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University Computer Center Newsletter

UNIVERSITY COMPUTER CENTER

UNIVERSITY OF MINNESOTA-TWIN CITIES

MINNEAPOLIS, MINNESOTA 55455

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BULLETINS

TELEPHONE CONSULTING

GENERAL CONSULTING	9AM-5PM M-F	376-5592
Business Data Products	10-11AM M-F	376-1761
	1-2PM M-F	376-1761
COBOL	DMS-170	KWIC
QWIC QWERY	Record Manager	SIR
SORT/MERGE	SYSTEM 2000	TRIAL
Statistical Packages	1-2PM M-F	376-5062

JULY 4 HOLIDAY HOURS

	down		up
Lauderdale	Wed July 4 0400		Thu July 5 0800
Exp Eng	Tue July 3 2400		Thu July 5 0800

UCC newsletter

Volume 13 Number 6 June, 1979

Director: Peter C. Patton
Editor : Amy Koepke

Comments about the content of this newsletter, or suggestions for changes may be directed to the editor, 235a Experimental Engineering, 612/373-7744.

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, or national origin.

access & security

We have been reviewing the access and data security of our systems with the EDP auditor in the University's Department of Audits. This month we received the following report from the Director of that department:

It was our conclusion, after reviewing your procedures, that the protection of the system, its programs and data, is the primary responsibility of the user through the proper use of passwords. It cannot be emphasized too strongly that the users, for their own protection, should immediately change the default password to one of their own unique construction and make subsequent changes as the length of the project, exposure of the password, and confidentiality of the data seem to demand. Passwords should, of course, be revealed only on a "need to know" basis.

It should be further stressed to the users that their cooperation is needed through prompt and careful monitoring of Computer Center charges (by journal voucher) to determine if any unauthorized access has occurred.

The Department of Audits endorses any effort you are making to make users of the University Computer Center more sensitive to their responsibilities in the vital area of system and data security, not only for their own good but for the protection of the other users.

[The EDP Auditor] will continue to work with the members of your staff on this important problem as the need and available time seem to dictate. We would appreciate being informed of any serious problems involving security.

We at UCC wish to take this opportunity to again urge users to maintain control of their passwords and, if necessary, change them frequently.

P.C. Patton, 373-4361

St. Paul Campus

For several years now, the St. Paul Campus faculty have been trying to improve computing facilities on the St. Paul campus. Over time, several groups have been formed to evaluate existing facilities and to recommend alternatives for improvements. These efforts culminated in the St. Paul Computer Services Review Committee Report to Deputy Vice-President Hueg. In the report, one of the major recommendations was that the St. Paul Campus Computer Center be made a part of University Computer Services.

With the acceptance of this recommendation by Vice-President Hueg and UCS Director Frank Verbrugge, the groundwork has been laid to enable the planning and implementation of a first rate computer center on the St. Paul Campus that will serve in coordination with all University computer services to meet the needs of the students and faculty on the St. Paul Campus.

A St. Paul Computer Center Planning Committee has been selected. The membership of the committee is as follows:

Dave Nelson, MAPS, Chairman
Signe Betsinger, College of Home Economics
Kit Bingham, Applied Statistics
Victor Bloomfield, College of Biological Sciences
Alan Ek, College of Forestry
Ken Francis, Administrative Data Processing
Richard Hotchkiss, University Computer Center
Carl Jessen, College of Veterinary Medicine
Kenneth Jordan, Agricultural Engineering
Harlund Routhe, Agricultural Extension
Mel Sauve, St. Paul Computer Center
Peter Patton, University Computer Center
ex officio
Frank Verbrugge, University Computer Services, ex officio

As part of the reorganization, a replacement of the 360/30 by a more modern system is planned and has been approved by the Computer Advisory Committee. Because of the amount of existing software on the 360/30, the replacement will probably be IBM compatible. Besides carrying on the current work of the 360/30, the replacement will be available for instructional and research use on a campus wide basis. Parties who might use this system and wish to influence the planning process should contact members of the committee or, in particular areas, members of the following sub-committees:

