

Interactive Procedures and NOS 2 CCL

In March 1984, UCC installed a version of NOS 2 CCL that runs under the present NOS 1 system. The main advantage of the upgraded version of CCL is that you can now write procedures that prompt interactively for parameter values on control statements.

Procedures under NOS 1 are fairly uncomplicated sets of common command sequences. Using the interactive features of NOS 2 CCL, however, you can make these procedures more efficient and more powerful because parameter passing is so much easier; essentially, you can now tailor the operating system to your own requirements and considerably simplify your use of operating system commands.

The NOS 2 version of CCL also contains an expanded set of procedure directives: formatting and help directives (e.g., CORRECT, ENTER, HELP, ENDHHELP) set up the text and messages to appear during interactive or menu prompting; branching directives (e.g., IF, ELSE, ENDIF) are familiar from NOS 1 CCL, but a new directive, EX, is now available; file directives DATA, EOF, and EOR operate on data files within or created by the procedure as in NOS 1.

Interactive Procedures

If you write new procedures or modify old ones to take advantage of interactive prompting, do this to save yourself lots of headaches on procedure calls: add *I or *M to the procedure name in the procedure header to get interactive or menu prompting. Using the HELP directive, you may supply explanatory text at the beginning of your file for the procedure itself and for any parameters that need to be supplied

```
.PROC,BLANKT*I,P1=(*N=#DATA,*A),VSN" OF TAPE"=(*A),
ID "(TAPE IDENTIFIER)"=(*A),
D "(DENSITY OF TAPE)"=(*N=$,D=PE$,HI,HY,HD,PE,GE).
.HELP.
This procedure records an initial set of ANSI-standard labels on a tape.
.HELP,VSN.
The VSN number assigned by UCC tape librarian if stored in UCC tape library (SNxxxx)
or one of your own choice if a transient tape (TTxxxx).
.HELP,ID.
One to 14 character string identifying the tape. Non-alphanumerics must be delimited by
$.
.HELP,D.
Density at which label is to be recorded: default is PE for 9-track.
.ENDHELP.
SUBMIT,BLTP.
.DATA,BLTP.
/JOB
BLANKT.
/USER
BLANK,#VSN=VSN,#ID=ID_D.
```

Exhibit 1. Sample procedure header and HELP comments.

in the procedure call. This formatting and help section of the procedure ends with the ENDHHELP directive.

For example, the procedure header and HELP comments in Exhibit 1 prompt you for parameter values for a Blank command.

You call this procedure by typing BEGIN,BLANKT?. The procedure responds with the first HELP comment, lists all the parameters, and prompts you for the first one. If you type "?" in response to the prompt for VSN, the system responds with the HELP text for that parameter and prompts again. In response to a "?" for parameter D, the system prints the list of alternatives and then prompts for a choice. You can type STOP at any time to halt the procedure call.

Procedure directives must be upper-case, no more than 150

characters per line, but can be continued on following lines. You can write as much HELP text as you like in upper and lower case.

The interactive feature of NOS 2 CCL allows you to pass parameters to a procedure very easily. Instead of trying to remember a long list of parameters to include in a BEGIN command, you can enter them interactively. Thus you can now construct procedures that require parameter passing with some confidence that you and any other user will be able to do it.

You may notice that *I is not the only addition to the procedure header in Exhibit 1. The format for designating permissible values for parameters has also changed. Each parameter now has the following form:

```
keywrdd"description"=(checklist) or
keywrdd'description'=(checklist)
```

The keyword for the parameter is limited to seven characters. The description can be up to 40 characters in upper and lower case. The choice between quotation marks and apostrophes around description determines what appears in the prompt for the parameter: if you use quotes, both keyword and description will appear; if apostrophes, description alone will appear in the prompt.

The checklist, enclosed in parentheses, contains symbols that you use to qualify the use of the parameter. They are specified in the definition but may or may not be listed during interactive processing. If, for example, a checklist contains *N= and you call the procedure without a question mark, you will not be prompted for the parameter, and it will default. If you append a question mark to the procedure call, you will be prompted for all parameters. The checklist patterns are briefly described in Exhibit 2. These patterns may be given a value such as #DATA, #FILE, #PRIMARY or any 1 - 40 character string. Except for \$, #, /, and _, all non-alphanumeric characters, including a single *, in value must be delimited by dollar signs.

These checklist possibilities may seem confusing, but in practice they are fairly simple. For example, the *F, *A, and string=value checklist patterns are used in the following procedure.

```
.PROC,LABELT*I,FN"FILE NAME"=(*F),
VSN "OF TAPE"=(*A),
WRITE "YES OR NO"=(YES=W,NO=R).
LABEL,FN,#VSN=VSN,#PO=WRITE,WRITE.
```

Note in both Exhibit 1 and the example above that # inhibits substitution in the procedure body. The _ character temporarily separates parameters in the procedure body; for example, given the parameter SUFFIX "FOR COPY"(*N=,BF,BR,SBF) in the procedure header, the command in the procedure body could be COPY-SUFFIX. To call procedure LABELT, you have two choices. First, you can call it with the following parameters specified in the BEGIN statement.

```
BEGIN,LABELT,FN=STATS,VSN=TAPE24,
WRITE=NO
```

