

MILW
1129

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SPRING QUARTER USERS MEETING

Thursday, February 22
2:15 - 4:00 PM
Room 166 Physics
East Bank

YOU ARE WELCOME TO SUBMIT MATERIAL FOR PUBLICATION IN THIS NEWSLETTER; DEADLINE FOR THE MARCH ISSUE IS FEBRUARY 21.

UCC newsletter
volume 13 number 2 February, 1979

Editor : A. Koepke

Comments about the content of this newsletter, or suggestions for changes may be directed to the editor, 235a Experimental Engineering, 373-7744.

The University of Minnesota adheres to the principle that all persons shall have equal opportunity and access to facilities in any phase of University activity without regard to race, creed, color, sex, age, or national origin.

from user services

You have been asking us for an interactive 'query' terminal at Lauderdale and one in Experimental Engineering for several years, and we have been saying no because of overloaded ports on the Cybers. Happily, Larry Liddiard and his Systems and Operations staff now report that resources are available. So, at long last, the Field Engineering group has been authorized to install one CRT at each site. The terminal in the new consulting area at Lauderdale is 'hard-wired' to the front-end (PDP-11) of the Cyber 74/172, while the one in 140 ExpEng has dial-up capability.

During consulting hours at each site, the consultant on duty has exclusive use of the terminal. During non-consulting hours, the terminals are available to users with a five minute time limit. Do you need a quick fix? Do you want to activate a procedure file which submits a job, no complicated entries needed? Use one of the query terminals when a consultant is not on duty. Do you have a long file to edit or a list of data to enter? Then you know, and your colleagues in the two User's Rooms will know, that you should not be working at these terminals.

We are setting these up experimentally. Please respect the five minute rule and make the experiment successful.

* * *

We would like to call to your attention the specialized consulting available to computer users in the liberal arts and humanities. Our scheduled consulting list shows which consultants are particularly knowledgeable in text formatting, data base development and use, and languages particularly suited to character manipulation, for example, SNOBOL. Two UCC consultants who can be most helpful in these areas are Kevin McMahon and Sara Graffunder. In addition to our consultants

Vicky Walsh
Classics Department
109 Folwell Hall
373-7706

is a volunteer who is willing to assist you in defining projects and deciding whether computer applications are appropriate.

T.D. Hodge, 373-5599

multiple copies

When you wish to make more than one copy of a file, you may specify the number of copies with the NC parameter on the COPY and COPYEI statements. See WRITEUP(CONTROL=COPY) and WRITEUP(CONTROL=COPYEI) for the exact format of these statements.

Because this copying capability has been added, the FETCH type package, COPYM, will be removed from the system.

T.J. Hoffmann, 376-5262

setting job limits

Remember when you used the job card time limit parameter, T (e.g., T40) to prevent your job from using all your available funds up in an infinite loop? Do you also remember how mad you were when the MT or MS charges far exceeded the CP charges and you used up your funds anyway? Well, take heart friends, with the NOS system you need no longer worry about this. Through the use of the SETJSL and SETASL control statements, you now have the ability to set cost limits for a job step or for the entire job. The forms of these control statements are SETJSL(n) and SETASL(n) where n is the number of SRUs that you want to limit yourself to. The value of n is assumed to be decimal but can contain the suffix B or D for octal and decimal, respectively.

The SETJSL control statement sets an SRU limit for each subsequent job step. Thus, SETJSL(40) would allow each subsequent control statement to consume 40 decimal SRUs.

The SETASL statement sets an accumulated limit for the entire job. Thus, SETASL(40) would terminate the job after 40 SRUs had been used no matter how many control statements were involved.

The system will not allow you to SETJSL larger than the limit set by SETASL. You can determine what limits are presently enforced by using the ENQUIRE(U) statement in batch (or E,U in timesharing). The default limit is taken from the account validation in the LIMITS output.

As you may have guessed by now, JSL stands for job step limit and ASL stands for accumulated SRU limit.

Although the T parameter and the SETTL control statement can be used to control CP charges, we suggest that most people should set dollar (SRU) limits using SETJSL and SETASL. Since the internal rate charged is \$0.16 per SRU you could limit a job to \$1.60 (10 SRUs) by doing SETASL(10D) at the start of the job. This gives much better control of funds than the time limit does. The maximum value that can be used for n is determined by your user number and can be found on the LIMITS output.

Most accounts will have an infinite SRU limit set by default when the account is opened. If you wish to change this limit, please contact the accounting office at 373-2521. Since only certain distinct values are permissible and charge rates vary, please be certain of the setting you want before calling. If we find that certain new values are more desirable than those now being used, we may find it necessary to change the available settings. When this is done, your limit will remain as close as possible to its present setting. We will announce any such changes in this newsletter.