Location and Space:

Signe Betsinger, Chair
Victor Bloomfield
Hal Routhe
David Nelson

Hardware Selection and Configuration:

Ken Francis, Chair
Peter Patton
David Nelson

Software Selection and Services:

Richard Hotchkiss, Chair
Kit Bingham
Carl Jessen
Mel Sauve
Steve Nachtsheim
Valda Bremanis

Usage and User Needs:

Kenneth Jordan, Chair
Alan Ek
Mel Sauve

The changeover of the center will take place July 1, 1979. David Nelson has been named Director of the Center and Mel Sauve an Assistant Director. The committees have already begun meeting; the next meeting of the planning committee is July 6.
R. Hotchkiss, 373-5756

computing grants

The following chart (Chart I) summarizing the principal features of the revised Computer Grants program for 1979-80 was presented at the May 17 General Users' Meeting. These additional points were brought out in questions and discussion:

1. This program is for faculty research and graduate student thesis-related computing.
2. These grants may be made on the Cyber 74 or Cyber 172; not on the MERITSS 6400.
3. These grants, whether partial or 100%, may be used for either or both interactive and batch computing.
4. "Supplies Costs" in Chart I refers to computer generated supplies or on-line supply costs. These, and off-line supply costs, are defined in Chart II. Off-line supply costs are completely user-funded.
5. UCC is categorizing research users by current usage and is contacting them for renewal of their account numbers in the appropriate grant category.

R. Hotchkiss, 373-5756

CHART II - SUPPLIES

ON-LINE SUPPLY COSTS

1. Pages Printed
2. Cards Punched
3. Permanent File Storage
4. Timesharing Connect Time
5. Tape Mounts
6. Disk Pack Mounts
7. Plotter Inches
8. Plotter Setups
9. Microfilm Frames
10. Microfilm Setups

OFF-LINE SUPPLY COSTS

1. Tape Purchase
2. Tape Storage
3. Shelf Rental
4. Disk Pack Lease
5. Disk Pack Physical Storage
6. Reference Materials Purchased
7. Key punch Cards Purchased
8. Tape Cleaning
9. Permanent File Restoration
10. Job Accounting Report Setup

CHART I - COMPUTER GRANTS SUMMARY

Program Title	Grantees	Type of Grant Support	Estimated Number of Grantees	Range of Grant	Support After Grant Termination
S	small research with no support	both computing and supplies costs	1,000	normally, maximum grant of \$50, renewable to \$200 maximum	user 100% support both for computing and supplies
R (Special Grants)	medium and large users	computing costs only (on 1:1 basis); full supplies support by users	200	up to \$300	user 100% support or through Special Grants Program
L	large users	user support for computing costs would be more than 50%; supplies support 100% by users	30-40	no upper limit	full user support
G	graduate students thesis-related computing	grants for both computing and supplies costs	300-400	up to \$300	normally, non-renewable in a given year; user 100% support both for computing and supplies or by arrangement with thesis advisor

accounting message

As many of you may have already noticed, we have again installed the message

LESS THAN 5% OF YOUR SRU RELATED FUNDS REMAIN

This informative message applies only to those funds specifically earmarked for SRU charges (that is, supply-related funds are not taken into consideration upon the issuance of the message).

The criteria for determining the recipients of the message are twofold and based solely on the dollar value of the SRU funds remaining.

1. If SRU funds are less than \$2000.00, the message will be sent when 5% or less of these funds remain.
2. If SRU funds are \$2000.00 or greater, the message will be sent when \$100.00 or less of these funds remain.

If you encounter this note and wish to increase your funds, please contact Judy Krieg at 373-4548.