*N=value	Specifies the substitution for keyword when no parameter is entered on the procedure call. *N=substitutes a null value, and if *N appears, no substitution occurs. If this symbol does not appear in a checklist, the parameter is required, and interactive prompts will ask for it.
*N=	
*N	
*F=value	Specifies a filename for a parameter entry on the procedure call. If *F=value is in the checklist, value replaces keyword in the procedure body when a filename is specified in the BEGIN command. *F= substitutes a null value, and *F means that no substitution occurs.
*F=	
*F	
*K=value	Specifies what is substituted if the procedure call contains only keyword for the parameter entry. *K= substitutes null value, and *K means that no substitution occurs.
*K=	
*K	
*A=value	Specifies the substitution for keyword regardless of what is entered for the parameter on the procedure call. *A= substitutes a null value; if *A is specified, whatever is entered on the procedure call replaces keyword.
*A=	
*A	
*Sn(set)=value	Specifies that the parameter entry on the procedure call may contain 1 to n elements from the set. Default is one element. Value replaces keyword if n characters of the set are specified on the procedure call.
*Sn(set)=	
*Sn(set)	
string=value	Specifies the substitution for keyword when the parameter entry on the procedure call matches string. If value is specified in the procedure header, that value replaces keyword in the procedure body.
string=	
string	

Exhibit 2. Checklist patterns.

```
BEGIN,LABELT ?
PARAMETERS FOR LABELT ARE FN, VSN, WRITE
Enter FN FILE NAME ? ?
ALLOWABLE VALUE(S)
MUST BE A FILE NAME
Enter FN FILE NAME ? stats
Enter VSN OF TAPE? ?
ALLOWABLE VALUE(S)
ANY 1-40 CHARACTER STRING
Enter VSN OF TAPE ? tape24
Enter WRITE YES OR NO? ?
ALLOWABLE VALUE(S)
YES
NO
Enter WRITE YES OR NO? no
```

Exhibit 3. Interactive prompts for LABELT procedure.

Second, you can call the procedure with the parameters specified interactively. In the example in Exhibit 3, all the prompts are supplied by the system, since no HELP text was written into the procedure. If you enter a question mark after the procedure name in the BEGIN statement, the dialogue in Exhibit 3 might ensue.

When the parameters are passed and substituted, the procedure body (the LABEL command) looks like this:

```
LABEL,STATS,VSN=TAPE24,PO=R,R.
```

The procedure header for an Examine tapes procedure in Exhibit 4 illustrates how many parameters can now be handled easily on a procedure call; note too the variety of checklist patterns used to define parameter choices.

Typing BEGIN,EXAMINT will produce prompts for VSN and ID, and the rest of the parameters will default. If you wish to be prompted for all parameters, typing "?" after the procedure name will produce HELP text and system prompts.

Menu Procedures

The upgraded version of NOS 2 CCL also allows menu prompting for one parameter that can be set to values between 1 and 50. The menu procedure in Exhibit 5 presents all the sample procedures above as options, and the HELP text along the way will make it easy for inexperienced users to deal with tapes.

If you type BEGIN,TAPMENU and choose option 1, the interactive BLANKT procedure will immediately prompt for parameter VSN. Menu procedures could be especially valuable if written for novice users because they provide a branching point and control the number of options available at any one time. If you want to limit the choices available to procedure callers, to save them from spectacular foul-ups or to save yourself from the nervous strain of complex decision-making, menu procedures could be helpful.

```
.PROC,EXAMINT*I"EXAMINE TAPE",
P1>(*N=#DATA,*A),
VSN" OF TAPE"=(*A),
ID"(TAPE IDENTIFIER)"=(*A),
MT"(IS THIS A 7-TRACK TAPE? YES OR NO)"=(*N=,YES=$,MT$,NO=),
DNT "(DENSITY OF 9-TRACK TAPE)"=(*N=$,D=PE$,HD=$,D=HD$,PE=$,
GE=$,D=GE$),
DMT"(DENSITY OF 7-TRACK TAPE)"=(*N=$,D=HI$,LO=$,D=LO$,HI=$,
D=HI$,HY=4,D=HY$),
PO"(PROCESSING OPTIONS)"=(*N=R,*S4(AEEFHILMNPRSUW)),
FC"(CHARACTER COUNT)"=(*N=6000,*A),
DR"(DELINK RECORDS? YES OR NO)"=(*N=,YES=$,DR$,NO=),
L"(OUTPUT FILE)"=(*F),
LO"(LIST OPTION)"=(*N=A,A,O,B,AS,EB,HX),
N"(NUMBER OF TAPEMARKS TO PROCESS)"=(*N=0,*A),
RL"(NUMBER OF RECORDS PER FILE TO LIST)"=(*N=45,*A).
```

Exhibit 4. A procedure header for an Examine tapes procedure.

```
.PROC,TAPMENU*M "(CHOOSE TAPE ACTION)",
OPTION=(1"BLANK TAPE",
2"LABEL TAPE",
3"EXAMINE TAPE").
.HELP.
This menu helps you choose to blank or initialize a tape, to mount a tape on a
drive, or to examine a tape.
.HELP1.
This choice allows you to issue the Blank command.
.HELP2.
This choice allows you to Label a tape for use of your job.
.HELP3.
This choice allows you to Examine the physical records on a tape.
.ENDHELP.
.IFE,OPTION.EQ.1,LABEL1.
BEGIN,BLANKT?.
.ENDIF,LABEL1.
.IFE,OPTION.EQ.2,LABEL2.
BEGIN,LABELT?.
.ENDIF,LABEL2.
.IFE,OPTION.EQ.3,LABEL3.
BEGIN,EXAMINT?.
.ENDIF,LABEL3.
```

Exhibit 5. Menu procedure.

