

# SAS SOFTWARE INTRODUCTION FROM A MENU-DRIVEN SYSTEM

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The latest statistics show that over 65% of all major corporations have implemented Information Centers in one form or another. By the end of 1984, it is estimated that this figure will rise to over 85%. With this in mind, it is becoming increasingly important to recognize the many uses of SAS and how they relate to the Information Resource Center.

Traditional methods of teaching and using SAS must be modified when in the IRC environment. When using SAS the non-data processing user does not want to be bothered with JCL, TSO CLIST's or IMS EXEC's.

Because of its versatility and 'user friendliness', SAS has become a widely used reporting language at SDDPC. Also, because of SAS/FScalc and SAS/Graph, many users have learned SAS so they can use the graphics and spreadsheet features.

The IRC staff recognized early that the way SAS had been taught and used would not work. The user who came to the IRC usually came with a pressing problem. They wanted to know how they could take information and process it into their desired results.

Users often had little time in which to learn to use the data processing tools needed (SAS) to solve their problems, and they only wanted to learn enough to solve their particular problem.

In order to solve these problems, the IRC staff, working with the system staff made use of dialog manager, TSO/SPF SAS Interface to produce menus (a check-a-box system). Using these panels, the IRC staff teaches a half day SAS Introduction Course, covering the minimum a user has to learn to be productive.

After taking the SAS Introduction Course, users are encouraged to contact the IRC staff on a one-on-one basis to receive additional help starting their projects in the form of follow-up training. Once a user has taken the SAS Introduction Course, the follow-up training and user projects become easy.

The purpose of this paper is to show that users do not have to be "programmers" to define a dataset, create reports, produce graphics, and modify panel generated SAS code.

## Data Set Definition/Entry

```
*** Select option 1 for SAS ***

SDDPC ----- INFORMATION RESOURCE CENTER PRIMARY MENU -----
SELECT OPTION == 1

                                USERID - IRC5IC1

1 SAS      - SAS DATA DEFINITION, DATA ENTRY, GRAPHS
2 MRCS     - COMPILE/EXECUTE MRCS PROGRAMS
3 SPSS     - STATISTICAL PACKAGE FOR THE SOCIAL SCIENCES
G GBLT50   - GENERAL TSO UTILITIES
M MAIL     - ELECTRONIC MAIL SYSTEM TO OTHER TSO USERS & SDDPC SYSTEMS
T TUTOR    - DISPLAY INFORMATION ABOUT SPF (EDIT/BROWSE)
U USER    - DISPLAY USER SPECIFIC APPLICATION MENU (MAY BE NONE)
X EXIT     - TERMINATE TSO SESSION (LOGOFF)

IF YOU HAVE QUESTIONS, NEED HELP OR MANUALS, PLEASE CALL SDDPC.
TOM HARWOOD (TFH) X5960, KAREN PATTERSON (KCP) X6992,
JANET LIND (JCL) X5977

*** Press Enter to continue ***

*** Select D to define data ***

SDDPC ----- SAS MENU -----
SELECT OPTION == D

                                USERID - IRC5IC1
                                PREFIX - TSOIC1

D SASDATA - SAS DATA DEFINITION AND DATA ENTRY (EDIT)
E SASEXEC - SAS PROGRAM EDIT (SPF) AND EXECUTE IN FOREGROUND OR BATCH
              (ALTERNATIVE TO INTERACTIVE SAS OR SPF EDIT/SUBMIT)
G SASGRAPH - SAS GRAPHS AND REPLAY OF SAS GRAPHS
R SASREPORT - SAS REPORT GENERATION
S SASCALC  - SAS SPREADSHEET
T SAS50   - SAS GENERAL TSO UTILITIES FOR PROGRAMMING
U SASUTIL - SAS UTILITIES
              SAS VARIABLES - ADD, DELETE, RENAME
              SAS DATA SETS - COPY, DISPLAY, RENAME, SORT, PRINT
              SAS LIBRARIES - COPY, CREATE

Z SAS5COPY - COPY LAST PANEL-GENERATED SAS CODE.

*** Press Enter to continue ***
```

Utilities

\*\*\* Enter your new data set name; in this example I chose data \*\*\*  
 \*\*\* set name "DEMO" \*\*\*  
 \*\*\* Enter "C" to define variables. \*\*\*

SDDPC ----- SAS DATA SET DEFINITION -----

ENTER SAS DATA LIBRARY NAME & SAS DATA SET NAME WITHIN THE LIBRARY

SAS DATA DIRECTORY === N Y/N DISPLAY SAS DATA LIBRARY DIRECTORY  
 SAS DATA LIBRARY NAME === SAS.DATA  
 SAS DATA SET NAME === DEMO (8 CHARACTERS MAXIMUM)  
 ACTION === C C - DEFINE VARIABLES AND ENTER DATA  
 E - EDIT OR ADD DATA  
 B - BROWSE DATA  
 M - SCREEN MODIFICATION (CUSTOMIZE SCREEN)