Any other comments may be directed to
G. Jensen, 376-7256

performance monitoring

In order to plan for new growth, monitor current usage, and provide detailed analyses of the performance of our current machines, Kevin Matthews of our systems staff has put an extensive performance monitoring package into the Cyber systems. To give you some flavor of what the statistics look like, the graphs for:

1. number of interactive terminals
2. charged mass storage
3. CPU utilization

for the Cybers on Tuesday April 24, from 8 AM through midnight are presented at the end of this article.

In addition to the two-dimensional graphs, performance analyses are put out every hour on 64 specific items, such as percentage CPU overhead for each system package (SUPIO, TELEX, MAGNET, and CPU monitor) and average rollout and control point times for batch and interactive jobs.

To show how we use these analyses, let us give some examples. For the prime time hours of 2:30 - 4:30 PM on Monday, April 23rd, the following observations and comparisons can be made:

1. Number, average size, and time to roll for interactive jobs:

Cyber 172: 17,229 rolls of 125.3 PRUs taking
189.1 milliseconds each
Cyber 74 : 9,422 rolls of 70.8 PRUs taking
190.5 milliseconds each

The Cyber 172's full tracking enables it to handle jobs that are almost twice as large as those on the 74 in the same amount of time. This is the main reason that there is a 55K limit on the 74 whereas the 172 has up to 110K for interactive job execution.

The number of rolls for each machine corresponds to what we have previously observed: that Cyber timesharing users need about 2.50 rolls per minute per user for happiness (2 or less means unhappy users). For the two hour period observed on April 23rd:

17229 rolls/120 minutes/56 users = 2.56 on the 172
9422 rolls/120 minutes/33 users = 2.38 on the 74

2. Central processor overhead:

Central processor overhead for our Cyber systems (with 10 to 14 PPs) is significantly lower than many other systems that only have a central processor to do input/output. For this same two hour period, the following CPU overhead was observed:

Function:	RJE	MIRJE	Mag tape	Monitor
System Name:	SUPIO	TELEX	MAGNET	CPU MTR
172(2 CPU)	0.0%	2.05%	1.92%	1.90%
74(1 CPU)	5.57%	1.64%	1.89%	2.76%
	TOTAL OVERHEAD		TOTAL CPU USE	
172	5.87%		62.61%	
74	11.86%		72.11%	

3. Disk channel saturation:

Finally, during the period 2:30 - 3:30 PM on the Cyber 172, the three disk channels were running at 84.6%, 71.4% and 68.8% respectively. Since practice has shown that 70% utilization of a disk channel means saturation levels, another disk channel will be switched to the Cyber 172 in July. These and other needs (such as 1200 baud rotary saturation) provide the rationale for the following hardware additions for fiscal year 1979-80:

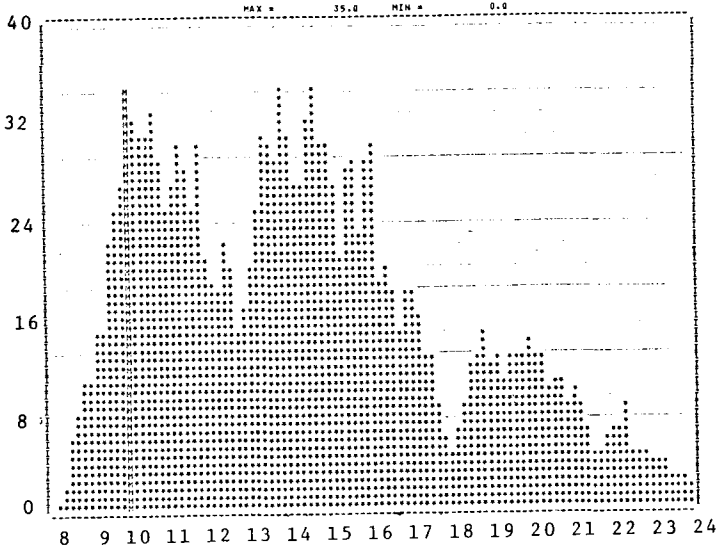
- July 1979 New FMD disks (1385 million characters) to the Cyber 74 and one controller and 2 disks (470 million characters) to Cyber 172
- August 1979 New tape controller and tape units (6250 cpi)
- September 1979 12 additional 1200 baud lines to 74/172
- January 1980 New FMD disks (1385 million characters) for the Cyber 172