Interactive and menu procedures are fully documented in the NOS 2 Reference Set, volume 3, section 4. Our system does not presently support screen mode for interactive and menu procedures as described in the NOS 2 manual. Next month's *Newsletter* will contain an explanation of NOS 2 CCL procedure

directives and processing. You can obtain all four procedures discussed above by typing:

```
A,TPROCS/UN=YZE6038,PN=0.
```

Call the HELP-line, 376-5592, for further assistance with NOS 2 CCL and interactive procedures.

(Parker Johnson)

CYBER Notes

TRACK LIMIT PROBLEMS

In the last six months, the number of large files retained on CYBER CA disks has increased dramatically. The amount of available disk space decreased on the CA and CB family disk devices because of these huge files (2000 PRUs = 1,280,000 characters). With limited disk space, TRACK LIMIT errors occur when you process these files and the job aborts. TRACK LIMIT means that no space is available to hold a file transferred from tape or one created during job execution. If you retain files on disk storage that are greater than 2000 PRUs for any length of time you minimize available space for all users; it is also expensive.

The current disk storage capacity of our computer systems is:

CYBER CA	12.0 billion characters
VAX	1.5 billion characters
CRAY 1	1.8 billion characters
CYBER ME	2.1 billion characters

On the first of each month, we archive files that have not been accessed during the preceding month (disks have a tendency to fill up with long-forgotten files). The May 1 archive made available 753.1 million characters of file space. This is equivalent to seven to ten percent of the total available disk space.

We remind permanent files users that it is expensive to keep disk files on-line. To minimize costs, we advise you to "CATLSYS" your accounts periodically and remove files you no longer use. The "DUMPPF" and "ARCHIVE" procedures can help you maintain tape copies of disk files you seldom use.

Guidelines for File Retention/Job Setup

- If you use many large files frequently, lease a removable disk pack that holds 118 or 227 million characters. Our tape librarian can supply information and arrangements.
- If possible, avoid running and storing large files until after the first of the month. Archived files free up disk space by approximately seven to ten percent.

```

1 AANYGFW. 84/05/02.UOFM CYBER A (03/20-BT).
09.13.03.PJO(T999)
09.13.03.$USER(YZE6063,)
09.13.03.NOEXIT.
09.13.03.A,NONAME = SAVE80/UN = ***** ,PN = ALBERG.
09.13.06.A,SPEXAM2/PN = 0.
09.13.07.SPSS,I = SPEXAM2,G = NONAME,S = DATASF,L = LIST.
09.18.18. *****
09.18.18. MUST DROP YOUR JOB BECAUSE
09.18.18. TRACK LIMIT,RS.
09.18.18. TRACK LIMIT, FILE ZZSPS2 AT 21375.
09.18.18. OPERATOR DROP.
09.18.18. EXIT.
09.20.58.COST.
09.20.58. ACCUMULATED JOB COST - UNIVERSITY RATE.
09.20.58. CP 91.302 SEC.
09.20.58. MS 512.544 KUN.
09.20.58. PF .067 KUN.
09.20.58. CM 89.561 KWD.
09.20.58. SR 242.158 UNS.
09.20.58. CURRENT JOB COST = $ 33.59
09.20.58.UEPF, 0.067KUNS.
09.20.58.UEMS, 512.544KUNS.
09.20.58.UECP, 91.302SECS.
09.20.58.AESR, 242.159UNTS. YZE6063.
    
```

Example 1.

```

1 AJ0AKIO. 84/05/10.UOFM CYBER A (05/01-BU).
12.28.26.PJO(T999)
12.28.26.$USER(YZE6063,)
12.28.26.NOEXIT.
12.30.04.A,NONAME = SAVE80/UN = YZE6015,PN = ALBERG.
12.30.05.A,SPEXAM2/PN = 0,UN = YZE6063.
12.30.06.SPSS,I = SPEXAM2,G = NONAME,S = DATASF,L = LIST.
12.31.11.** FILE RETURNED ** NONAME
12.35.21. PERMANENT FILE UDCFIL8, 8 PRUS.
12.35.21.END SPSS
12.35.22.RETAIN,LIST.
12.35.25. LIST CONVERTED TO DIRECT ACCESS.
12.35.25. PERMANENT FILE LIST, 3151 PRUS.
12.35.25.COST.
12.35.25. ACCUMULATED JOB COST - UNIVERSITY RATE.
12.35.25. CP 91.686 SEC.
12.35.25. MS 582.867 KUN.
12.35.25. PF .076 KUN.
12.35.25. CM 98.642 KWD.
12.35.25. SR 251.950 UNS.
12.35.25. CURRENT JOB COST = $ 37.79
12.35.26.UEPF, 0.076KUNS.
12.35.26.UEMS, 582.867KUNS.
12.35.26.UECP, 91.686SECS.
12.35.26.AESR, 251.952UNTS. YZE6063.
    
```