The job card T parameter and the SETTL control statement now both assume a decimal number for the value given. This is a recent change as you may have noticed from the dayfile messages given on SETTL. The actual time limit set for a job is calculated from the T or SETTL parameter as follows:

(continued, p. 9)

$$\text{millisecond time limit} = \frac{|(N+7)/8*8*1000|}{|4096|} * 4096$$

where N is the job card or SETTL parameter. For example:

N	time limit in milliseconds
5	4096
10	12288
20	20480
30	28672
40	36864
50	53248
60	61440
120	118784
200	196608

Another limit that may be used to control jobs is the control card limit set for the account when it is opened. This limit, which also can be found on the LIMITS output, is generally set to infinite for most accounts. There is no control statement to change this limit while the job is running, but you can alter your account limit by calling the accounting department at 373-2521. Remember, this will be a maximum limit for all jobs that you run.
R.T. Franta, 376-3963

preset core values

When the Cyber loader loads your program for execution for most languages, it presets your program variables, blank common, and labeled common to a value specified by the individual language. Here is what some languages specify:

PASCAL,MNF 6000 0000 0002 0400 0000B+address
 COBOL 5555 5555 5555 5555 5555B
 COMPASS,FTN unspecified
 SIMULA,ALGOL unspecified

For those languages that do not specify a preset core value, the default has always been zero. However, we plan to change this default preset value to

6000 0000 0004 0400 0000B+address.

Thus, if you reference an unset variable as a real number, you will get a

MODE 4 - INDEFINITE OPERAND

error. If you reference an unset variable as an integer, it will look like a very large integer. If you accidentally execute an unset variable, you will get a

MODE 1 - ADDRESS OUT OF RANGE

error.

This change will occur on Thursday March 22, during the Spring Quarter break. Please note that this will affect only COMPASS, FTN, SIMULA, and ALGOL users. Other language processors that specify preset values will remain unchanged.

If you wish to try this out before March 22, you may include a LDSET(PRESETA=DEBUG) loader control card before you execute your binary program. For example, for an FTN program:

```
FTN,OPT=2.
LDSET(PRESETA=DEBUG)
LGO.
```

If you have existing programs that depend on core being preset to zero (a poor programming practice; you should not depend on any particular preset value), you can still get values set to zero after March 22 this way:

```
LDSET(PRESET=ZERO)
LGO.
```

More information on the LDSET loader control card can be found in the Cyber Loader Reference Manual, pages 2-6 through 2-9 (CDC pub.# 60429800F). If you have any questions, please call

B. Blasing, 373-4573

terminal maintenance

As a service to the University community, the UCC Engineering Services group offers maintenance contracts on computer terminals, at the rate schedule shown below. Engineering Services has also prepared a short writeup describing installation and in-warranty service, service responsibilities, and exclusions for these maintenance contracts. For a copy of this brief description, call Amy Koepke, 373-7744, or Dan Whealdon, 373-4877.

These rates are applicable to University Departments and affiliated agencies in the Twin Cities metropolitan area only. Other rates may be established if you call one of the following people and request a quote:

- (1) Dan Whealdon, 373-4877, 376-4889;
- (2) Doug Parkes, 376-7067;
- (3) Abe Franck: 376-7291, 376-1023

ANNUAL RATES FOR MAINTENANCE CONTRACTS

Teletypewriters:	Teleray:
33RO : \$102.00	3541: \$ 87.00
33KSR: \$152.00	3511: \$ 87.00
33ASR: \$170.00	3711: \$100.00
35RO : \$128.00	3811: \$125.00
35KSR: \$178.00	3931: \$135.00
35ASR: \$196.00	Any : \$ 70.00
43KSR: \$165.00	(during factory warranty)
DECwriter:	Data Products PortaCom:
LA-36: \$185.00	PC-8110: \$210.00
TI Silent 700:	Hazeltine:
735: \$250.00	1200: \$240.00
745: \$154.00	2000: \$265.00
TERAK:	Control Data:
All models: RFQ	713: \$216.00
Acoustic couplers:	Xerox:
Multi-tech: \$15.00	1760: \$480.00
Others : \$25.00	

The Engineering Services group also provides maintenance for the DEC PDP-8, DEC PDP-11, and Univac 1004 remote batch terminals. A quote for a particular system can be provided upon request.

library changes

The following files will be deleted from UN=LIBRARY during the quarter break. In general, these are out of date or need to be moved elsewhere.