L. Liddiard, 373-5239

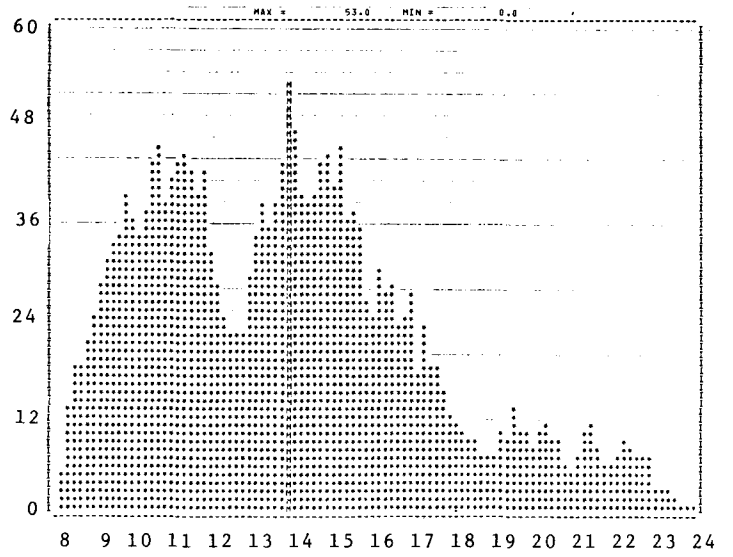
CYBER 74

CYBER 172

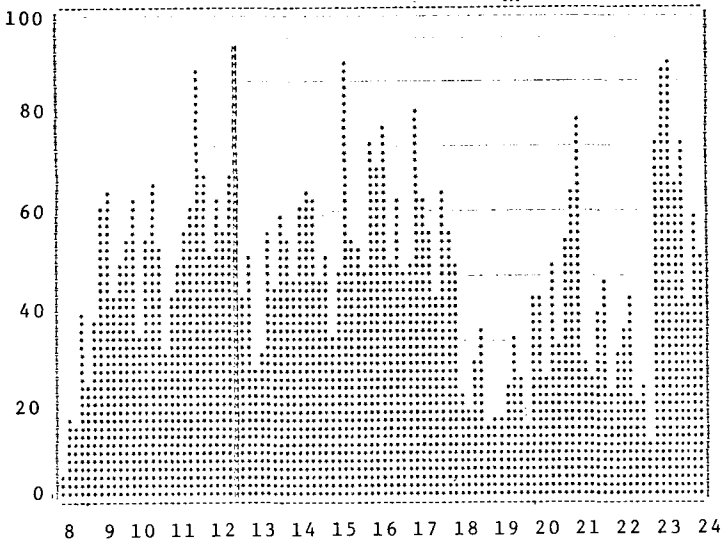
NUMBER OF INTERACTIVE TERMINALS



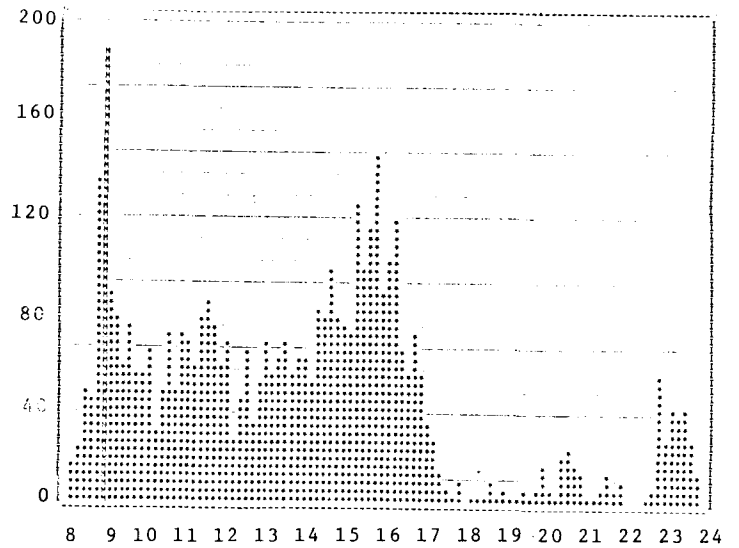
NUMBER OF INTERACTIVE TERMINALS



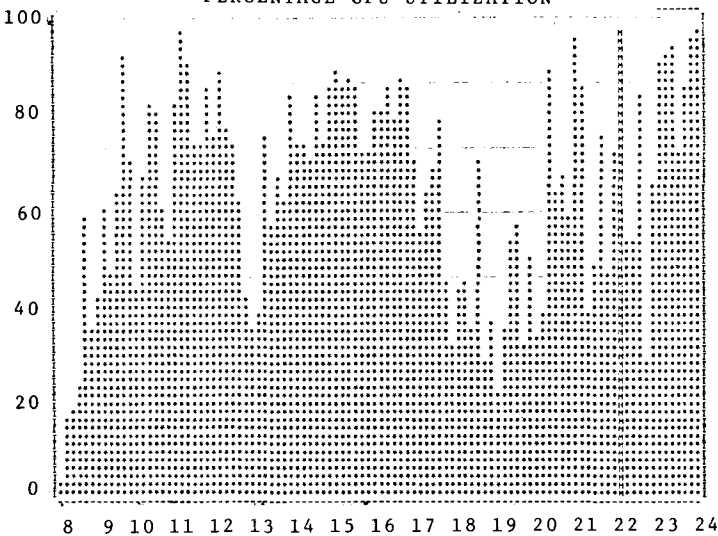
CHARGED MASS STORAGE K-PRU'S TRANSFERED



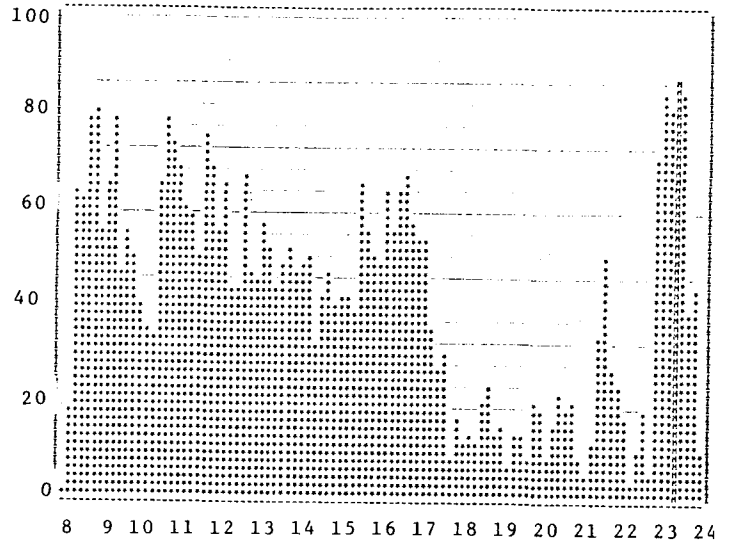
CHARGED MASS STORAGE K-PRU'S TRANSFERED



PERCENTAGE CPU UTILIZATION



PERCENTAGE CPU UTILIZATION



IMSL

The International Mathematical and Statistical Library (IMSL) Edition 7 has been updated effective June 17th to reflect the latest release from IMSL, Inc., which was received on April 19th of this year. Source code changes have been made to the library as well as documentation changes in the library.