Example 2.

```

1 AANYFWT. 84/05/02.UOFM CYBER A (03/20-BT).
08.41.52.PJO(T999)
08.41.52.$USER(YZE6063,)
08.41.53.RESOURC,PE = 3.
08.41.53.LABEL,NONAME,VSN = UC2336,D = PE,LB = KL,PO = R.
08.45.20.NT64, ASSIGNED TO NONAME , VSN = UC2336.
08.45.21.LABEL,DATASF,VSN = UC2337,D = PE,LB = KL,PO = W.
08.47.12.NT63, ASSIGNED TO DATASF , VSN = UC2337.
08.47.12.LABEL,ZZBIN2,VSN = UC2875,D = PE,LB = KL,PO = W.
08.48.36.NT62, ASSIGNED TO ZZBIN2 , VSN = UC2875.
08.48.37.A,SPEXAM2/PN = 0.
08.48.37.SPSS,I = SPEXAM2,G = NONAME,S = DATASF,X = ZZBIN2,L = LIST.
08.51.04.** FILE RETURNED ** NONAME
08.58.18. PERMANENT FILE UDCFIL8, 8 PRUS.
08.58.18.END SPSS
08.58.18.RETAIN,LIST.
08.58.20. LIST CONVERTED TO DIRECT ACCESS.
08.58.20. PERMANENT FILE LIST, 3151 PRUS.
08.58.20.COST.
08.58.20. ACCUMULATED JOB COST - UNIVERSITY RATE.
08.58.21. CP 97.644 SEC.
08.58.21. MS 44.346 KUN.
08.58.21. MT 50.134 KUN.
08.58.21. PF .048 KUN.
08.58.21. CM 95.168 KWD.
08.58.21. SR 287.575 UNS.
08.58.21. CURRENT JOB COST = $ 43.13
08.58.21.EXIT.
08.58.21.UEPF, 0.048KUNS.
08.58.21.UEMT, 50.134KUNS.
08.58.21.UEMS, 44.348KUNS.
08.58.21.UECP, 97.644SECS.
08.58.21.AESR, 287.577UNTS. YZE6063.

```

Example 3.

- Place files temporarily on disk pack "SHA". This pack has space for large files but they must be removed within two work days.
- Process your data files directly from tape. This eliminates the need to run a separate job to transfer the file to disk.

The three dayfiles in Examples 1, 2, and 3 indicate the TRACK LIMIT problem and possible solutions.

Example 1

An SPSS job that uses a binary data file (GETFILE). The binary file NONAME is 22000 PRUS. The binary file ZZSPS2 is a copy of NONAME that SPSS copies to use if more than one procedure call exists in the SPSS file. This file caused a TRACK LIMIT error because there was not enough available disk space to hold the file. If you are calling only one procedure, this copy can be suppressed by placing $x=0$ on the SPSS control statement. Otherwise

define this copy on pack SHA, as follows:

```

DEFINE,ZZSPS2/PN = SHA.
SPSS,i = sourcefile,g = getfile,x = ZZSPS2.

```

Be sure to purge this file immediately after the job ends. Notice that NONAME is stored on a removed disk pack.

Example 2

The same SPSS job. This time enough room exists on the CA family disks to complete the job.

Example 3

The SPSS job reads the binary data file off one tape and writes the resulting binary data files to two other tapes. DATASF is the SAVEFILE created by SPSS and ZZBIN2 is the intermediate file used by SPSS if there is more than one procedure call in the directives of SPEXAM2. Output of job is written to LIST.

Before you run a tape job, run a small job with some sample data to ensure execution of the larger job.
(Peter Oberg)

HELP-Line

NEW HOURS

As part of our continuing effort to provide prompt and convenient service to our users, HELP-line hours have been extended by one hour in the morning. The new hours are 8 a.m. to 5 p.m., Monday through Friday.

Consultants are available during these hours to answer questions and provide general assistance. If you have a question about our facilities and services, need general guidance in using our systems, or want to make suggestions about our services, call the HELP-line, 376-5592.

Statistics Packages

BMDP82

On June 12, 1984, the FUTURE version of BMDP (the 1982 version) will be made current, and the current version (the 1981 version) will be made PAST.

The PAST version of BMDP (BMDP79) will disappear into oblivion (that's near Menominie). Anyone who still needs this version should contact Bruce Center, 376-2825.

Two new programs have been added to BMDP: BMDP1T (univariate and bivariate spectral analysis) and BMDQ3M (block clustering by an improved method over that used in BMDP3M).

In addition, two new features have been added to BMDP to help generate BMDP instructions (the CDC implementation of these new features uses different symbols from those documented in the *BMDP 1983 User Manual*):

- The "FOR %" notation ("FOR ?" in the CDC version) generates several similar instructions from a single statement. For example, you can specify:

```

FOR K = 5 TO 20.
? X(K) = LOG(X(K)). ?

```

to generate the following set of transformations:

X(5) = LOG(X(5)).
 X(6) = LOG(X(6)).
 .
 .
 .
 X(20) = LOG(X(20)).

This notation can be used to generate multiple versions of an instruction, a paragraph, or a problem. It may also be used, with the symbol “!”, to generate names. For example, specify:

```
NAMES ARE AGE
  FOR J=1 TO 30. ? , SCORE!J ?
                                     , TOTAL.
```

to generate the sentence:

```
NAMES ARE AGE, SCORE1, SCORE2, ...,
  SCORE30, TOTAL.
```

- The INCLUDE feature incorporates BMDP instructions stored in a file into a group of instructions. For example, suppose that a permanent file INCLUDE contains 60 records of the following form:

```
T1 /TRANSFORM
T1 USE=AGE GE 20 AND SEX
  EQ 2.
T1 IF (X(3) GT .06) THEN...
.
.
.
T1 IF (X(305) EQ XMIS AND ...
```

where T1 is the name you have given this set of transformations. T1 is in character positions 1 and 2 of each record, and the transformation statements begin in or after character position 11. To use the transformations in BMDP1R, specify:

```
GET,MFFILE=INCLUDE.
GET,GTFILE=MYSVFIL.
BMDP1R.
7/8/9 End of record
/CONTROL MACUNIT IS n. /END
/INPUT UNIT IS m. CODE IS
MYDATA.
```

```
FOR ? INCLUDE T1 ?
/REGRESS...
/END
```

where n and m are any positive integers (less than 100) except 5. The first eight characters of each record on the INCLUDE file contain the characters associated with that instruction, left-justified. The ninth and tenth positions must be blank in the CDC version.

