS Users Group Meeting Announcement

Wednesday, June 14, 1989, 8:30-11:15 AM

Mass Bay Transportation Authority

Ten Park Plaza (Charles and Stuart Streets), Boston MA

Please RSVP with Wendell Refior by Noon, June 9 (508-799-4441 x5718). If you are appropriately taking the "T" to Park Plaza, use the Green Line (Boylston/Theatre District stop) or the Orange Line (NE Medical Center stop).

8:30-9:00 **Coffee, Pastry, Networking**

9:00-9:15 **Business Meeting**
Wendell Refior
Paul Revere Insurance
General announcements, NESUG Conference update.

9:15-10:00 **Custom Report Writing**
Craig Dickstein
Blue Cross Blue Shield of NH
A beginning tutorial (and invited paper at SUGI 14) on a variety of methods for generating customized production reports with DATA step techniques. FILE and PUT statements are discussed in detail, and the use of system options, functions, and macros are demonstrated to control report appearance.

10:00-10:20 **Break**

10:20-10:40 **SAS Training**
Craig Dickstein
From BCBS's DP guru, a course outline for a five-day SAS class, including SAS/Graph.

10:40-11:15 **SAS Macros and a SAS/AF Menu System for Reading COMPUSTAT Files**
Christian Vye
University of Rhode Island
This award-winning SUGI 14 paper describes how the use of Standard & Poor's Compustat financial database was facilitated at URI for researchers and undergrads. It features a macro-based system (under OS) to retrieve data from tapes, and a SAS/AF menu system using the macros to submit a batch job to the mainframe.

Boston Area SAS Users Group (BASUG)
P O Box 253, Boston MA 02117

Chairperson: Wendell Refior (508) 799-4441 ext 5718

Treasurer: Alan Dickson (508) 799-4441 ext 5936

Secretary: Bob Virgile (617) 648-1347

Admission is free to first-time attendees. Individual annual membership is $16 (or $2/meeting). Corporate annual membership dues are $60.

Subsequent Meetings:

We'll see you in September.

Set BASUG;

A Publication of the Boston Area SAS® Users Group (BASUG) August, 1989

What's a BASUG?

The Boston Area SAS® Users Group was formed in 1983 to provide a forum for the exchange of information and the promotion of new ideas concerning The SAS System and related products, to assist members in developing SAS skills, to inform the Institute of products and services our members request, and to supply other information that might help advance the careers of our members.

Eight general group meetings are held each year in member companies' facilities around greater Boston. We meet in the morning of the second Wednesday of a month. A typical agenda consists of two scheduled presentations by guest speakers (on beginning to intermediate-level subjects), problem-solving, coffee-drinking, and meeting your peers. Speakers are usually local users and DP professionals, in addition to guest speakers from the Hartford/New York City/Washington axis provided through the regional Northeast SAS Users Group (NESUG). The BASUG steering committee arranges each meeting and dues-paying members are notified in advance.

Any individual may attend one meeting free of charge, but must become a member to attend additional meetings. Annual dues are $16 per member (or $2/meeting), payable in January, to finance mailings, refreshments at meetings, and speaker fees.

If you are new to us, just drop in on a meeting unannounced to see if you like it. Address membership requests and other correspondence to:

B A S U G
PO Box 253
Boston MA 02117

Or call one of us during work hours:

BASUG Steering Committee:

Wendell Refior	Chairperson	(508) 799-4441
Bob Virgile	Secretary	(617) 648-1347
Alan Dickson	Treasurer	(508) 799-4441
Nancy Blood		(617) 329-4500
Hal German		(617) 466-2290
Stacy Gill		(617) 329-4500
Mike Keohan		(617) 956-3665
Tom Marx		(617) 876-0962
Mike Murphy		(617) 572-6533

The Boston SAS Users Bulletin Board

There is no need to wait for a monthly meeting or an annual conference to communicate with SAS users at other companies. We are all just a phone call away (on your modem and PC / ASCII terminal). NESUG's local electronic bulletin board for SAS users is free to use. Join in. Contribute problems, solutions, code you're proud of, bugs you're ashamed of, or just read what's going on among other users.

NUMBER: (508) 263-1499
HOURS: Every Monday and Tuesday, 7:30 AM to 7:30 PM.
MODEM: 300, 1200, or 2400 BAUD
PARMS: 8, N, 1
PROBLEMS: Call the SYSOP, Mike Keohan, (617) 956-3665

FEATURES:

- SAS code and macros, REXX code, and CLISTS (contributions welcome)
- Current SAS-L messages to display or download
- SAS, DOS, etc. programs and utilities
- On-line tips on using SAS
- Send/receive messages with other local users

Contact Mike Keohan when you first dial in to increase your time and privileges. Then you can download over 70 virus-free files and programs.