Current users will be quick to notice several major changes. Additions have been made to the library including 38 basic linear algebra codes (Chapter V) as well as several routines to make the library easier to use. The manual has been substantially improved with an example for every routine. Subroutine names and argument lists have been further standardized across hardware types to aid those who change computers or who have access to various types of hardware.

A reference copy of the IMSL manual is available in the UCC Reference Room. You may also order this manual by writing:

IMSL, Inc.
Sixth Floor, GNB Building
7500 Bellaire Boulevard
Houston, TX 77036

A machine retrievable writeup is available on both the Cyber 74/172 and the 6400. To obtain an index of this writeup, execute the following control statement:

WRITEUP(IMSL)

The following is a list of IMSL routines that have been added:

DGEAR	LLSQF	LSVDB	LSVDF	MDCHN
MDNORD	ODFISH	ODNORM	UERSET	UGETIO
UHELP	UHELP1	UHELP2	UHELP3	UHELP4

The following routines were changed:

BECORI	BECTR	BEMIRI	BEMIRO	BEMMI
BEMMO	EIGCC	EIGRF	ICSFKU	ICSVKU
LUREFF	LUREFP	LUREPB	MDFD	MDSTI
NDMPLE	OFROTA	RLFOR	RLMUL	RLONE
RLSTEP	RSMITZ	SSRAND	SSRBLK	USHV1
VMULQB	ZRPOLY	ZREAL2		

The following table lists deleted routines and their replacements:

DELETED	REPLACED BY
=====	=====
ABIBAN/ABALAT	ABIBN
AFACAN/AFACMN	AFACN
AGXPMS/AGXPMN	AGXPM
BECORO	BECOR
BECVLO	BECVL
BEPATS/BEPATN	BEPAT
BEPETS/BEPETN	BEPET
DASCRU	DVERK
DVOGER	DGEAR
FFCSIN	FFTSC
FFRDR2 placed in	FFT2C
FFTP	FFTCC
FFTR	FFTRC
FFT2	FFT2C
FFT2RV	FFT2
FTCOMP	FTCMP
FTFFT1	FTFPS
FTFUNC	FTMQS
FTGEN1	FTGEN
FTMAPS	FTMPS
FTMAXL	FTMXL
FTSIMP	FTCMP
FTTRAN	FTTRN

GGAMA	GGAMR
GGBIN	GGBIR
GGBNB	GGBNR
GGBTA	GGBTR
GGCAU	GGCAY
GGCSS	GGCHS
GGEOM	GGEOT
GGEXP	GGEXN
GGHYP	GGHPR
GGMUL	GGMLT
GGNLN	GGNLG
GGNMP	GGNPM
GGNOF	GGNQF
GGNOR	GGNML
GGNRF/GGNRF1/GGNRF2	GGNML
GGNRM/GGNRM1	GGNSM
GGPOSH	GGPON
GGPOSR	GGPOS
GGSPR	GGSPH
GGTMAJ	GGAMS
GGTMA1/GGTMA2	GGAMT
GGTRI	GGTRA
GGUB	GGUBS
GGUBF	GGUBFS
GGU4	GGUW
GGVACR	GGVCR
GGWEI	GGWIB
GTDD1/GTDD	GTDDU
GTMN1/GTMN	GTMTN
GTPRT/GTSRT	GTPR
GTRTM/GTRT	GTRTN
LEQT2C	LEQ2C
LLSQAR	LLSQF
LPSDOR	LSVDF
LSVALR	LSVDF
MDCFI	MDCH
MDTPOS/MDPOS	MDTPS
MERF/MERFC/MDNORD	MERF=ERF/ MERRC=ERFC/ MDNOR
MGAMMA/MLGAMA	MGAMA=GAMMA/ MLGAMA=ALGAMA
MMDAW	MMDAS
NBDS/NBSL	NBSDL
NMKST	NMKTS
NRWMP/NRWMPD	NRWMD
OFFPRIN	OFFPRI
RLPOLY/RLPOL1	RLPOL
RLSTEP/RLFORC	RLSTP
USPLH/USPLX	USPLT/USPLTD
USRDM	USRDV
USWB	USWBM
USWBSM	USWBS
USWLFM	USWFM
USWLSM	USWSM
USWTFM	USWFM
USWTFV	USWV
USWTSM	USWSM
USWTSV	USWSM
VSORTM/VSORTA	VSRTM/ VSRTMD/ VSRTA/ VSRTAD
VSORTZ	VSRTU/VSRTUD
VSRTPM/VSORTP	VSRTP/ VSRTPD/ VSRTR/ VSRTRD
ZXFIB	ZXGSP
ZX1LP/ZX2LP	ZXOLP