For more complex examples and more complete descriptions, see the *BMDP 1983 User Manual*, now available at the Computer Store, 20 Experimental Engineering. On the CYBERS, you can obtain instructions on how to use BMDP82 on our system, a description of how it differs from the Manual, and a discussion of the improvements over BMDP81 with WRITEUP(BMDP82). (Bruce A. Center)

Engineering Services

MONITOR FAN-OUT BOX

Engineering Services has produced a monitor fan-out box to allow extra monitors to be driven from a single system. This configuration is useful in a teaching environment. The fan-out box is self-contained; it has its own power supply and monochrome video drivers. Any number of monitors with a maximum cable length of 25 feet can be configured in this system. For more information about it or other special configuration needs, contact Gene Kath at Engineering Services, 376-7584.

Math and Statistics Libraries

MINNLIB ADDITIONS ON THE CYBERS

On Tuesday, June 12, we will add routines to the MINNLIB library on

the CYBERS to match the ones on the CRAY version of MINNLIB. The routines are:

```
ISRCHI  ISRCHR  MBANR
MEXTI   MEXTR  MSOLC
MSOLD   MSOLR  MSYINP
MSYINU  MSYSOP MSYSOU
MTRIR   PRNPLO SCLPL
VFREQI  VFREQR VGSTI
VGST2I  VMRG2I  VMRG2R
VMRG4I  VMRG4R VQSTI
VQSTR   VSRT1I VSRT1R
VSRT2I  VSRT2R
```

Programming Languages

NEW PASCAL VERSION

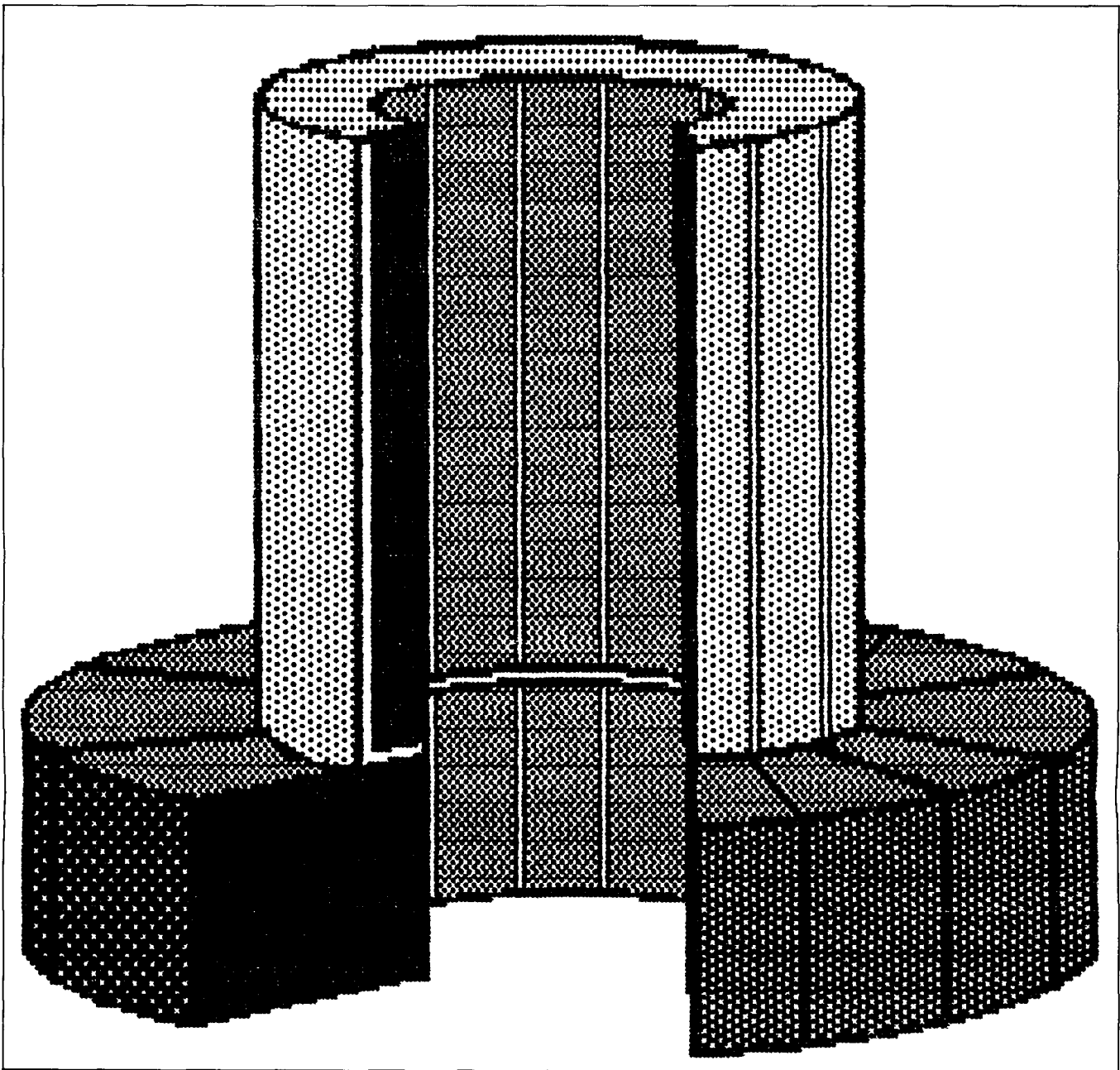
On June 10, FUTURE(PASCAL) will become current, and a new FUTURE will be installed. After June 10, current PASCAL will no longer automatically rewind the program source file unless that file is your primary file (accessed by OLD or NEW. Exhibit 1 shows the current and future status of Pascal versions on our CYBER systems.