\*\*\* Select U for SAS utilities \*\*\*

SDDPC ----- SAS MENU -----

SELECT OPTION === U USERID - IRC5IC1  
 PREFIX - TSOIC1  
 D SASDATA - SAS DATA DEFINITION AND DATA ENTRY (EDIT)  
 E SASEXEC - SAS PROGRAM EDIT (SPF) AND EXECUTE IN FOREGROUND OR BATCH  
 (ALTERNATIVE TO INTERACTIVE SAS OR SPF EDIT/SUBMIT)  
 G SASGRAPH - SAS GRAPHS AND REPLAY OF SAS GRAPHS  
 R SASREPORT - SAS REPORT GENERATION  
 S SASCALC - SAS SPREADSHEET  
 T SASSTO - SAS GENERAL TSO UTILITIES FOR PROGRAMMING  
 U SASUTIL - SAS UTILITIES  
 SAS VARIABLES - ADD, DELETE, RENAME  
 SAS DATA SETS - COPY, DISPLAY, RENAME, SORT, PRINT  
 SAS LIBRARIES - COPY, CREATE  
 Z SASZCOPY - COPY LAST PANEL-GENERATED SAS CODE.

ENTER SAS SCREEN LIBRARY AND SCREEN NAME  
 IF ACTION = "M" OR ("E" OR "B" USING PREVIOUSLY CUSTOMIZED SCREEN)

SAS SCREEN LIBRARY === SAS.SCREEN  
 SAS SCREEN NAME === (8 CHARACTERS MAXIMUM)

NOTE: THE DEFAULT SAS DATA LIBRARY NAME IS SAS.DATA  
 THE DEFAULT SAS SCREEN LIBRARY NAME IS SAS.SCREEN

PRESS ENTER TO BEGIN DEFINE, PF1 FOR HELP, PF3 TO CANCEL DEFINE

\*\*\* Press Enter to continue \*\*\*

\*\*\* Enter variables and attributes. \*\*\*  
 \*\*\* Answer question. \*\*\*  
 \*\*\* Define formats/informats \*\*\*  
 \*\*\* Define more variables. \*\*\*

\*\*\* Press Enter to continue \*\*\*

SDDPC ---- SAS DATA SET INPUT DEFINITION ----- ENTER REQUIRED FIELD  
 USERID: IRC5IC1 PREFIX: TSOIC1

SAS DATA SET: DEMO SAS DATA LIBRARY: SAS.DATA

VAR #	VARIABLE NAME	CHAR/NUM	MAX/LG	# DIGITS	IN DEC	OPTIONAL LABEL FOR DOCUMENTATION / GRAPH
1	YEAR	C	4	0		FISCAL YEAR
2	VOLUME	N	5	0		TRANSACTION VOLUME
3	COST	N	5	0		TRANSACTION CHARGES
4				0		
5				0		
6				0		
7				0		
8				0		
9				0		
10				0		

DO YOU WANT TO DEFINE FORMATS/INFORMATS FOR THESE VARIABLES? N (Y/N) OPTIONAL  
 IF NOT, DO YOU WANT TO DEFINE MORE VARIABLES? N (Y/N)

NOTE: A DATANAME THAT IS NUMERIC BUT NOT USED ARITHMETICALLY (SDCR AS MONTH)  
 SHOULD BE DEFINED AS CHARACTER (C) FOR EFFICIENCY & STORAGE USE.  
 PRESS ENTER TO DEFINE DATA, PF1 FOR HELP, PF3 TO CANCEL DEFINE

\*\*\* Press Enter to continue \*\*\*

\*\*\* Enter your data \*\*\*  
 \*\*\* (PF6 DUP key) \*\*\*  
 \*\*\* (PF9 ADD key) \*\*\*

EDIT SAS DATA SET: SASDATA.DEMO SCREEN 1  
 COMMAND === NEW 1

YEAR: 1980  
 VOLUME: 1000  
 COST: 125

\*\*\* After entering all your data, \*\*\*

\*\*\* Press PF3 to return to "SAS MENU" \*\*\*

\*\*\* Press Enter to continue \*\*\*

On the utility panel, users are able to display their library, dataset, or select any of the following options which allow the manipulation of the SAS dataset.