If you encounter any problems when using IMSL please call me.

J. Woolsey, 376-5262

MPOS

MPOS Version 4.0 was received from Northwestern University on March 6th and will replace the current version on June 17th. Features of the new version include the following:

1. In a VARIABLE list the variable names may either be separated by blanks or commas. Previously, only blanks were allowed and the commas would yield an error. For example the specification:

```
VARIABLES
X1 TO X5, Y1 TO Y5, A1, B1, C1
```

is now legal.

2. A variable list may appear on the left hand side of a bounds specification to define several variables with the same bound. Hence, if the variables X1, X2, X3, X4, X5, Y1, and Z1 all have an upper bound of 5, the specification:

```
X1 TO X5, Y1, Z1 .LE. 5
```

could be used. Previously seven specifications would be required.

3. The regular simplex algorithm has been completely rewritten. Users can specify both upper and lower bounds on variables.
4. A new linear programming algorithm, GENERAL, which takes advantage of generalized upper bounds (GUBS) constraints, has been added. See page 38 of the MPOS User's Guide.
5. Better paging of the output and a command to specify the number of lines per page, has been added. See page 18.1 of the MPOS manual.

J. Woolsey, 376-5262

de Boor, "A Practical Guide To Splines," Springer-Verlag, New York, 1978. We obtained the package from IMSL and successfully ran the tests that came with it. More information on BSPLINE can be obtained from

M.J. Frisch, 376-1636

text formatting

A version of FMT, a text formatter and typesetter, which uses the TTY (current) character set, will be made current on June 17th. This is the version which has been FUTURE(FMT) during spring quarter. There will be no PAST version. The characters which changed, and their octal internal representation are below.

New octal value	New character
060	Number sign (#)
064	Double quote (")
065	Underline (_)
067	Ampersand (&)
070	Single quote (')
071	Question mark (?)
074	Circumflex (^)
075	Backslash (\)
076	At sign (@)
100	Unused/Reserved
133-144	Unused/Reserved
145	Superscript mode *
146	Subscript mode *
147	Return to previous mode *
150	Return to normal mode *
151	Unused/Reserved
152	Unused/Reserved
174	Tilde (~)
177	Grave accent (`)
200-237	Control characters (NUL-US)

* This character has not been implemented yet.

Further information and details on converting old files can be obtained through the control statement

```
WRITEUP(NEWFMT)
```

J. Woolsey, 376-5262

simulation -FORSIM

We have installed the FORSIM VI simulation package for the automated solution of arbitrarily defined partial and/or ordinary differential equation systems. The package was written by M. Carver, D.G. Stewart, J.M. Blair, and W.N. Selander of the Chalk River Nuclear Laboratories in Ontario, Canada. A copy of the FORSIM User's Manual has been placed in the UCC Reference Room, 235a Experimental Engineering. Though we have successfully run the tests that came with the package, we don't have any experience in running any problems at the University.