Calendar

Boston Computer Society General Meeting (w/ Stewart Alsop). The New England Hall (Boston), Aug 23, 7:30 PM - Contact: BCS, (617) 367-8080

Downsizing Mainframe Systems: Coping with Decentralized Systems. Boston, Sept 7-8 - Contact: Digital Consulting, 6 Windsor St, Andover MA 01810

BASUG General Meeting. Sept 13 - Contact: Yevgenia MacKiernan, (617) 863-2000 x3465

BASUG General Meeting. Oct 11 - Contact: Tom Marx, (617) 876-0962

Northeast SAS Users Group Conference. Rockville MD, Oct 29-31 - Contact: Dave Septoff, 1700 Rockville Pike, Rockville MD 20852, (301) 881-8840

BASUG General Meeting. Nov 8 - Contact: Bob Virgile, (617) 648-1347

SAS Tips: Multi-Dimensional Arrays

by Tom Marx, MSSR Associates

During the course of Bob Virgile's excellent recent BASUG talk, *Introduction to Arrays,* he mentioned that explicitly subscripted arrays cannot yet handle more than one subscript. While implicitly subscripted arrays do support more than one subscript, the setup seems clumsy and one must work and think not only with arrays, but with arrays of arrays.

Two, three, and more dimensions can be handled easily with explicit subscripts despite the restriction to a single index dimension. To each pair of numbers that index an element in a two-dimensional array, we can assign a single number that indexes that element in a one-dimensional array. The technique relies on a famous discovery in mathematics where it is proved that every point of an infinite plane can be assigned to a point on an infinite line.

In the example program to the right, the assignment works as follows:

Two Dimensions	One Dimension
1,1	1
1,2	2
1,3	3
2,1	4
2,2	5
2,3	6

In the program, the letter j indexes the columns and goes from 1 through 3. The letter i indexes the rows, goes from 0 to 1, and is always multiplied by 3. When i = 0, the product of 3 * 0 is 0, and j locates a first row element. When i = 1, the product of 3 * 1 is 3 and j locates a second row element.

Other features of the program that may be of interest are the use of logical expressions to compute subscripts and the production of the report in the data step.

I was asked to write a similar program for the U.S. Health Care Financing Administration to analyze the cost of hospital claims broken out by two categories of sex and three of age. Since real dollars were charged for CPU time and we were processing five million records, minimizing data passes was desirable. That is why I wrote a report this way instead of invoking PROC MEANS.

If you have any questions or comments, I may be reached at (617) 876-0962.

/* How to Turn a Plane into a Line */

```
FILENAME IN 'whatever';

PROC FORMAT;
     /* used to label report */
VALUE SEXAGE
     1 = 'female thru 18'
     2 = 'female 19 thru 64'
     3 = 'female 65 and up'
     4 = 'male thru 18'
     5 = 'male 19 thru 64'
     6 = 'male 65 and up';
RUN;

DATA _NULL_;
INFILE IN END = LAST_OBS;
INPUT SEX $ AGE AMOUNT;

/* define 2 by 3 array with two categories of sex and three of age */
ARRAY CLM_AMT {*}
     FYOUNG FMIDDLE FOLD
     MYOUNG MMIDDLE MOLD;
RETAIN FYOUNG -- MOLD 0;

/* i indexes sex on rows, valid values 0 or 1, logical expressions, sex = 'f'
and sex = 'm', resolve to 0 if false and 1 if true */
I = 1 * ( SEX = 'F' ) + 2 * ( SEX = 'M' ) - 1;

/* j indexes age on the columns, valid values 1,2,3, the three mutually
exclusive logical expressions involving age resolve to 0 if false and to 1 if
true */
J = 1 * ( 0 < = AGE < = 18 ) + 2 * ( 19 < = AGE < = 64 )
     + 3 * ( 65 < = AGE < = 120 );

/* if subscripts are valid, 3*i + j finds correct array element. */
IF ( 0 < = I < = 1 ) AND ( 1 < = J < = 3 )
     THEN CLM_AMT{3*I + J} + AMOUNT;

     /* dump bad subscripts */
     ELSE DO;
     PUT 'bad subscript: ' I= SEX= J= AGE=;
     /* the most useful statement in SAS debugging */
     PUT _ALL_ /;
     END;

/* print report after last observation */
IF LAST_OBS THEN DO;
     FILE PRINT PS=55;
     TITLE 'Claim Totals by Age and Sex';
     DO I = 1 TO DIM ( CLM_AMT );
     PUT @48 I SEXAGE. @68 CLM_AMT{I} DOLLAR21.;
     TOTAL + CLM_AMT{I};
     END;
     PUT / @48 'TOTAL' @68 TOTAL DOLLAR21.;
     END;
RUN;
```