\*\*\* Select "DO" to display observation \*\*\*  
 \*\*\* you entered. \*\*\*

SDDPC ----- SAS UTILITIES MENU -----  
 SELECT OPTION === DO

CURRENT SAS DATA LIBRARY: SAS.DATA  
 CURRENT SAS DATA SET: DEMO

DD DISPLAY SAS LIB - DISPLAY SAS DATA LIBRARY DIRECTORY HARDCOPY === N Y/N  
 DO DISPLAY SAS DATA - DISPLAY SAS DATA SET OBSERVATIONS HARDCOPY === N Y/N  
 CC CODE SAS DATA - COPY SAS DATA SET, EXECUTE USER SAS CODE  
 CS COPY SAS DATA - COPY SAS DATA SET, SELECT/DELETE OBSERVATIONS  
 DS DELETE SAS DATA - DELETE SAS DATA SETS  
 RS RENAME SAS DATA - RENAME/EXCHANGE SAS DATA SET NAMES  
 SS SORT SAS DATA - SORT SAS DATA SET  
 AV ADDVAR SAS VAR - ADD NEW SAS VARIABLES TO A SAS DATA SET  
 DV DELVAR SAS VAR - DELETE SAS VARIABLES  
 FY FMTVAR SAS VAR - FORMAT/INFORMAT/LABEL SAS VARIABLES  
 MV MODVAR SAS VAR - MODIFY LENGTH/TYPE (CHAR,NUM) OF SAS VARIABLES  
 RV RENVAR SAS VAR - RENAME SAS VARIABLES  
 CL COPY SAS LIB - COPY SAS DATA LIBRARY  
 CR CREATE SAS LIB - CREATE A SAS DATA LIBRARY OTHER THAN THE DEFAULT NAME

# Reporting

\*\*\* Select 1 to run report \*\*\*

```

SDDFC ----- SAS MENU -----
SELECT OPTION === R

                                USERID - IRC5IC1
                                PREFIX  - TSOIC1

D SASDATA  - SAS DATA DEFINITION AND DATA ENTRY (EDIT)

E SASEXEC  - SAS PROGRAM EDIT (SPP) AND EXECUTE IN FOREGROUND OR BATCH
              (ALTERNATIVE TO INTERACTIVE SAS OR SPP EDIT/SUBMIT)

G SASGRAPH - SAS GRAPHS AND REPLAY OF SAS GRAPHS

R SASREPORT - SAS REPORT GENERATION

S SASCALC  - SAS SPREADSHEET

T SASSTQ   - SAS GENERAL TSO UTILITIES FOR PROGRAMMING

U SASUTIL  - SAS UTILITIES
              SAS VARIABLES - ADD, DELETE, RENAME
              SAS DATA SETS - COPY, DISPLAY, RENAME, SORT, PRINT
              SAS LIBRARIES - COPY, CREATE

Z SASCOPY  - COPY LAST PANEL-GENERATED SAS CODE.
    
```

\*\*\* Press Enter to continue \*\*\*

\*\*\* Request data to be sorted for report. \*\*\*  
 \*\*\* Enter title. \*\*\*

```

SDDFC ----- SAS REPORTS -----
SAS NAME: DEMO          SAS DATA LIBRARY: SAS.DATA

DISPLAY VARIABLE NAMES === N   Y/N Y = DISPLAY/NO OTHER FIELDS REQUIRED
LOCAL PRINTER ID      ===    OPTIONAL

WRITE SAS CODE FOR REPORT === N   Y/N Y = A CODING PANEL WILL BE DISPLAYED
SORT DATA BEFORE REPORT === Y   Y/N Y = A SORT  PANEL WILL BE DISPLAYED
CENTER REPORT ON PAGE  === Y   Y/N Y = TITLES/REPORT WILL BE CENTERED

REPORT TITLES: (OPTIONAL)
FISCAL YEAR TRANSACTION VOLUME CHARGES

-----

ENTER VARIABLE NAMES TO BE USED: (IF NONE SPECIFIED ALL WILL BE USED)
VAR01 ===   VAR02 ===   VAR03 ===   VAR04 ===
VAR05 ===   VAR06 ===   VAR07 ===   VAR08 ===
VAR09 ===   VAR10 ===  VAR11 ===   VAR12 ===

PRESS ENTER TO BEGIN REPORT  PF1 FOR HELP,      PF3 TO CANCEL REPORT
    
```

\*\*\* Enter variable to be sorted \*\*\*  
 \*\*\* (A or D) Ascending/Descending \*\*\*

```

SDDFC ----- SAS DATA SORT -----

SAS NAME: DEMO          SAS LIBRARY: SAS.DATA

ENTER VARIABLE NAMES IN THE ORDER TO BE SORTED (MOST SIGNIFICANT FIRST)

SORT BY:      VARIABLE      A/D (ASCENDING/DESCENDING)
              NAME

              === YEAR      === D
              ===          === A
              ===          === A
              ===          === A
              ===          === A

# OF OBSERVATIONS TO BE SORTED:  === ALL ALL-OBSERVATIONS. USE A
                                  SMALL NUMBER DURING TESTING.

PRESS ENTER TO BEGIN SORT,      PF1 FOR HELP,      PF3 TO CANCEL SORT
    
```

