

WOULD YOU CARE TO SEE OUR MENUS?

Teaching SPSS^X on a Mainframe Computer

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Address to the SPSS User Exchange
Chicago Hilton Hotel & Towers,
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Although I am an avid user of microcomputers, I prefer to use SPSS^X on a mainframe computer when teaching my large lecture course on elementary statistics. I prefer the mainframe, accessed by remote terminals, for several reasons:

1. Running SPSS at a central site avoids the problems of providing the program to individual users--which are insurmountable when the class numbers about 100 students.
2. Using terminals that connect to centralized data bases enables my students to access a wide range of data sets while giving me control over the data's use.
3. I like the ease of use that comes from using menus on the mainframe to access data bases and to run SPSS.

Most people do not associate menuing with mainframe computers, but menus can be designed and implemented on mainframes--just like micros--to facilitate executing repetitive tasks and to avoid learning much (if anything) about the mainframe's operating system. I will describe my use of menuing under the NOS operating system for the Control Data Corporation's Cyber 845 computer. However, these basic ideas should be transferable to other brands of mainframes by writing relatively simple front-end programs.

Thanks to the Cyber Control Language (CCL), menuing is rather easy under NOS, which readily recognizes and executes strings of CCL statements--called "procedures"--that are designed to accomplish certain tasks. Because my discussion is illustrative rather than explanatory, I will not explain the CCL procedures but only describe how they function in teaching Political Science C24, Elementary Statistics for Political Research.

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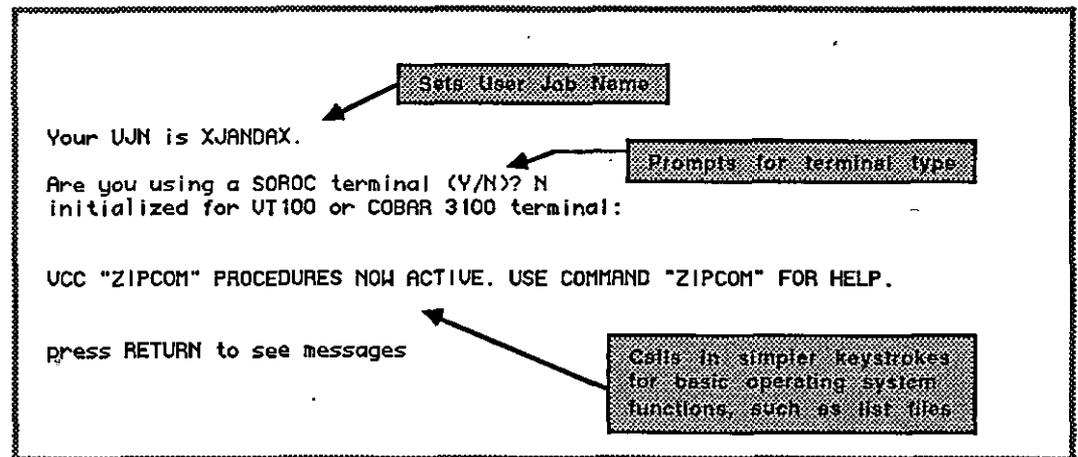
The SPX procedure described in this paper was created by Harry Nelsen and refined by Tom Judd, both of Northwestern's Academic Computing and Network Services.

The C24DATA procedure was written by Dennis Hartman while an undergraduate student in computer sciences.

My course employs three different procedures to guide students in using SPSS^X on the Cyber mainframe: (1) a *user prologue*, (2) a *data menu*, and (3) *SPX* -- a menu for running SPSS^X. The following text and boxes describe and illustrate each of these procedures.

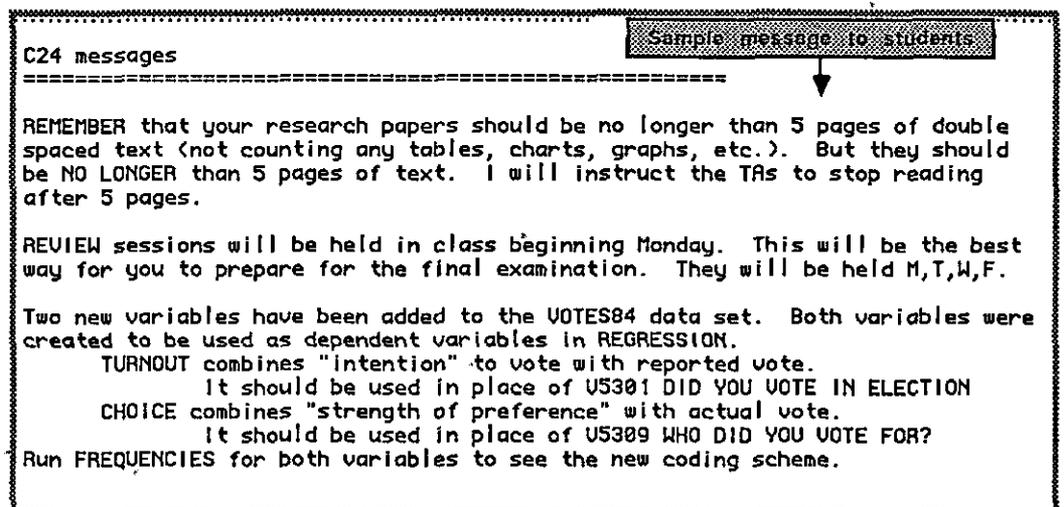
1. Each time the user signs on the computer using his or her unique class subaccount, the Cyber executes a *user prologue* that automatically