NEW M77 VERSION

On June 10, the future version of M77 (2.5) will become current and the current version (2.4) will be moved to past. The major change in the new version is that error messages are now numbered. See the article in the May Newsletter for more information.

	Through June 10	After June 10
Current PASCAL	Version 4.I	4.J
Future PASCAL	Version 4.J	4.0
Past PASCAL	Version 3.4	3.4

Exhibit 1. Pascal versions on CYBERS CA, ME, and MD.



"Portrait of a Supercomputer" The CRAY-1, drawn by Mark McCahill on an Apple Macintosh.

Grants for Research

RENEW UCC GRANTS NOW

We remind all users that all UCC grants end on June 30, 1984. Please renew your CYBER grants if you have not already done so. We will continue this grants program, which allows non-funded graduate students and faculty to obtain \$1000 of service for a \$30 payment.

CRAY GRANTS AVAILABLE JULY 1

Large grants for CRAY time will be available to University faculty and staff researchers beginning July 1, 1984. Legislative funding to establish a Supercomputer Institute has made these grants possible. We are still working out details, but we can assure you that a generous allotment of CRAY time, probably five to fifteen hours, will be available for the 1984-85 fiscal year.

We urge you to be ready to use these grants July 1, since delays will cause unnecessary congestion and increased turnaround time during the last half of the year. We hope that these grants will encourage intensive research limited only by your imaginations.

CYBER 205 grants will also be available as part of the Supercomputer Institute funding. More on this in future *Newsletters*.

Data Base Update

CALL FOR PAPERS

The International Conference on Data Bases in the Humanities and Social Sciences will hold its 1985 meeting from June 22-25, 1985 at Grinnell College, Grinnell, Iowa.

The conference invites papers that focus on opportunities for data base users provided by new technologies such as microcomputers, videodiscs, national and international communication networks, on-line catalogues, and electronic bulletin boards.

Abstracts of papers intended for inclusion in the program should be submitted before September 1, 1984. The full names of all authors and complete addresses should appear on the front page. Abstracts should be typed in English, double-spaced, and should be no longer than 500 words.

The conference will include presentations, demonstrations, vendor displays, and ample opportunities for informal discussions. Audio-visual and computing equipment will be available for presenters and participants.

The registration fee—which includes conference activities, the published proceedings, receptions, meals, and travel between the Des Moines airport and Grinnell is \$125 (U.S.).

For additional information, contact:

Thomas F. Moberg
ICDBHSS/85 Coordinator
Grinnell College
P.O. Box 805
Grinnell, Iowa 50112-0810
USA
(515) 2367-2570

Microcosm

THREE NEW UTILITY PROGRAMS FOR THE ZENITH Z100

The Microcomputer Systems Group is pleased to announce three new utility programs for the Zenith Z100 microcomputer: ALTFONT, ALTKEYS, and ALTPRINT. These programs all run under the ZDOS operating system.

Как прекрасна жизнь! Небо голубое, светило солнце, мы

работаем в Микрокомпьютерной группе.

¿Dónde va el señor?

Die Bücher sind schön.

Der Täter ist üblich auf der Straße.

Sample output in three languages from the new Z-100 utility programs.

The Z100 has a soft character set and keyboard mapping. This means that you can change the characters the Z100 displays. You can also change the codes produced by keys on the keyboard. You could use these features to change your keyboard layout from the standard "QWERTY" layout to the Dvorak keyboard layout, or you could define some special characters that are not available in the standard ASCII character set.

The ALTFONT program edits the character font definitions. The Z100 uses these definitions to produce the pattern displayed for each character. The pattern for a character is defined as a matrix eight dots wide and nine dots high. You can use the ALTFONT program to create new character definitions, or to edit existing definitions.

With the ALTKEYS program, you can change the character codes produced by the Z100 keyboard. Both ALTFONT and ALTKEYS work by altering a ZDOS system file. Once the altered system file is installed, the changes you have made go into effect.

The ALTPRINT program is typically used in conjunction with the ALTFONT program. Once you have created and installed a character font on your machine, you can display the new characters on your screen. To print files containing the new characters, you must use ALTPRINT.

To use ALTPRINT, you need an Epson FX-80, RX-80, or MX-80 printer with graphics capability. Normally, printers use the character set that is built into the printer's hardware. The ALTPRINT program uses the character font definitions installed

on the Z100, rather than the standard ASCII character set built into the printer.