name	machine	description
ANALYZE	172	Deadstart dump analyzer binary (to be moved elsewhere)
APLB	74,172,6400	APL binary (to be moved elsewhere)
APLCVRT	6400	Old APL procedure file
APLCVIB	6400	Binary file used by APLCVRT
APLOLD	6400	Same contents as APLT
APLT	74,172,6400	APL binary (to be moved elsewhere)
BANDIT	74,172	Game (to be moved to UN=GAME)
BASIC21	6400	Describes differences between BASIC 2.0 and 2.1
BIGPAL	PN=SPL	PDP-11 assembler (will be moved elsewhere)
CAILIB	6400	Computer aided instruction library (to be moved elsewhere)
CAT	6400	Notice saying "use CATLSYS"
CHAR21	6400	Describes differences between KRONOS 2.0 and 2.1 character sets
COMET	6400	Comet Kohoutek program for 1973-74
COMP21	6400	Describes KRONOS 2.0 to 2.1 conversion for COMPASS
CONF	6400	Describes 1976 computer conference
FORT	6400	Ancient MNF list of changes
HIDESH	6400	Hide and seek game (to be moved to UN=GAME)
INFO	6400	Out of date data base for old INFORM program
KRON21	6400	Describes KRONOS 2.0 to 2.1 conversion
MASTERS	74,172,6400	Game (to be moved to UN=GAME)
MNF	6400	Ancient version of MNF
MNFFUT	6400	Ancient version of MNF
MNFLIB	6400	Ancient version of MNF library
MUAMEET	6400	1975 MUA meeting notice
NOTE	6400	Notice saying "Use SYSNOTE"
OMNITAB	74,172,6400	OMNITAB binary (will be moved elsewhere)
PAL	PN=SPL	PDP-11 assembler (will be moved elsewhere)
PASCAL	6400	Ancient version of PASCAL
PFDOC	74,172	Now use WRITEUP(DUMPF)
PFSTIM	172	STIMULATOR script
PHONES	6400	Describes phone rotary conversion in 1975
PLILGO		System 2000 binary routines
PROCPAC	6400	Now use WRITEUP(PROCPAC)
PSCINFO	6400	Ancient information file for PASCAL
PSCLIB	6400	Ancient PASCAL library
RANDB	6400	Binary with unknown purpose
RANDOM	6400	Binary with unknown purpose
REFORMS	74,172,6400	Notice saying "Use X,REFORM"
RWEXIT	6400	System 2000 binary routines
SCALEX	6400	Subroutine to print a floating point number in BASIC
SIRHELP	74,172	Help file for SIR (will be moved elsewhere)
SNOINFO	6400	Now use WRITEUP(SNOBOL)

SPELL	74,172,6400	Game binary (will be moved elsewhere)
SYSDATA	6400	Out of date writeup on system status
SYSDOWN	6400	Out of date writeup on system status
SYSWARN	6400	Out of date writeup on system status
TYPESET	74,172,6400	Ancient version of TYPESET
VIKINGS	74,172	Game (to be moved to UN=GAME)
XEDBUGS	6400	Ancient bug listing for XEDIT
XMTWARN	6400	Ancient XEDIT writeup
X217INF	6400	Ancient XEDIT documentation
X217I64	6400	Ancient XEDIT documentation
XEDIT	74,172	Ancient version of XEDIT
ZZZZS1	74,172	Ancient loader statistics
ZZZZS2	74,172	Ancient loader statistics

M.J. Frisch, 376-1636

statistics packages

For the last four years, we have gathered detailed monthly usage counts for the statistical packages in the system. SPSS, OMNITAB, and ISIS have counts for each overlay that is a separate statistical procedure. The following table gives some interesting trends for total package use on the CDC 6400, the Cyber 74, and the Cyber 172, beginning with 1975.

	1975	1976	1977	1978
Average use/month	14,378	17,342	17,051	19,068
SPSS	73.4%	78.1%	83.7%	88.3%
OMNITAB	9.1%	7.2%	6.7%	4.9%
ISIS	8.3%	10.5%	5.5%	2.7%
BMDP	NA	NA	1.0%	2.1%
BMD	5.0%	2.3%	1.2%	0.6%
UMST	3.8%	1.4%	1.1%	0.8%

NA: package not available

The table shows that the use of SPSS dominates and continues to grow, BMDP usage is growing gradually, and OMNITAB, BMD, ISIS, and UMST usage is shrinking.

The following table has entries for each general statistical procedure in decreasing order of use. Each set of entries is also in decreasing order within their groups. The programs listed were used by at least 2.0% of the total packages used. (The exact numbers are available at UCC.)

This table, along with the previous one, indicates that while the use of SPSS and BMDP continues to grow, individual procedures from other packages are still popular.

S.P Yen, 373-4886

(continued, p. 11)

new fortran compiler

	1975	1976	1977	1978
Frequency:	SPSS OMNITAB	SPSS OMNITAB	SPSS OMNITAB	SPSS OMNITAB BMDP2D
Cross-tabulation:	SPSS	SPSS	SPSS	SPSS
Regression:	SPSS OMNITAB BMD02R UMST580 BMD06R ISIS	SPSS OMNITAB BMD02R BMD07R BMD05R ISIS UMST580	SPSS OMNITAB ISIS	SPSS OMNITAB ISIS BMDP2R
Descriptive statistics:	SPSS ISIS UMST600 OMNITAB	SPSS OMNITAB ISIS UMST600	SPSS OMNITAB ISIS UMST600	SPSS OMNITAB ISIS UMST600
ANOVA/MANOVA:	SPSS ISIS BMD08V BMD01V UMST570 BMD10V OMNITAB	SPSS ISIS BMD08V UMST570 OMNITAB	SPSS ISIS BMD08V OMNITAB UMST570 BMDP2V OMNITAB	SPSS ISIS BMD08V BMDP2V UMST570 OMNITAB
Correlation:	SPSS UMST500 OMNITAB	SPSS OMNITAB	SPSS OMNITAB	SPSS OMNITAB
T-Test:	SPSS OMNITAB	SPSS OMNITAB	SPSS OMNITAB	SPSS OMNITAB
Factor Analysis:	SPSS UMST550 BMD08M	SPSS UMST550	SPSS UMST550	SPSS UMST550
Discriminant Analysis:	SPSS	SPSS	SPSS	SPSS BMDP7M

During the past two years, Jim Mundstock, with the help of Lawrence Liddiard and Clive Schofield, has rewritten the MNF Fortran compiler to conform to the Fortran77 standard that was approved and published by the American National Standards Institute in April, 1978. This revision has been named M77 (M for Minnesota, and 77 for the new 77 standard). M77 is especially suited to debugging use and accepts nearly all of the features of the MNF, FTN4, and FTN5 compilers. It will be ready for use on an experimental basis on March 1, 1979.