\*\*\* Enter variables to be summed. \*\*\*  
 \*\*\* Enter variable to replace OBS # \*\*\*

```

SDDFC ----- SAS PRINT SPECIFICATIONS -----
SAS NAME: DEMO          SAS DATA LIBRARY: SAS.DATA
ALL FIELDS ARE OPTIONAL.

ENTER BY VARIABLE NAMES TO FORCE DATA GROUP BREAKS. LIST MOST SIGNIFICANT 1ST.
FILE MUST BE SORTED BY VARIABLE, IF BY IS USED.
BY1 ===      BEGIN NEW PAGE === N   Y/N WHEN BY1 VARIABLE CHANGES
BY2 ===      BEGIN NEW PAGE === N   Y/N WHEN BY2 VARIABLE CHANGES
BY3 ===      BEGIN NEW PAGE === N   Y/N WHEN BY3 VARIABLE CHANGES
BY4 ===      BEGIN NEW PAGE === N   Y/N WHEN BY4 VARIABLE CHANGES

ENTER SUM VARIABLE NAMES TO BE TOTALED (AT A BY VARIABLE CHANGE AND/OR AT END)
SUM1 ===     VOLUME      SUM5 ===
SUM2 ===     COST        SUM6 ===
SUM3 ===     SUM7 ===
SUM4 ===     SUM8 ===

ENTER ID VARIABLE NAME (IF ONE) === YEAR (TO REPLACE OBS # ON REPORT)
PRINT N = AT GROUP BREAKS      === Y   Y/N Y = NUMBER OF OBS WILL PRINT
ASSIGN PRINT FORMATS TO VARIABLES? === N   Y/N Y = DISPLAY A FORMAT PANEL
SPECIAL SETUP (SPEC FORM, COPIES)? === N   Y/N Y = DISPLAY A SETUP PANEL
HOW MANY OBS SHOULD BE PRINTED?  === ALL  USE A SMALL NO. DURING TESTING.

PRESS ENTER TO BEGIN REPORT:  PF1 FOR HELP,      PF3 TO CANCEL
    
```

\*\*\* Press Enter to continue \*\*\*

\*\*\* Answer question below. \*\*\*

```

BROWSE - TSOIC1.SAS.REPORT ----- LINE 000000 COL 026 105
COMMAND ===                               SCROLL === CUR
***** TOP OF DATA *****-CAPS ON-**
FISCAL YEAR TRANSACTION VOLUME CHARGES
15:02

              YEAR      VOLUME      COST
1982          1750      175
1981          1500      150
1980          1000      125
              4250      450
N=3
***** BOTTOM OF DATA *****-CAPS ON-**
DO YOU WANT A HARDCOPY PRINT OF THIS REPORT? (Y/N/L)
Y - PRINT ON SYSTEM PRINTER AT ROSE CANYON
N - NO PRINT
L - PRINT ON LOCAL PRINTER "R003" (1000 LINE MAX)
L,RNXX - PRINT ON LOCAL PRINTER WITH ADDRESS "RNXX"
    
```

# Graphics

\*\*\* Select option "G" for Graphics. \*\*\*

```

SDDPC ----- SAS MENU -----
SELECT OPTION === G

                                USERID = IRC5IC1
                                PREFIX = TSOIC1

D SASDATA  - SAS DATA DEFINITION AND DATA ENTRY (EDIT)
E SASXEDC  - SAS PROGRAM EDIT (SPF) AND EXECUTE IN FOREGROUND OR BATCH
              (ALTERNATIVE TO INTERACTIVE SAS OR SPF EDIT/SUBMIT)
G SASGRAPH - SAS GRAPHS AND REPLAY OF SAS GRAPHS
R SASREPORT - SAS REPORT GENERATION
S SASCALC  - SAS SPREADSHEET
T SASSTO   - SAS GENERAL TSO UTILITIES FOR PROGRAMMING
U SASUTIL  - SAS UTILITIES
              SAS VARIABLES - ADD, DELETE, RENAME
              SAS DATA SETS - COPY, DISPLAY, RENAME, SORT, PRINT
              SAS LIBRARIES - COPY, CREATE
Z SASZCOPY - COPY LAST PANEL-GENERATED SAS CODE.
    
```