All three programs are available on the ZDOS utilities disk, available at the Computer Store, 20 Experimental Engineering. If you need more information about these or other programs on the ZDOS utilities disk, call the Micro HELPLINE, 376-4276 (DR MICRO), or visit us in 125 Shepherd Labs. Our hours are 10 to 12 a.m. and 2 to 4 p.m., Monday through Friday. (Mark McCahill)

U OF M MICRO USERS GROUP

The University of Minnesota Micro Users Group meets at 3:15 p.m., Thursday, June 7, in 555 Diehl Hall on the east bank of the Minneapolis campus. This month's speaker is David S. Walonick, President of Walonick Associates, and the designer of STATPAC, a statistical analysis package that he will discuss at the meeting. STATPAC can handle up to 255 variables and 5000 cases, and provides frequency distributions, cross tabs, chi-squares, t-tests, multiple regression, analysis of variance, and more. It requires an IBM-PC, 128K RAM, and two disk drives (floppy or hard). For more information, come to this month's meeting of the Micro Users Group.

The Classifieds

FOR SALE

NEC 3510 Spinwriter daisy wheel printer with tractor feed—\$1200. Like new condition, letter quality, serial interface. Call Thomas Jones, 373-3307.

Summer Short Course Schedule

INTRODUCTORY COURSES

Prices: U. student \$10, U. staff \$20, Non-University \$30

- 010 Introduction to Computer Terms (Jerry Larson)
Jun 18-22 (MWF) 3:15-5 p.m.
- 020 A Taste of Computing (staff)
Jun 25-29 (M-F) 3:15-5 p.m.
- 050 NOS (CYBER operating system) (Kurt Richards and Jon Jamsa)
Jul 9-25 (MWF) 3:15-5 p.m.
- 080 Introduction to Micros: CP/M (Mark McCahill)
Jul 9-12 (MTTh) 3:15-5 p.m.
- 090 Introduction to Micros: MS-DOS (Mark McCahill)
Jul 9-13 (MWF) 3:15-5 p.m.
- 040 Introduction to VAX/VMS (Brian Senn and Jerry Stearns)
Jul 10-24 (TTh) 2:15-4 p.m.
- 130 XEDIT (Tom Kovarik)
Jul 24-Aug 2 (TTh) 2:15-4 p.m.
- 150 Introduction to the CRAY-1 and COS (Kurt Richards)
Jul 30-Aug 3 (MWF) 3:15-5 p.m.

ADVANCED COURSES

Prices: U. student \$20-30, U. staff \$30-50, Non-University \$50-100

- 520 Lotus 1-2-3 (Simin Hickman)
Jul 16-18 (MW) 2:15-4 p.m. \$25-\$35-\$60
- 630 Beginning FORTRAN (Tom Kovarik)
Jul 30-Aug 17 (MWF) 2:15-4 p.m. \$30-\$50-\$65
- 640 Beginning Pascal (Peter Oberg)
Jul 30-Aug 10 (MWF) 3:15-5 p.m. \$25-\$40-\$60
- 530 SPSS (statistics package) (Bruce Center)
Jul 23-27 (MWF) 2:15-4 p.m. \$20-\$30-\$55
- 570 TELL-A-GRAF Graphics (Brian Senn)
Aug 7-16 (TTh) 3:15-5 p.m. \$30-\$45-\$75

REGISTRATION: You can register at the UCC Computer Store, 20 Experimental Engineering (hours: 9 a.m. to 4:30 p.m., Monday through Thursday; 9 a.m. to 3 p.m., Friday). A self-service terminal for registration is located inside the store. We accept mail registrations for an additional \$1 fee per class. The deadline for registration is store closing on the last working day *before* the class begins. You may pay course fees with cash, check, University journal voucher, or you can charge them to your non-instructional UCC user account.

REFUND POLICY: No refunds are made after the class begins. Refunds are made in the same form as the fee was paid, i.e., check, journal voucher, UCC account credit.

If you have questions about short courses or about registration, call Jerry Stearns, 376-8806, or see WRITEUP(CLASSES) on the MERITSS or CYBER CA systems.

Computer Store

EXPANDED MICRO DISK SELECTION

The UCC Computer Store has expanded its selection of microcomputer disks. We now offer popular prices for IBM, Nashua, and Dyson. All are available in single and double-sided 5¼" sizes. For those of you who use 8" disks, single-sided Nashua and double-sided IBM are available.

The Computer Store, 20 Experimental Engineering, is open from 9 a.m. to 4:30 p.m., Monday through Thursday, and from 9 a.m. to 3 p.m., Friday. You can purchase items with University journal vouchers, non-instructional user numbers, check, or cash. If you have any questions about disks for your micro, call us at 373-4877.

All Systems Bulletins

JULY 4 HOURS

Our schedule for the July 4 holiday will be:

	DOWN	UP
CRAY	Midnight Tue 7/3	6 p.m. Wed 7/4
CYBER CA	4:00 a.m. Wed 7/4	6 p.m. Wed 7/4
CYBER ME	3:30 a.m. Wed 7/4	6 p.m. Wed 7/4
CYBER MD	1:30 a.m. Wed 7/4	6 p.m. Wed 7/4
VAX 11/780	4:00 a.m. Wed 7/4	6 p.m. Wed 7/4
Exp. Engineering I/O Station	Midnight Tue 7/3	8 a.m. Thu 7/5



Six lines in a file there be;
One for you and one for me,
One to comment, one to shun,
One to test and one to run

A computer wizard casts a spell. Drawn by Mark McCahill on an Apple Macintosh.