M77 is intended primarily for debugging use, but it is also very efficient in compilation and execution. The main objective of M77 is to provide 'THE MAXIMUM AMOUNT OF INFORMATION PER RUN' and this is achieved in three ways:

1. Excellent source program error messages are provided. Many errors are detected before the program starts execution. Failure to read the messages could waste a lot of your time.
2. The use of the T option on the M77 control statement causes extensive error checking and label and subprogram counts to be done during program execution. Thus, although the use of M77(T) will cause the program to execute more slowly, it will detect errors that would not be found by other compilers. The use of M77(T) is strongly recommended for the early 'debugging' runs of a program.
3. The use of MANTRAP makes debugging much easier.

The main features of M77 that are not in MNF are the new data type CHARACTER, array referencing allowing seven subscripts with lower bounds, variable dimension subscripts allowed in COMMON, and the alternate return. Many of the other features of the 77 standard are already in MNF: the structured programming statements IF, THEN, ELSE, ELSEIF, ENDIF; END= and ERR= IO processing; IMPLICIT; PARAMETER. If you do not need one of the new features of M77, you will find that MNF and FTN4 are more reliable compilers for production program runs. Although only two major deficiencies of M77 are known, the major programs that we have to test Fortran compilers do not test these new features of M77. Therefore, users are CAUTIONED that a small sample program should be run on M77 and checked for accurate results, before any long production runs are contemplated. Since M77 will be considered experimental, we want all erroneous compilation and/or execution errors to be brought to the attention of a UCC consultant. We will refund charges on these jobs. If you find errors not documented in this newsletter or the PTR list, we will add a \$2.00 credit to the refund.

(continued)

documentation

New or revised WRITEUP documents (after Jan. 1):

AFLISTS Archived permanent files.
 CONSKED Consulting schedule.
 CPU CPU instructions.
 M77 M77 compiler for Fortran 77.
 PASCAL Pascal 6000 release 3 (indexed).
 PTOOLS Pascal software-writing tools (indexed).
 SEND Transmit files to the 6400.

New or revised published documents (after Jan. 1):

MERITSS Instant: Describes MERITSS services; includes descriptions of KRONOS commands and control statements (new document); replaces "Timesharing Guide to Computing."

1. The current CDC loader does not allow you to pre-set partial words of data in COMMON. Thus, CHARACTER variables in COMMON, set by DATA statements, will usually not be correctly initialized.

```
CHARACTER*10, ALPHA,BETA
COMMON/A/ALPHA,BETA
DATA ALPHA,BETA/'HELLO','DOLLY'/
```

will work since the variables start on word boundaries. However, the addition of

```
CHARACTER*3, DELTA
COMMON/CHAR/DELTA,ALPHA,BETA
```

would cause the previous DATA presetting to fail since ALPHA and BETA, although of 10 character word length, are forced by the COMMON statement to start at other than a word boundary. In addition:

```
CHARACTER*5, ALPHA,BETA
COMMON ALPHA,BETA
DATA ALPHA,BETA/'HELLO','DOLLY'/
```

will only have BETA set to 'DOLLY' due to the loader failure. FTN5 will be delivered this summer with a loader that will correct this problem for both FTN5 and M77.

2. List directed type character input must be contained within one record. (The 77 standard allows list directed character constants to extend over as many records as needed.) This deficiency is caused by the Z type records used to hold character data (blank suppression, that helped reduce disk field congestion in the older days, is now causing problems for fixed record input). If this deficiency is corrected, there still will be failure for a repeated multi-line character constant until dynamic memory allocation is used in M77 execution.

The major problems that we found when running MNF jobs on M77 were in the following areas:

1. Of the new M77 parameters, only B, I, L, and T are used in a manner similar to MNF. A summary of the new control statement parameters is given at the end of this article and on page 16 of the "M77 Guide."
2. The M77 ENTRY statement differs completely from the MNF statement. It requires that any dummy parameters associated with the ENTRY name be put on the ENTRY statement. Thus,

```
SUBROUTINE BUT(A,B)
.
.
ENTRY TAB
```

must have the entry statement changed to

```
ENTRY TAB(A,B)
```

3. Transmission of an intrinsic function as an actual parameter is done with an EXTERNAL statement in MNF; M77 uses the INTRINSIC statement. The EXTERNAL statement is still used for user or library subprograms.
4. DATA statement constants were not corrected to the type of the DATA variable in MNF, but that is now done for M77. That is, DATA A/2/ stores REAL 2.0 rather than INTEGER 2 in M77.
5. With M77, the default input mode ignores blank characters in input fields. For example, M77 reads ^6^3^ as 63 into an I5 field; MNF reads this as 6030. Use the BZ format field or the keyword parameter BLANK=ZERO in the OPEN statement to read blank characters as zeros.
6. With M77, the DO loop is not executed if the initial value is greater than the terminal value. MNF always executes the DO loop once (unless the Y option is used).