\*\*\* Press Enter to continue \*\*\*

\*\*\* Select "VB" option to create a vertical bar chart \*\*\*

```

SDDPC ----- SAS/GRAPH MENU -----
SELECT OPTION === VB

CURRENT SAS DATA LIBRARY: SAS.DATA          USERID: IRC5IC1
CURRENT SAS DATA SET   : DEMO              PREFIX: TSOIC1

DD DISPLAY DIRECTORY  - SAS DATA LIBRARY DIRECTORY  HARDCOPY === N Y.
DO DISPLAY OBSERVATIONS - SAS DATA SET OBSERVATIONS HARDCOPY === N Y.

XY X/Y PLOT          - GENERATE A LINE OR POINT GRAPH
VB VERTICAL BAR      - GENERATE A VERTICAL BAR CHART
HB HORIZONTAL BAR    - GENERATE A HORIZONTAL BAR CHART
PI PIE CHART         - GENERATE A PIE CHART
BL BLOCK CHART       - GENERATE A 3 DIMENSIONAL BLOCK GRAPH
SL SLIDE CHART       - GENERATE A GRAPHIC TEXT FOR A SLIDE OR REPORT
RP REPLAY GRAPH      - REPLAY AN EXISTING GRAPH WHICH WAS SAVED
    
```

\*\*\* Press Enter to continue \*\*\*

```

SDDPC ----- SAS VERTICAL BAR CHART -----
SAS NAME: DEMO          SAS DATA LIBRARY: SAS.DATA

CHART VARIABLE === VOLUME  REQUIRED - GIVE THE VARIABLE TO BE CHARTED
BAR TYPE?      === S       S SUM OR M MEAN OF VARIABLE
                F FREQ OR F PERCENT OF OBSERVATIONS
                CF CUMULATIVE FREQ CP CUMULATIVE PERCENT
SUM/MEAN VARNAME === COST  REQUIRED - IF BAR TYPE = S OR M
GROUP BARS BY   ===       OPTIONAL - SIDE BY SIDE CHART BY VARNAME (PF1)
SUBDIVIDE BAR BY ===       OPTIONAL - SUBDIVIDE BAR BY A VARIABLE NAME
TITLES?         === Y      Y/N/P Y - TITLE PANEL WILL BE DISPLAYED
                N - NO TITLES
                P - PREVIOUS TITLES FROM THIS SESSION
FOOTNOTES?     === N      Y/N/P Y - FOOTNOTE PANEL WILL BE DISPLAYED
BAR PATTERN?   === N      Y/N/P Y - PATTERN PANEL WILL BE DISPLAYED
AXIS SCALING?  === N      Y/N/P Y - AXIS PANEL WILL BE DISPLAYED
BY VARIABLES?  === N      Y/N/P Y - BY PANEL WILL BE DISPLAYED
FORMAT VARIABLES?=== N    Y/N Y - FORMAT PANEL WILL BE DISPLAYED
LEGEND?        === Y      Y/N Y - LEGEND / N - NO LEGEND ON CHART
DISCRETE VALUES?=== Y    Y/N Y - DISCRETE / N - CONTINUOUS NUMERIC
REFERENCE LINE  ===       OPTIONAL - VALUE AT WHICH A LINE IS TO BE DRAWN

PRESS ENTER TO BEGIN CHART, PF1 FOR HELP, PF3 TO CANCEL CHART
    
```

\*\*\* Press PF1 (Help) key to get \*\*\*  
 \*\*\* list of colors (per device) \*\*\*  
 \*\*\* list of fonts \*\*\*  
 \*\*\* list of heights \*\*\*  
 \*\*\* All titles are centered via default. \*\*\*

```

SDDPC ----- SAS TITLES -----
TITLE COLOR FONT HEIGHT JUSTIFY TEXT ANGLE CHAR ROTATE USERID: IRC5IC1
# (PF1) (PF1) 1-5 L/C/R -90 TO 90 0 to 360 PREFIX: TSOIC1

1 ATTRS --- --- --- --- --- ---
TITLE -----

2 ATTRS --- --- --- --- --- ---
TITLE -----

3 ATTRS --- --- --- --- --- ---
TITLE -----

4 ATTRS --- --- --- --- --- ---
TITLE -----

5 ATTRS --- --- --- --- --- ---
TITLE -----

*TITLE SHOULD BE ENTERED IN UPPER/LOWER CASE (TURN ON A,A SWITCH)
USE WORD "SPACE" IN TITLE AREA IF LINE IS SPACES & FOLLOWED BY ANOTHER TITLE
PRESS ENTER TO UPDATE TITLES / PF1 FOR HELP / PF3 CANCEL TITLES
    
```

```

TUTORIAL ----- SAS/GRAPH TITLES/FOOTNOTES ----- TUTORIAL
NEXT SELECTION ===
COLORS: IBM1279 COLORS - BLUE RED PINK GREEN CYAN YELLOW WHITE
        IBM3287P COLORS - BLUE RED GREEN BLACK
        ZETAS COLORS - BLACK RED GREEN BLUE BROWN VIOLET ORANGE YELLOW

FONT: SIM = SIMPLEX CSC = CURSCRIPT GRE = GREEK SPE = SPECIAL
      DOP = DUPLEX ITA = ITALIC CCR = CREEK MAT = MATH
      COM = COMPLEX TIT = TITALLIC OLD = OLDENGLISH CAR = CARTOG
      TRI = TRIPLEX GIT = GITALIC GER = GERMAN MUS = MUSIC
      SCR = SCRIPT XSW = XSWISS/SOLID ELE = ELECTRON WEA = WEATHER

HEIGHT: 1-5 CHARACTER UNITS (1=THE HARDWARE SIZE, 2=TWICE 1, ETC)

JUSTIFY: L=LEFT JUSTIFY, C=CENTER, R=RIGHT JUSTIFY (DEFAULT=C)

TEXT ANGLE: ANGLE TO DRAW THE LINES OF TEXT FROM -90 TO 90 DEGREES

CHARACTER ROTATE: EACH LETTER CAN BE INDIVIDUALLY ROTATED 0 TO 360 DEGREES

TITLE ON RIGHT MARGIN: USE TEXT ANGLE = 90, CHARACTER ROTATE = 90.
FOOTNOTE ON THE LEFT MARGIN: USE TEXT ANGLE = -90, CHARACTER ROTATE = 90.
FOOTNOTES ARE "PUSHED UP" FROM THE BOTTOM (THE HIGHEST NUMBER IS ON LAST LINE).
    
```