- assigns the student a "User Job Name" that appears on all output that prints at the central site
- prompts for the type of terminal the student is using
- sets up shortcut key strokes to execute some basic system commands
- attaches certain files that the student needs to use SPX



Screens from Prologue procedure

- displays a message from me that I use to convey reminders or last-minute instructions
 - concludes with a short instruction of what the user can do next --
- which is either to type MAIL, to send messages to me or to another classmate, or to type C24DATA, to enter the next menu.



2. A data menu allows the students to select any of eight different data sets in SPSS^X format.

Several purposes are served by using a variety of data sets in teaching statistics. Students become more aware of different topics that can be analyzed using statistics. They also are exposed to different methodological issues, such as individual versus ecological approaches to the study of voting behavior. Finally, students can choose data to suit their particular interests when writing the five-page required research paper, due at the end of the course.

Students can learn about the information contained in these data sets by choosing option 9 -- "Get Information" -- on the data menu. This produces another menu, illustrated below.

SELECT A DATA SET

1. STATES
2. VOTE84
3. CITIES
4. NATIONS
5. PARTIES
6. CONGRES
7. CHICAGO
8. WORLD
9. get information

Select from the list above and press RETURN:

GETDATA

Enter the number of the data set you wish to use with SPSS-X.

--- OR ---

Choose option 9 to get information on any of the data sets.

Switches to new menu that provides information on individual data sets

Screens from the C24DATA menu

The available data contain social, economic, and political variables on the American states, individual voters, 63 U.S. cities, 155 nations, 147 political parties in foreign countries, 435 members of Congress, 77 communities in Chicago, and military and social expenditures of 142 nations.

In response to a request to "display info" for any of these data sets, the computer will list two or three pages on the screen, describing the data set and identifying the variables. When the listing is ended, the student is asked whether he or she wants to have the output printed at the central site, under the student's User Job Name.

Display which information file?

1. STATES info
2. VOTE84 info
3. CITIES info
4. NATIONS info
5. PARTIES info
6. CONGRES info
7. CHICAGO info
8. WORLD info
9. return to SELECT A DATA SET menu

Select from the list above and press RETURN:

Any selection will display information about that data set: variables, range of values, etc.

THESE DATA ON 50 STATES AND WASHINGTON, D.C., COME FROM THE CENSUS'S "STATE AND METROPOLITAN DATA BOOK--1982," WHICH IS AVAILABLE IN THE GOVERNMENT PUBLICATIONS ROOM, UNIVERSITY LIBRARY. THE VARIABLE NUMBERS IN THE DATA SET MATCH THOSE IN THE COLUMN HEADINGS IN THE CENSUS PUBLICATION. SEE IT FOR MORE INFORMATION ABOUT THE DATA.

THIS SET OF VARIABLES IS EXTRACTED FROM A LARGER SET AVAILABLE IN RAW FORM AS "ICPSR STUDY 8187" -- A DESCRIPTION OF THAT STUDY IS AVAILABLE IN THE LIBRARY AT VOGELBACK COMPUTING CENTER.

Portion of the information available on the STATES data file

If the student wishes, this information is automatically printed at the central site for the student's reference.

THE VARIABLES 'PARTYID' AND 'IDEOLOGY' ARE MEAN VALUES COMPUTED FROM SAMPLE SURVEYS TAKEN IN INDIVIDUAL STATES AND AGGREGATED OVER TIME. THEY SHOW THE IDEOLOGICAL SELF-CLASSIFICATION OF THE ELECTORATE. NEGATIVE VALUES INDICATE LIBERALISM (-1.0) AND POSITIVE VALUES MEAN CONSERVATISM (+1.0).