SAS Tips: Character Functions

by Akos Felsovalyi

In this article, we will see some aspects of the character functions of the SAS System. The various character functions are described in Chapter 6, "SAS Functions," of the *SAS User's Guide: Basics, Version 5* (pp. 229-283). Interestingly, that chapter does not introduce all the available functions; a sharp reader can find many other functions scattered around in this and other manuals (for example, functions LABEL and VNAME on pp. 59-60 in the *SAS User's Guide).* Consult Robert A. Frank's paper entitled "*Functions and Subroutines Not Documented in the SAS User's Guide*" in the *SUGI10 Proceedings* (1985) to learn about all those functions.

We know that the character variables are very useful to save storage. For example, if we have a binary variable, we should place it into $1 SAS variable. However, sometimes they take up more space compared to a numeric variable. For example, if we have an ID variable of 16 digits, a regular numeric variable (with length of eight) takes half the space of a $16 character variable. However, it is not that simple, since a numeric variable takes more time to read/write because it requires a double precision conversion. I have found the storage problem more serious than the CPU time, and I am usually not concerned about the latter.

The user of character variables and character functions must be very careful. The greatest danger is the length of the character variable. A character variable can obtain its length in any of the following ways:

- LENGTH statement (e.g. LENGTH NAME $30. ;)
- INPUT statement (e.g. INPUT @10 NAME $30. ;)
- char function (e.g. NAME = RIGHT (NAME1) ;)

The first two are pretty straightforward, but the last one hides much danger. Let us look at all character functions and how they set the length of the resulting variable. The basic statement is:

VAR2 = FUNCTION (VAR1) ; or VAR2 = VAR1 ;

where FUNCTION can be any character function and VAR1 is a character variable. The following chart shows the resulting type and length of the variable on the left hand side (VAR2), set by the function by default:

FUNCTION	TYPE	LENGTH
INDEX, INDEXC LENGTH VERIFY	NUM	8
SUBSTR TRIM assignment statement	CHAR	length of var1
COLLATE COMPRESS LEFT REPEAT REVERSE RIGHT, SCAN TRANSLATE UPCASE	CHAR	200

The following examples illustrate some of the dangers. In all cases, the solution to the problem is to preset the length of the resultant variable with a LENGTH statement as noted. Remember, the LENGTH statement must precede the creation of the variable.

Example 1:

```
DATA A ;
INPUT $10 NAME1 $30. ;
NAME = RIGHT (NAME1) ;
```

The length of the variable NAME will be 200 bytes and it might cause an enormous output dataset.

```
SOLUTION: LENGTH NAME $ 30 ;
```

Example 2:

```
DATA A (KEEP = WORD1-WORD5 ) ;
SET A (KEEP = TEXT) ;
 /* text contains 5 one-character words, A, B, C, D, E */
WORD1 = SCAN (TEXT,1) ;
WORD2 = SCAN (TEXT,2) ;
WORD3 = SCAN (TEXT,3) ;
WORD4 = SCAN (TEXT,4) ;
WORD5 = SCAN (TEXT,5) ;
```

The same problem occurs: the output dataset will have five 200-character long variables. That is, the size of the output dataset will increase 200 times (the record length will be 1000 bytes instead of the expected 5 bytes.)

```
SOLUTION: LENGTH WORD1-WORD5 $ 1 ;
```

Example 3:

```
DATA A ;
SET B ;
CODE = 'N/A' ;
IF A = 1 AND B = 1 THEN CODE = 'A&B=1' ;
IF A = 2 AND B = 2 THEN CODE = 'A&B=2' ;
```

Variable CODE will have only two different values: 'N/A' and 'A&B', because the length of CODE is determined by the statement in which the variable is first referenced (CODE = 'N/A' which causes CODE to have a length of three).

```
SOLUTION: LENGTH CODE $ 5 ;
```

This article first appeared in PROC NYASUG, the proceedings of the New York Area SAS Users Group

Boston Area SAS® Users Group Meeting Announcement

Featuring a "SAS Under OS/2" Demo by SAS Institute Inc

Wednesday, September 13, 1989, 8:30-11:30 AM

Harvard School of Public Health

Kresge Building, Room 502

677 Huntington Avenue, Boston MA

Join BASUG for a morning with The SAS Institute and other DP professionals at Harvard (near the Museum of Fine Arts). Admission is free. Advance notice of attendance is necessary to secure visitor passes. Please RSVP with Jim Efird by Thursday, September 7 at (617) 732-2292.