\*\*\* Press PF3 to continue \*\*\*

\*\*\* Enter color, font, height, and title. \*\*\*

```

SDDPC ----- SAS TITLES -----
TITLE COLOR FONT HEIGHT JUSTIFY TEXT ANGLE CHAR ROTATE USERID: IRC5IC1
# (PF1) (PF1) 1-5 L/C/R -90 TO 90 0 to 360 PREFIX: TSOIC1

1 ATTRS GRE XSW 3 C_ --- ---
TITLE TRANSACTION AND VOLUME CHARGES

2 ATTRS --- --- --- C_ --- ---
TITLE -----

3 ATTRS --- --- --- C_ --- ---
TITLE -----

4 ATTRS --- --- --- C_ --- ---
TITLE -----

5 ATTRS --- --- --- C_ --- ---
TITLE -----

*TITLE SHOULD BE ENTERED IN UPPER/LOWER CASE (TURN ON A,A SWITCH)
USE WORD "SPACE" IN TITLE AREA IF LINE IS SPACES & FOLLOWED BY ANOTHER TITLE
PRESS ENTER TO UPDATE TITLES / PF1 FOR HELP / PF3 CANCEL TITLES
    
```

\*\*\* Select output device option "2" for color terminal \*\*\*

```

SDBC ----- SAS GRAPH OUTPUT (OPTIONS) -----
SAS DATA NAME: DEMO          SAS DATA LIBRARY: SAS.DATA

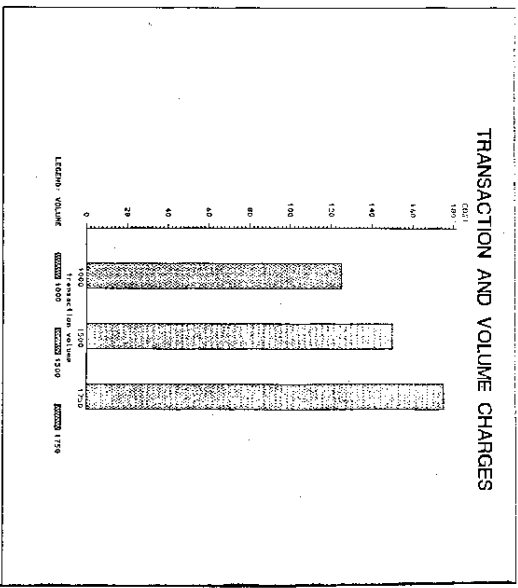
GRAPH OUTPUT DEVICE  === 2  ?  = COLOR      TERMINAL  RD = NO COLOR PLOTTER
                                N = NON-COLOR TERMINAL  RP = NO COLOR PRINTER
                                CR = CAR COLOR PLOTTER  WR = NO COLOR PRINTER
                                CP = CAR COLOR PRINTER  PG = PG COLOR PLOTTER

PRODUCE GRAPH NOW?  === Y  Y/N YOU CAN ALSO SAVE GRAPH FOR REPLAY
SAVE GRAPH FOR REPLAY  === N  Y/N REPLAY NAME ===
REPLAY LIB          === SAS.REPLAY

ROTATE 90 DEGREES  === Y  Y/N          ROTATE PLOT (ROTATE ONLY)
DRAW BORDER        === Y  Y/N          DRAW BORDER AROUND PLOT
SYMBOLS            === Y  Y/N          USE HANDMADE SYMBOLS

VERTICAL POSITIONS  === 0  OPTIONAL  VPOS/DEFAULT = DEVICE LINES/PLOT
HORIZONTAL POSITIONS  === 0  OPTIONAL  HPOS/DEFAULT = DEVICE CHAR/LINE
PLOT LENGTH/INCHES  === 0  OPTIONAL  VSIZE/DEFAULT = PAPER LENGTH
PLOT WIDTH/INCHES   === 0  OPTIONAL  HSIZE/DEFAULT = PAPER WIDTH

PRESS ENTER TO START GRAPH,          P/F1 FOR HELP,          P/F3 TO CHANGE GRAPH
  