M77 LACKS THESE MNF FEATURES

This section lists the source language features of MNF that are not available in the M77 compiler. If you have an MNF program using any of these features, they must be changed if you wish to run the program under M77.

The following are not accepted by M77:

1. Statements:
 - ECS
 - LEVEL 2 statements
 - NAMELIST
 - TRACE ARITHMETIC (use M77(T=VALUES))
 - TRACE DO LOOPING (use M77(T=DOLOOPS))
 - TRACE FORMAT IO (use M77(T=FORMATS))
 - TRACE STATEMENT NUMBERS (use M77(T=LABELS))
 - TRACE SUBSCRIPTS (use M77(T=ARRAYS))
 - TRACE SUBPROGRAM CALLS (use M77(T=UNITS))
 - TRACE SUBPROGRAM ENTRY
 - TRACE SUBPROGRAM FLOW
 - TRACE SUBPROGRAM TIME (use M77(T=TIME))
 - TRACE TRANSFERS (use M77(T=GOTOS))
 - TYPE (as in TYPE REAL)
 - USE (use an editor)
2. Functions and subroutines:
 - EOF and IOCHec (use END= and ERR= parameters).
 - SLITE and SLITET
 - EXIT library subroutine.
3. Syntax:
 - The END= and ERR= parameters written with periods (as in .END.=10).
4. Reading into a text field in a FORMAT statement.
5. P and X specifications with no preceding number in a FORMAT statement.
6. The forms T0 or OX in FORMAT statements.
7. The form n/ in a FORMAT statement.
8. The single character representations of the relational operators.
9. The relational operators .NQ., .LQ., .LS., .GQ., and .GR.

(continued)

10. The following differences exist between MNF and M77:

- a. The ENTRY statements differ.
- b. The initial line of a statement must be non-blank in M77.
- c. M77 assumes zero trip do loops unless the M77(DO=OT) control statement is used.
- d. M77 always falls through to the next statement if a computed GO TO index is out of range.

M77 FEATURES NOT AVAILABLE IN FTN5

1. Cyber machine equivalent functions, DAD, DMU, DSB, FAD, FDV, FMU, FSB, ICOEF, IUEXP, NORM, PACK, RAD, RDV, RMU, RSB.
 2. TRACE statements.
 3. WHILE and ENDWHILE statements.
 4. The LIST, NOLIST, CODE, NOCODE, REFERENCES, and NOREFERENCES statements. FTN allows similar listing control in the form of C/ compiler directives.
 5. Conditional compilation using C* lines, see the M77(CC=character) control statement parameter.
 6. A / in a PRINT or WRITE list (MNF and M77 use this to print a blank line in format free output. Each / must be separated from other list items by commas).
 7. Variable edit descriptors V and = in FORMAT statements.
 8. Type integer datum of absolute value exceeding 2**47-1 being printed by a format free output statement as a character datum.
 9. The random number function reference in the form RANF(n).
 - *10. A simple variable as the name of a variable FORMAT.
 - *11. *...* fields in FORMAT statements.
 - *12. Commas omitted after the following fields in FORMAT statements: nX, 'cccccc', nHcccccc.
 - *13. The forms Dw, Ew, and Gw in FORMAT statements.
 - *14. Redundant parentheses in input or output lists.
 - *15. Format free input or output statement without the * FORMAT designator, i.e., READ,A instead of READ*,A.
 - *16. Octal constants of the form nnnnnB.
 - *17. Hollerith constants containing more than 10 characters.
 - *18. DATA statement list items of forms (constant list) or r*(constant list).
 - *19. The forms STOP c and PAUSE c, where c is not a CHARACTER constant.
 - *20. Comment lines with a \$ in column 1.
 - *21. More than one statement per line (statements are separated with a \$ sign).
 - *22. Two branch logical IF statement.
 - *23. The abbreviated logical forms .N., .T., .F., .A., .O., and .X.
 - *24. The special MNF 'constants' .INF. and .IND.
 - *25. Abbreviation DOUBLE for DOUBLE PRECISION.
 - *26. Definition of COMMON within a type statement.
 - *27. Continued END statement.
 - *28. Array names without subscripts used in expressions.
 - *29. An ASSIGNED label variable in an argument list.
- * means the feature has been retained only for compatibility with MNF.

These features will work on M77 and FTN5, but will very probably fail if the program is run on another manufacturer's equipment.

1. ENCODE and DECODE statements (the new standard has reading and writing of internal files that can replace these statements).
2. PUNCH statement.
3. The forms Fw, Ow(.d), Rw, and Zw(.d) in FORMAT statements.
4. Aw edit descriptor used for non-CHARACTER data (i.e., the old Hollerith constant and variable forms).
5. Variable format in non-character array.
6. BUFFERIN and BUFFEROUT statements.
7. READMS and WRITMS library subroutines (the new standard has direct access files that allow these statements to be replaced).
8. Files listed on the PROGRAM statement.
9. BUFL= parameter in the OPEN statement.
10. Repeated parenthesised constant list in DATA statement - r(constants).
11. Labelled COMMON storage may be preset by DATA statements in any program unit (not only in BLOCK DATA subprograms).
12. Names can have 7 letters (6 is standard).
13. Hollerith (3HABC or 'ABC'), octal (777B or O'777'), and hexadecimal (X'3FFF') constants.
14. .XOR. operator.
15. Complete generality of mixed-type arithmetic.
16. Masking expressions.
17. Multiple replacement statement.
18. RETURN statement in a main program unit.
19. AND, BOOL, COMPL, EOR, LOCF, MASK, OR, RANF, and SHIFT functions.
20. Overlays.
21. Sequenced source program, see the M77(SEQ) parameter.
22. Optional one trip DO loops.
23. BOOLEAN type statement and BOOL function.