Directions

By public transportation, take a Green Line "E" train. The Kresge Building is equidistant from the Longwood Medical Area and Brigham Circle stops.

By car, from the west, take the Mass Pike to the Prudential Center exit, proceed straight on Huntington for less than a mile; from north or south, take I-93 to Storrow Drive to the Kenmore Square exit, go right on Beacon, left on Brookline Ave, left on Longwood Ave.

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Secretary: Bob Virgile (617) 648-1347

Treasurer: Alan Dickson (508) 799-4441 ext 5936

A limited number of inexpensive visitor parking spaces are reserved for BASUG attendees in the lot behind Vanderbilt Hall (corner of Longwood and Louis Pasteur, see map). More abundant (less cheap) spaces are across the street at Children's Hospital, 300 Longwood Ave.

8:30-9:00 **Coffee, Pastry, Socializing**

9:00-9:10 **Welcome, Announcements**

9:10-10:10 **The SAS System Under OS/2 and Version 6.06**
Nancy Goodling
SAS Institute Inc

Nancy is flying all the way up from NC to preview for us The SAS System under OS/2. There will be a demonstration of their software running under Presentation Manager as well as a look at new features of Version 6.06.

10:10-10:30 **Break**

10:30-11:30 **The Micro-to-Host Link**
Igor Choodnovskiy and Panel

Do you know how to use SAS software on a PC and mainframe simultaneously? What is the Micro-to-Host link, what does it do, how is it useful? Igor will show us how to set up a micro to mainframe link, and our panel will discuss system specifics, applications, and experiences.

BASUG Meeting Announcement

Wednesday, October 11, 1989, from 8:30 to 11:30 a.m.
"The Library" at Gardner House, across from Children's Hospital
300 Longwood Avenue, Boston, MA

Directions

By public transportation, take a Green Line "D" or "E" train. Both have a stop in the Longwood area.

By car from the west, take Mass Pike to the Prudential Center exit, and proceed straight on Huntington Avenue (route 9). In less than a mile, you will hit Longwood Avenue.

By car from the north or south, take I-93 to Storrow Drive to the Kenmore Square exit. Take a right onto Beacon Street, then stay as much to the left hand side as is possible (tricky if you have not done it before). Take a left onto Brookline Avenue, which takes you to Longwood Avenue. Left onto Longwood.

Parking is available at Children's Hospital at reasonable rates, considering you are in Boston. By my recollection, it would be about $6 for the meeting.

The Agenda

The meeting must end at 11:15 sharp. The rest of the schedule is built around that fact.

8:30 - 8:45 Coffee, Pastry, Socializing

8:45 - 8:55 Welcome, Announcements

8:55 - 9:55 Using Arrays to Update a Master File
Tom Marx will talk about using arrays to enhance the scope, power, and accuracy of your SAS programs. The actual example will use arrays to update a master file using a transaction file.

9:55 - 10:15 Break

10:15 - 11:15 Introduction to CPE Using the Mainframe and the PC
Bruce Green will introduce methods to analyze, report, and improve upon computer performance, using SAS/MXG on the mainframe in combination with SAS and SAS/GRAPH on the personal computer.

Note that the Gardner House is directly across from Children's Hospital. If you have trouble finding it, you can always ask at the hospital and they will be happy to direct you.

Please start thinking about serving (or volunteering someone else to serve) as an officer of BASUG next year. Feel free to call any of the current officers with questions or suggestions:

Chairperson: Wendell Refior (508) 799-4441 x5718

Secretary: Bob Virgile (617) 648-1347

Treasurer: Alan Dickson (508) 799-4441 x5936

Boston Area SAS® Users Group Meeting Announcement

Wednesday, November 15, 1989, 8:30-11:15 AM

Blue Cross of Massachusetts

100 Summer Street, Boston MA

By public transportation, 100 Summer is a short walk from the Red Line's South Station stop (walk up Summer across the Expressway) or the Orange Line's Downtown Crossing stop (walk down Summer between Jordan's and Filene's). Blue Cross is in the building with the "lollipop" structure at the curb. Enter the lobby and proceed up the escalator to the second floor. Signs will be posted. Pre-clearance is not required. Further questions? Call Mike Keohan at (617) 956-3665.

8:30-9:00 **Coffee, Pastry, Networking**

9:00-10:00 **User Control of SAS Code Under OS/MVS**
Stacy Gill
MIB Incorporated

A look at techniques that enhance a user's interface with existing SAS programs, both batch and interactive. Includes passing parameters into SAS code from JCL, and developing CLISTs for users that invoke conditionally-executed SAS applications.