```



Copy generated Code

```

*** Select 2 to save code generated by panels to ***
*** produce graph or report. ***

SDBC ----- SAS MENU -----
SELECT OPTION  === 2

D SASDATA  - SAS DATA DEFINITION AND DATA ENTRY (EDIT)
                                USERID - IASJCI1
                                PREFIX - TSOJCI1

E SASEXEC  - SAS PROGRAM EDIT (SPP) AND EXECUTE IN FOREGROUND OR BATCH
                                (ALTERNATIVE TO INTERACTIVE SAS OR SPP EDIT/SUBMIT)

G SASGRAPH - SAS GRAPHS AND REPLAY OF SAS GRAPHS

R SASREPORT - SAS REPORT GENERATION

S SASCALC  - SAS SPREADSHEET

T SASINFO - SAS GENERAL TSO UTILITIES FOR PROGRAMMING

U SASUTIL  - SAS UTILITIES
                                SAS VARIABLES - ADD, DELETE, RENAME
                                SAS DATA SETS - COPY, DISPLAY, RENAME, SORT, PRINT
                                SAS LIBRARIES - COPY, CREATE

Z SASCOPY  - COPY LAST PANEL-GENERATED SAS CODE
  
```

\*\*\* Press Enter to continue \*\*\*

\*\*\* Enter OS data set name. \*\*\*  
 \*\*\* Enter Y to edit code. \*\*\*  
 \*\*\* If OS data set does not exist, create data set \*\*\*

```

SDBC ----- COPY GENERATED SAS CODE -----
COPY LAST PANEL-GENERATED SAS SOURCE CODE TO:
OS DATA SET NAME  === DEMO.VB
NUMBER NAME, IF ONE
EDIT SOURCE CODE  === Y
Y/N

OS DATA SET *** DEMO.VB *** DOES NOT EXIST.
WOULD YOU LIKE IT CREATED? Y/N
=== Y

*** Press Enter to continue ***
  
```

```

EDIT ---- TSOJCI1.DEMO.VB -----
***** TOP OF DATA *****
000001 PROC CREAT DATA=SASDATA.DEMO;
000002 OPTIONS TERMINAL DEVICE=IBM3270 BORDER NONCOLOR SYMBOL;
000003 VPOS=0 HPOS=0 VSIZE=0 HSIZE=0 PPOS=0 PPS=0 CHARACTERS;
000004 VAR VOLUME/TYPE=SUM SUBGROUP=VOLUME SUMVAR=COST
000005 NOBS=NOBS;
000006 PATTERN1;
000007 PATTERN2;
000008 PATTERN3;
000009 PATTERN4;
000010 PATTERN5;
000011 PATTERN6;
000012 PATTERN7;
000013 PATTERN8;
000014 PATTERN9;
000015 TITLE1 C=GREEN I=TRIPLEX H=3 J=I;
000016 C=TRANSACTION AND VOLUME CHANGES;
000017 TITLE2;
000018 TITLE3;
000019 TITLE4;
000020 TITLE5;
000021 FOOTNOTE1;
000022 RUN;
  
```

\*\*\* Press F13 to continue \*\*\*

Execute

```

SDBC ----- SAS MENU -----
SELECT OPTION  === E

D SASDATA  - SAS DATA DEFINITION AND DATA ENTRY (EDIT)
                                USERID - IASJCI1
                                PREFIX - TSOJCI1

E SASEXEC  - SAS PROGRAM EDIT (SPP) AND EXECUTE IN FOREGROUND OR BATCH
                                (ALTERNATIVE TO INTERACTIVE SAS OR SPP EDIT/SUBMIT)

G SASGRAPH - SAS GRAPHS AND REPLAY OF SAS GRAPHS

R SASREPORT - SAS REPORT GENERATION

S SASCALC  - SAS SPREADSHEET

T SASINFO - SAS GENERAL TSO UTILITIES FOR PROGRAMMING

U SASUTIL  - SAS UTILITIES
                                SAS VARIABLES - ADD, DELETE, RENAME
                                SAS DATA SETS - COPY, DISPLAY, RENAME, SORT, PRINT
                                SAS LIBRARIES - COPY, CREATE

Z SASCOPY  - COPY LAST PANEL-GENERATED SAS CODE
  