DOCUMENTATION

1. "M77, A Guide," available as WRITEUP(M77), or as a free 16 page guide.
2. The M77 Reference Manual. (Should be ready by June, 1979.)
3. American National Standard Programming Language FORTRAN ANSIX3.9-1978 (reference copies in the UCC Reference Room).

L.A. Liddiard, 373-5239

(continued)

control statement summary

parameter	if omitted	if name only	action
B=<file name>	B=LGO	B=BIN	Binary file
BL	off	on	Burstable Listing
CC=<character>	off	CC=*	Conditional Compilation
DO	off	DO=OT/LO	control DO loops
DO=OT	off	on	One Trip DO loops
DO=LO	off	on	LOng DO loops
EL=<0...5>	EL=2	EL=0	Error message Level
ET=<0...5>	ET=4	ET=5	Error Terminate level
FS	off	on	Forced Stores
G=<file name>	none	G=SYSTEMTEXT	Get system text for COMPASS
GO	on	on	automatic load and GO
I=<file name>	I=INPUT	I=COMPILE	source Input file
L=<file name>	L=OUTPUT	L=LIST	source Listing file
LO	* LO=R/S	LO=A/M/N/R/S	source Listing Options
LO=A	off	on	reference map Attributes
LO=C	off	off	object Code listing
LO=M	off	on	block Map
LO=N	off	on	cross reference map Nulls
LO=R	on	on	cross Reference map
LO=S	on	on	Source listing
MAN	on	on	use MANTRAP
PD=6 or 8	PD=6	PD=8	Print Density (lines/inch)
PL=<number>	PL=2000	PL=5000	execution time Print Limit
PRE	-indefinite	+zero	PREset storage to zero
PW=72 or 136	* PW=136	PW=72	Page Width of source output
REW	* off	REW=B/I	REWind files
REW=B	off	on	REWind Binary file
REW=I	off	on	REWind source Input file
REW=L	off	off	REWind source Listing file
S=<file name>	S=SYSTEMTEXT	S=SYSTEMTEXT	Systems text for COMPASS
SEQ	off	on	SEQuenced source program
T	off	T=A/D/F/G/L/U	execution Tracing
T=A	off	on	check ARRAYS (subscripts)
T=C	off	T=L/U	COUNT number of executions
T=D	off	on	check DOLOOPS
T=E	off	T=A/D/F/G	check for execution ERRORS
T=F	off	on	check FORMATS
T=G	off	on	check GOTOS
T=L	off	on	count executions of LABELS
T=T	off	off	print execution TIME table
T=U	off	on	count program UNITS called
T=V	off	off	check arithmetic VALUES
X=<file name>	X=OLDPL	X=OPL	XTEXT file for COMPASS

* M77(SEQ) automatically selects (-LO,PW=72,REW=B/-I/-L)
A minus (-) deselected active parameters such as GO, I, L,
LO, MAN, i.e., -GO, or -MAN.

the suggestion box

MY EFFORTS TO SWITCH FREELY BETWEEN MNF AND FTN ARE HAMPERED BECAUSE MNF SEEMS TO DEMAND AN RFL CARD, EVEN FOR PROGRAMS OF MODEST LENGTH, WHILE THE CM DESIGNATION ALONE MAKES FTN HAPPY. COULD THIS BE CHANGED, PREFERABLY TO INCREASE THE DEFAULT RFL FOR MNF?

D.R.:05JAN79

We had thought we had given enough space to MNF for most jobs. However, a small increase for MNF seems reasonable and will be done next quarter break.

J. Mundstock

WE REALLY NEED A BETTER FTN POST MORTEM ERROR TRACER THAN AN EXCHANGE PACKAGE DUMP. DON'T TELL ME IT CAN'T BE DONE. THE BERKELEY 7600 HAS A ROUTINE, GRUMP, THAT DOES A WONDERFUL JOB.

V.I.:08DEC78

It could be done, but it is a lot of work and CDC has promised one of their own. We intend to wait for CDC's dump. They might get theirs out before we could put another one up.

J. Mundstock

COULD ACCOUNTING PRINTOUTS BE RUN DURING NON-BUSY HOURS? THEY MAKE FOR LONG DELAYS DURING THE BUSY WORKING HOURS.

E.F.:17DEC78

There are two 200-page printouts that print each morning at ExpEng. They are important, looked at, and needed as early as possible. This information is used by the administrative staff to open, close, and update accounts and expedite user accounting requests.