PHONE NUMBERS

<p>Access:</p> <p>CYBER(CA)—10, 30 cps376-5730 —120 cps376-5706</p> <p>MERITSS(ME)—10, 30 cps376-7730 —120 cps376-7120</p> <p>VAX/VMS(VA)—(autobaud)376-9770</p> <p>Budgets373-2521</p> <p>Computer-Aided Instruction376-2975</p> <p>Computer Hours (recorded message)373-4927</p> <p>Computer Store373-4877 9 a.m.-4:30 p.m., M-Th; 9 a.m.-3 p.m., F</p> <p>Consulting</p> <p> HELP-line376-5592 9 a.m.-5 p.m., Monday-Friday</p> <p> Business Data Products376-1761 1-3 p.m., Monday-Friday</p> <p> Statistics Packages376-5062 1-2 p.m., Monday-Friday</p> <p> Data Bases376-1761 10-11 a.m., Monday-Friday</p> <p> Microcomputers376-4276 10-12 a.m. and 2-4 p.m., Monday-Friday</p> <p> Non-Numeric Computing376-2944 1-3 p.m., Monday-Friday</p> <p> TELL-A-GRAF/DISSPLA376-2663 1-3 p.m. Tuesday, Thursday</p> <p>Contract Programming376-1764</p> <p>Data Base Applications376-1764</p> <p>EDUNET Liaison373-5780</p>	<p>Engineering Services376-1023, 376-8153</p> <p>Equipment Purchase/Information376-8153</p> <p>Experimental Engineering I/O373-4596</p> <p>Graphics Software376-5592</p> <p>HELP-line376-5592 9 a.m.-5 p.m., Monday-Friday</p> <p>HOURS-line (recorded message)373-4927</p> <p>Information, Experimental Engineering373-4360</p> <p>Information, Lauderdale373-4912</p> <p>Instructional Labs376-2703</p> <p>Instructional Services373-7745</p> <p>Lauderdale Computer Room373-4940</p> <p>Lauderdale Services373-4995</p> <p>Lauderdale Services Manager373-7538</p> <p>Lauderdale Users' Room373-4921</p> <p>MECC Liaison373-7745</p> <p>Newsletter Subscription373-4912</p> <p>Permanent File Restoration376-5605</p> <p>Professional Services Division (PSD)376-1764</p> <p>Project Assistance376-1764</p> <p>Reference Room373-7744</p> <p>Remote Batch (RJE) Services376-2703</p> <p>Short Courses376-8806</p> <p>Shuttle Bus Service376-3068</p> <p>System Status (recorded message)373-4927</p> <p>Tape Librarian: see Lauderdale Services</p> <p>Text Processing Services376-2943</p> <p>User Accounts373-4548</p>
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OPERATING HOURS

	CYBER (CA)	Low rate	CRAY (CR)	MERITSS (ME)	VAX (VA)
M-F	7 a.m. - 4 a.m.	8 p.m. - 4 a.m.	7 a.m. - midnight	7:45 a.m. - 3:30 a.m.	8 a.m. - 6 a.m.
Sat	4 a.m. - 5:15 p.m.	4 a.m. - 5:15 p.m.	7 a.m. - 5 p.m.	7:45 a.m. - 3:30 a.m.	24 hours
Sun	4 p.m. - 1 a.m.	4 p.m. - 1 a.m.	4 p.m. - midnight	4 p.m. - 3:30 a.m.	24 hours

PUBLIC LABS—TWIN CITIES CAMPUS

Location	Batch	Interactive	Micro	Location	Batch	Interactive	Micro
<i>East Bank</i>				<i>West Bank</i>			
Arch 160		X	X	BlegH 25		*	
CentH		X		BlegH 90	X		
ComH		X		BlegH 140		X	
DiehH 270, 207		X		MdbH		X	
EltH 121, 125		X		OMWL 2		X	
EltH N640	X			SocSci 167			X
Exp Eng 140		*		<i>St. Paul</i>			
FolH 14, 14a	X	X*	X	BaH		X	
LindH 26	X	X		ClaOff 125	X	X	
MechE 308		X		* Research cluster; access to CYBER CA and VAX/VMS			
Physics 69		*		X in interactive column indicates access to MERITSS			
SanfH		X					
TerrH		X					
VincH 4		X					
WaLib 204		X					

Contents

Interactive Procedures and NOS 2 CCL	43	Grants for Research	
CYBER Notes		RENEW UCC GRANTS NOW	49
TRACK LIMIT PROBLEMS	46	CRAY GRANTS AVAILABLE JULY 1	49
HELP-Line		Data Base Update	
NEW HOURS	47	CALL FOR PAPERS	50
Statistics Packages		Microcosm	
BMDP82	47	THREE NEW UTILITY PROGRAMS FOR	
Engineering Services		THE ZENITH Z100	50
MONITOR FAN-OUT BOX	48	U OF M MICRO USERS GROUP	50
Math and Statistics Libraries		The Classifieds	
MINNLIB CHANGES ON THE CYBERS	48	FOR SALE	50
Programming Languages		All Systems Bulletins	
NEW PASCAL VERSION	48	JULY 4 HOURS	51
NEW M77 VERSION	48	Summer Short Course Schedule	51
		Computer Store	
		EXPANDED MICRO DISK SELECTION	51

Michael M. Skow, Acting Director

The *UCC Newsletter* is published monthly by the University Computer Center. Deadline for articles is the 10th of the month preceding publication; deadline for short announcements is the 15th. The *Newsletter* is edited and coded for typesetting at the Computer Center, then typeset on a Linotron 202 and printed at the University of Minnesota's Printing and Graphics Arts Department.

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