[SEE GERALD C. WRIGHT ET AL., 'MEASURING STATE PARTISANSHIP AND IDEOLOGY WITH SURVEY DATA,' JOURNAL OF POLITICS, 47 (MAY, 1985), 469-489.]

'BABYMORT' IS NUMBER OF INFANT DEATHS IN 1978 PER 1,000 LIVE BIRTHS
'LIFEEXP' IS MEAN LIFE IN YEAR FOR 1969-71, BOTH SEXES'
'VOTING80' AND 'VOTING84' ARE PERCENT OF ELECTORATE VOTING IN 1980 AND 1984

VARIABLE	MINIMUM	MAXIMUM	VALID N	DESCRIPTION OF VARIABLES IN FILE
LEVEL	4.000	4.000	51	
REGION	1.000	4.000	51	CENSUS REGIONS--4 GROUPS
DIVISION	1.000	9.000	51	SUBDIVISIONS WITHIN REGIONS
STATE	11.000	95.000	51	CENSUS STATE CODE
ALPHABET	1.000	56.000	51	STATES CODED IN ALPHABETICAL ORDER
V00020	69.000	591004.000	51	AREA 1980 TOTAL (SQUARE MILES)
V00060	401851.000	23667902.0	51	POPULATION TOTAL PERSONS 1980 (TOTAL)
V00070	303.000	19971.000	51	POPULATION TOTAL PERSONS 1970 (1000)
V00260	76528.000	19771903.0	51	POP. BY RESIDENCE IN URBANIZED AREAS
V00330	0	3217315.00	51	POP. BY RESIDENCE METRO AREAS 1980
V00470	171768.000	18030893.0	51	POPULATION BY RACE WHITE 1980
V00500	1135.000	2402006.00	51	POPULATION BY RACE BLACK 1980
V00570	3304.000	4544331.00	51	POPULATION BY RACE SPANISH ORIGIN 19
V00691	11547.000	2414250.00	51	PERSONS 65 YEARS OLD + OVER
V02800	15.000	1807.000	51	FED FOOD STAMP PROG. PEOPLE 1980 (10
V02830	6844.000	725022.000	51	FED FOOD STAMP PROG. COST 1980 (\$100
V02860	33.000	1950.000	51	SCHOOL LUNCH PROG. ALL PUPILS 1980 (1
V02890	2755.000	199312.000	51	SCHOOL LUNCH PROG. FED. COST 1980 (\$1

3. After the data are selected, the student enters the SPX procedure, which first asks for two file names:

- the name of the file for the SPSSx commands (this may be an existing file or one to be created, but there must always be a file to contain SPSSx commands)
- the name of the raw data file, if one is being created or used on this run (this is not required)

SPX Environment

Command file name (required) : _____

Raw data file name (optional) : _____

Type the file names and then press < RETURN > when ready

SPX screens

After it has the file names, SPX then calls in the main menu for running SPSS^x:

The SPX menu offers 12 options, including Quit. By using these options, students can edit their command files or their data files, and run SPSS^x. After executing, the results are automatically displayed on the screen.

If there are errors, option 4 quickly lists the errors without scrolling through the whole output. Option 5 allows relisting the results without re-running the program. Results may be saved with option 6, or they may be printed at the central site with option 7.

Options 8 and 9 are useful for accessing and saving system files, and option 10 allows users to switch to other command or raw data files. Option 11 offers on-line help about SPSS^x.

SPX Environment

1. Edit the command file
2. Edit the raw data file
3. Run SPSSX
4. Quick list of errors
5. Display results
6. Save results
7. Print
8. Get system files
9. Save system files
10. Switch files
11. Help
12. Quit

#1 and #3 are the main choices when using system files

Select a number from the list above and press < RETURN > : _____

Sample of an SPSS^x command file, using STATES data

The SPSS^x command file to the right can be edited by positioning the cursor anywhere on the screen. The command file is automatically saved when exiting SPX.

I have taught SPSS^x on a mainframe with and without menuing, and--believe me--the menus make teaching much easier.

Q_ ← "Q" typed in Quit

DO NOT USE "QR" TO EXIT, JUST Q (QUIT)

Upper Case File JUNE21 Lines 1 - 6 Size 6 (Changed)

FILE HANDLE STATES

GET FILE=STATES

COMPUTE TURNOUT = (V18590 / V19600) * 100

FREQUENCIES VARIABLES = PCTBLACK V10130 TURNOUT

/FORMAT = NOTABLE / HISTOGRAM INC(2) MIN(0)

/STATISTICS = MEAN MEDIAN MODE STDDEV VARIANCE KURTOSIS SKEWNESS MINIMUM MAXIMUM RANGE

Full Screen Editor Instructions: top line used for Directives