J. Foster

PRODUCTION USAGE SUMMARIES: Cyber 74/172

	Cyber 74 December, 1978	Cyber 74 December, 1977	Cyber 172 December, 1978
System resource units (SRU)	871,374 (1,006,615)	-	152,174 (333,238)
Batch jobs and MIRJE sessions	68,613 (74,288)	74,096 (81,281)	11,321 (15,218)
Central processor hours inc. DELAY	187 (212)	151 (183)	59 (134)
DELAY queue processor hours	70 (72)	44 (46)	6 (12)
MIRJE terminal hours	5,486 (5,747)	6,888 (8,450)	4,038 (5,323)
Mass storage transfers (KPR)	200,729 (214,116)	227,806 (297,368)	73,676 (135,453)
Magnetic tape transfers (KPR)	3,655 (8,631)	4,982 (6,801)	754 (2,354)
Pages printed, charged from UCC	715,676 (819,303)	726,827 (812,611)	printer removed
Cards punched	332,513 (487,574)	293,311 (322,374)	-
Microfilm frames produced	25,568 (26,266)	26,550 (264,706)	0 (313,793)
Status plotting production (feet)	6,959	6,544	-
Tapes mounted	6,623	9,130	3,078
Average file storage (char)	1,493.2 million	1,116.9 million	410.9 million
Mean time between failures	91.0 hours	9.3 hours	no failures
Available during scheduled hours	99.6 percent	96.7 percent	100.0 percent
SUPIO uptime during available hours	96.6 percent	97.3 percent	-

(totals in parentheses include staff development, accounting, and maintenance runs)

DOWNTIME SUMMARY: January, 1979 (Column 1, Cyber 74 : Column 2, Cyber 172)

	Monday-Friday 0800-1800		other		total	
Total possible scheduled uptime hours	220.0	220.0	310.0	309.0	530.0	529.0
Total downtime hours (see Schedule A)	1.7	2.7	4.2	0.9	5.9	3.6
Total uptime hours	218.3	217.3	305.8	308.1	524.1	525.4
Uptime (percent)	99.2	98.8	98.6	99.7	98.9	99.3
Average downtime per occurrence (min)	25.2	31.8	124.5	27.5	58.3	30.6
Mean time between failures (hours)	55.0	44.0	155.0	154.5	88.3	76.6
Subsystem failures						
SUPIO	30	-	37	-	67	-
TELEX	3	2	1	0	4	2
EXPORT	4	-	4	-	8	-

Schedule A: downtime hours

	Number		Total hours		Average minutes	
(1) Preventive maintenance over-runs	0	0	0.0	0.0	0.0	0.0
(2) Software related problems	0	1	0.0	0.2	0.0	9.0
(3) Hardware related problems	3	1	4.9	0.3	98.7	15.0
(4) Indeterminate problems	2	3	0.3	1.8	10.0	36.0
(5) External Problems	1	2	0.6	1.3	34.0	41.0

PRODUCTION USAGE SUMMARIES: CDC 6400

	December, 1978	December, 1977
Number of jobs run	131,491	114,153
Central processor hours	112	78
MERITSS terminal hours	15,676	14,976
Number of terminal sessions	28,910	27,513
Maximum number of simultaneous users	130	111
Average file storage (char)	346.2 million	220.1 million
Mean time between failures	209.3 hours	70.9 hours
Available during scheduled hours	99.9 percent	9839 percent

SUBMISSION SITE USAGE SUMMARY: TELEX EXCLUDED : January, 1979

submitted from	total jobs	%	pages printed	%	cards read	%
Lauderdale	2,546	3.3	463,136	34.5	1,449,286	14.5
ExpEng	7,107	9.3	227,803	17.0	2,300,466	23.0
West Bank	7,764	10.1	91,283	6.8	1,091,263	10.9
6400	219	0.3				
SUBMIT jobs	11,982	15.6				
SUPIO	47,201	61.4	560,860	41.8	5,174,056	51.7
TOTALS	76,819		1,343,082		10,015,071	

UCC Short Course Schedule for Winter 1979

Introduction to UCC.....: 2:15-4pm, Jan 4 (th), Arch 40, RTF
Intermediate FORTRAN.....: 2:15-4pm, Jan 8 - 26 (mwf), ForH 120, RTF
Introduction to System 2000.: 2:15-4pm, Jan 8 - 19 (mwf), MechE 18, JCC
PLOTAC.....: 7:30-9:30pm, Jan 16-18 (twth),Laud*,KMM
SPSS.....: 2:15-3:30pm, Jan 22-25 (mtwth), MechE 18, BH
\$ Programming Style.....: 2:15-4pm, Jan 23-Feb 1 (tth), Arch 25, RTF
SPSS On-Line.....: 2:15-3:30pm, Jan 26 (f), MechE 18, BH
Advanced System 2000.....: 2:15-4pm, Jan 22 - 26 (mwf), ChEng 240, SPN
NOS Control Statements.....: 2:15-4pm, Jan 29-Feb 14 (mwf), Ph 166, RTF
System 2000/PLI.....: 2:15-4pm, Jan 29 - Feb 2 (mwf), ChEng 50, JCC
Intermediate COMPASS.....: 2:15-4pm, Jan 29-Feb 9 (mwf), ForH 160, KCM
Pascal.....: 3:15-5pm, Jan 29-Feb 16 (mwf), ForH 120, ABM
\$ Intro - TERA Microcomputers: 6:15-7:30pm, Jan 30 - Feb 8 (tth), Aero 225, RR
SPSS (Crosstabs).....: 2:15-3:30pm, Jan 30 (t), Arch 40, SPY
SPSS (Regression).....: 2:15-3:30pm, Feb 1 (th), Arch 40, SPY
System 2000/Report Writer...: 2:15-4pm, Feb 5 - 9 (mwf), MechE 18, SPN
Introduction to Timesharing.: 2:15-4pm, Feb 6 - 8 (tth), MechE 18, RTF
Scientific Info Retrieval...: 2:15-4pm, Feb 6 - 15 (tth), Arch 40, JCC
Advanced Graphing.....: 7:30-9:30pm, Feb 6-8 (twth), Laud*, KMM
COBOL.....: 2:15-4pm, Feb 12-Mar 2 (mwf), Aero 309, JCC
Beginning FORTRAN.....: 6:15-8pm, Feb 13-Mar 8 (tth), MechE 102, RTF
NOS Control Language.....: 2:15-4pm, Feb 16 (f), Ph 166, RTF
MODIFY.....: 2:15-4pm, Feb 19 - 23 (mwf), MechE 18, RTF
Winter Quarter UCC User Mtg.: 2:15-4pm, Feb 22 (th), Ph 166
Art Packages.....: 2:15-4pm, Feb 27-28 (tw), MechE 18, KMM
DMS-170.....: 2:15-4pm, Mar 5 - 9 (mwf), MechE 18, JCC