```

\*\*\* Press Enter to continue \*\*\*

```

*** Enter DEMO.VB ***
*** Select output device. ***

SDDPC ----- SAS EDIT/EXECUTE -----
USERID: IRC8IC1

SAS SOURCE CODE:
SAS STATEMENTS DATA SET NAME === DEMO.VB
SAS MEMBER NAME, IF ONE
EDIT SAS STATEMENTS === Y Y/N IF N, NO EDIT BEFORE EXECUTION
BATCH EXECUTION? === N Y/N IF N, FOREGROUND EXECUTION

IF BATCH, HOLD OUTPUT CLASS W === Y Y/N IF N, PRINT OUTPUT CLASS T
IF BATCH, RUN NOW === Y Y/N IF N, RUN OVERNIGHT
IF BATCH, GENERATE JCL === Y Y/N IF N, JCL IS CODED IN SOURCE

INPUT FILES/OUTPUT FILES: (IF APPLICABLE) DISP=(OLD,SHR,MOD)
DDNAME === SASDATA DATA SET === SAS.DATA DISP === 0
DDNAME === DATA SET === DISP ===
DDNAME === DATA SET === DISP ===
DDNAME === DATA SET === DISP ===
GRAPHICS DEVICE === T T COLOR TERMINAL WG WU COLOR PLOT
CG CAB COLOR PLOTTER RG RC COLOR PLOT
CP CAB COLOR PRINTER RP RC COLOR PRINT

SAS "OPTIONS" (OPTIONAL) ===
LOCAL PRINTER ID === R003 OPTIONAL
PRESS ENTER TO EXECUTE PF1 FOR HELP, PF3 TO CANCEL EXECUTE

```

\*\*\* Press Enter to continue \*\*\*

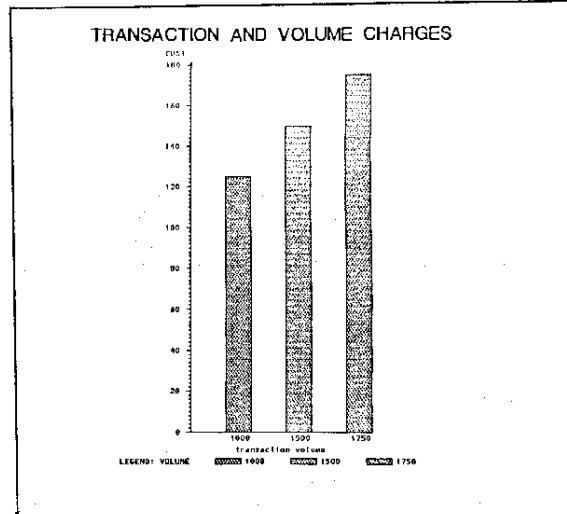
\*\*\* Edit code, make changes, add another title, etc. \*\*\*

```

EDIT --- TSOIC1.DEMO.VB ----- COLUMNS 001 07:
COMMAND === SCROLL === C51
***** TOP OF DATA *****
000001 PROC GCHART DATA=SASDATA.DEMO;
000002 OPTIONS ;
000003 GOPTIONS TERMINAL DEVICE=IBM3279 BORDER NOROTATE SYMBOL
000004 VSIZE=0 HSIZE=0 VPOS=0 HPOS=0 CHARACTERS;
000005 VBAR VOLUME/TYPE=SUM SUBGROUP=VOLUME SUMVAR=COST
000006 DISCRETE NOZEROS;
000007 PATTERN1 ;
000008 PATTERN2 ;
000009 PATTERN3 ;
000010 PATTERN4 ;
000011 PATTERN5 ;
000012 PATTERN6 ;
000013 PATTERN7 ;
000014 PATTERN8 ;
000015 TITLE1 .C=GREEN .P=TRIPLEX .H=3 .J= ;
000016 C 'TRANSACTION AND VOLUME CHARGES' ;
000017 TITLE2;
000018 TITLE3;
000019 TITLE4;
000020 TITLE5;
000021 FOOTNOTE1;
000022 RUN;

```

\*\*\* Press PF3 to continue \*\*\*



### SUMMARY

The panels presented here were designed to eliminate the problems that so often arise when non-data processing professionals are introduced to data processing systems (packages).

Using the 'check-a-box' system users are able to define a data set, enter data, produce reports & graphics, and then save the actual code required to do all this, and even execute the code at any time without learning the programming language itself.

All these lives people have been asked to fill out forms before they receive anything. To me this makes the 'check-a-box' method a natural.

For further information contact:

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