10:00-10:15 **More Coffee**

10:15-10:35 **Business Meeting**
Alan Dickson
Paul Revere Ins. Group

A few by-laws changes have been suggested regarding dues, maximum number of mailings, etc. A group vote will be taken. Also, nomination of 1990 officers will take place (absence from this meeting is frequently the first qualification for being nominated).

10:35-11:15 **NESUG '89 Recap - Group Q&A**
Panel Discussion

A report on last month's highly successful NorthEast SAS Conference. The 950 attendees heard from The SAS Institute president and 46 invited speakers (many of them BASUG members). What was worthwhile? What is The Institute up to? Our panel members reveal all. Group Q&A session follows. Bring your questions and problems.

Boston Area SAS® Users Group (BASUG)
P O Box 253, Boston MA 02117

Chairperson: Wendell Refior (508) 799-4441 ext 5718

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BASUG Meeting Announcement

Wednesday, December 13, 1989, from 8:30 to 11:45 a.m.
Arthur D. Little, Inc., Building #25 Auditorium
20 Acorn Park, Cambridge, MA

Directions

Acorn Park is directly off Route 2. You must be traveling East. The exit is just before the Alewife stop on the T. See the map for details.

*** PREREGISTRATION IS REQUIRED!! *** Call Julie Hu at 864-5770 x3450, if you would like to attend this meeting.

The Agenda

In addition to two presentations, there will be a business meeting plus a showing of the latest Video News from SAS Institute.

8:30 - 8:45 Coffee, Pastry, Socializing

8:45 - 8:50 Welcome, Announcements

8:50 - 9:10 SAS Video News
The latest announcements and developments concerning SAS software -- in videotape form as released by SAS Institute.

9:10 - 10:10 Ragged Matrices
Frederick Pratter presents another high-tech solution to a complex problem. Reading lengthy arrays in SAS is time consuming and expensive, but often it is the only alternative to doing a lot of I/O. There is a handy technique for segmenting arrays that can significantly reduce the number of array elements that need to be scanned in, for example, an ID table lookup. This presentation shows how you too can use offsets to save time and money.

10:10 - 10:30 Break

10:30 - 10:45 Business Meeting
Highlights on the agenda: election of officers and recruitment of meeting coordinators for 1990.

10:45 - 11:45 Overcoming the Limitations of PROC FORMAT
Developed by Bob Virgile, presented by Tom Marx. PROC FORMAT is a great tool for table-lookup. However it also possesses certain limitations -- the look-up may be based on no more than 16 characters, and returns a single character string of not more than 40 characters. This paper illustrates programming techniques to get around those limitations.

The attached sheet contains the map to Arthur D. Little, Inc., and provides more detail on the business meetings: issues discussed and voted on at the 11/89 meeting, as well as issues to be presented at the 12/89 meeting.

BASUG Business

Issues Voted on at the November 1989 Business Meeting

Three major issues were considered at the last business meeting -- nomination of officers for 1990, mailings of the meeting announcements, and BASUG dues. These are the results.

Nomination of Officers

The following nominations were made:

President: Jim Efird

Treasurer: Alan Dickson

Secretary: Wendell Refior

Mailings of Meeting Announcements

Our mailing list has grown over the years. So has the work and expense of getting the mailings out. As a result, the following measures were voted on at the last meeting:

1. Individuals who don't pay dues will be removed from the mailing list.
2. There will be a limit to the number of announcements mailed to corporate members. Each corporate member will receive up to 6 copies of the meeting announcement. If more are needed, it will be up to someone at the member site to duplicate and distribute copies. If a corporate member has more than one site, each site may be mailed up to 3 copies. In that case, the total may exceed 6 copies.

Dues

Annual dues will not be increased. In addition, members joining after June 30 may pay $8 for the second half of the year.

In order to encourage payment of annual dues, and in order to relieve our treasurer of the need to carry around a lot of dollar bills to make change, the per-meeting dues will increase to $5 per meeting. The first meeting is still free (one free meeting per individual per lifetime).

If you have been attending and paying per-meeting dues, and wish to convert to annual membership, the following rules apply: if you convert during the first half of the year, $4 of every $5 paid during that year will be applied toward your $16 annual dues. If you convert during the second half of the year, $4 of every $5 paid after June 30 will be applied toward your $8 second-half dues.

Issues for the December 1989 Meeting

We will consider additional nominations for officers, and will vote. See the nominations above, made at the November meeting.

In addition, we will be looking for meeting coordinators for 1990. Any help you can give -- providing a meeting site, presenting a talk, or coordinating an upcoming meeting -- is always appreciated.