* Lauderdale Conference Room, Lauderdale Computer Site, 2520 Broadway Dr.

NOTE: dollar sign (\$) indicates change since first publication.

Tentative UCC Short Course Schedule for Spring 1979

Introduction to UCC.....: 2:15-4pm, Mar 29 (th),, RTF
Beginning COMPASS.....: 2:15-4pm, Apr 2 - 13 (mwf),, KCM
Record Manager.....: 2:15-4pm, Apr 2 - 6 (mwf),, SAR
BMDP.....: 2:15-4pm, Apr 2 - 6 (mwf),, SPY
NOS Control Statements.....: 2:15-4pm, Apr 3 - 24 (tth),, RTF
Sort/Merge.....: 2:15-4pm, Apr 3 - 5 (tth),, SAR
Intermediate FORTRAN.....: 6:15-8pm, Apr 3 - 26 (tth),, RTF
Computing; what is it#.....: 2:15-4pm, Apr 9 - 11 (mwf),, LF/SG
Introduction to System 2000.: 2:15-4pm, Apr 9 - 20 (mwf),, JCC
Graphing and Graphics.....: 7:30-9:30pm, Apr 10 - 12 (twth),, KMM
Pascal.....: 3:15-5pm, Apr 16 - May 4 (mwf),, ABM
SPSS (computer neophytes)...: 2:15-3:30pm, Apr 16 (m),, SPY
SPSS (SPSS neophytes).....: 2:15-3:30pm, Apr 17 (t),, SPY
SPSS (SPSS intermediates)...: 2:15-3:30pm, Apr 18 - 19 (wth),, SPY
SPSS On-Line.....: 2:15-3:30pm, Apr 20 (f),, SPY
Computing: What is it#.....: 6:15-8pm, Apr 23 - May 7 (m),, LF/SG
System 2000/PLI.....: 2:15-4pm, Apr 23 - 27 (mwf),, SPN
Scientific Info Retrieval...: 2:15-4pm, Apr 24 - 26 (tth),, JCC
NOS Control Language.....: 2:15-4pm, Apr 26 (th),, RTF
Advanced FORTRAN.....: 2:15-4pm, Apr 30 - May 18 (mwf),, RTF
System 2000/Report Writer...: 2:15-4pm, Apr 30 - May 4 (mwf),, JCC
Introduction to Timesharing.: 2:15-4pm, May 1 - 3 (tth),, RTF
SPSS (Procedure).....: 2:15-3:30pm, May 1 (t),, SPY
SPSS (Procedure).....: 2:15-3:30pm, May 3 (th),, SPY
COBOL.....: 2:15-4pm, May 7 - 25, (mwf),, JCC
SNOBOL.....: 3:15-5pm, May 7 - 18, (mwf),, JPS

advertisements

ANNOUNCING PREP SESSIONS FOR "CERTIFICATE IN DATA PROCESSING" EXAMINATION

The Northwest Chapter of the Data Processing Management Association and the University of Minnesota Department of Continuing Business Education announce the scheduling of prep sessions to assist DP managers and other data processing personnel expecting to take the CDP examination on May 5, 1979.

All the sessions will be held at the Earle Brown Continuing Education Center on the University of Minnesota St. Paul Campus. The time for each is 6:30 - 9:30 p.m. The fee is \$15 per session or \$65 for the entire sequence.

The prep sessions will be conducted by leaders selected by the DPMA and conform to the "Study Guide" recommendations of the Institute for Certification of Computer Professionals. The topics and schedule of the sessions are as follows:

Thursday, April 12 - Mathematics
Tuesday, April 17 - Statistics
Thursday, April 19 - Accounting and Finance
Tuesday, April 24 - Principles of Management
Thursday, April 26 - Systems Analysis and Design

For further information, call Terry Henry, Program Director (373-0257)

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