More information on FORSIM can be obtained from
M.J. Frisch, 376-1636

BSPLINE

We have installed a package of subroutines for solving various interpolation and approximation problems using piece-wise polynomial functions, as described in the recently published book by Carl

computer comparisons

A number of users have requested that we give comparison ratios between the University's current computers (Cyber 74/172 dual processor, Cyber 171 at Duluth, CDC 6400, CDC 3300 and IBM 370/158) and computers installed at other sites. These comparisons would then enable you to make reasonable time (and proportional cost) estimates for problems that are transported to or from different computers.

The following table was developed from a number of sources that used single precision FORTRAN-based problem mixes to obtain an average computation time for computers. These computer times are then normalized with respect to a Cyber 172 as the Unit Computer. A factor of 1/2 to 2 times the given ratios are to be expected as the normal variation for a specific FORTRAN problem.

AMDAHL	CDC CYBER	DEC	HIS	IBM/ IBM	IBM 4-digit	UNIVAC	ELSE	RATIO TO CYBER 172
	3300	1060	66/20	360/50	4331			.25
		1070		370/138				.50
			6050-60	370/148	4341			.75
				360/65				
				370/155				
	6400	VAX780	66/40					.87
	171							
	172	1077	66/60	370/158-3	3031	1108		1.0
	173	1090	6070-80	360/75		1110(1x)	Burroughs	1.5
			66/40(2x)				7755	
	172(2x)		68/80				STAR100(s)	2.0
	74		66/80			1110(2x)		2.5
	174					1100/42		3.0
				370/168				3.5
					3032	1100/44		4.0
470V6	175-100							6.0
				360/91				7.0
470V7-II	175-200				3033			8.0
	175-300							10.0
470V8								12.5
	17600 or 176			370/195			STAR100(v)	15.0
								17.5
	203(s)*							20.0
							CRAY-1(s)	30.0
							Burroughs*	40.0
							Scientific	
	203(v)*							60.0
								80.0
							CRAY-1(v)	100.0
								120.0
								140.0

Symbol Explanation:

(s) scalar problem (v) vector problem (nx) n processors * estimated

CDC Control Data Corporation
 DEC Digital Equipment Corporation
 HIS Honeywell Information Systems
 IBM International Business Machines
 AMDAHL, CRAY Computer=Company
 STAR CDC vector machine (new version 203)

The following factors may explain why a specific problem achieved greater or less than the expected ratios:

1. The problem is I/O limited, is based on COBOL, or is a data base management problem.
2. One of the comparison computers, due to a limited exponent and/or precision range, may require double precision, thus concealing an additional factor of 2 to 4 times the ratio given in the table.
3. The individual problem variation is at the extreme end of the normal variation of 1/2 to 2 times.
4. Averages always lie and your problem has a variance of 10 (one order of magnitude) from the given table ratios for one of the following reasons:
 - a. A whiz bang programmer and/or global compiler has optimized your problem correctly for a given computer, a given language, or a given operating system.
 - b. Rethinking the problem for a vector machine has led to an essential breakthrough in contiguous storage for the problem's data or in correcting the problem's algorithm.
 - c. The table has a misprint.
 - d. Your problem or the computer has a lot of luck.
5. The computer system does not achieve relative throughput performance based on the table ratios since these are based only on the time spent in the problem state. Operating systems that take 10% of the CPU cycles for overhead (such as the University's CDC-NOS on the Cyber 74/172) will show better throughput than those systems (such as IBM's OS/MVS in a batch and on-line environment) that require 50% of the CPU for overhead processing. Throughput is also based on actual vs. virtual memory and total input/output channel devices and speeds on one computer system vs. another system.

If the table has any value, the following sources were valuable and have my thanks:

1. Computerworld's comparison tables for IBM compatible machines based on data compiled by International Data Corporation's Information System Planning Service.
2. HCS Performance Evaluation Report, June 1977, University of Minnesota
3. National Center for Atmospheric Research Machine Performance Guide (where a CDC 7600=1)
4. The Book, Control Data Corporation
5. "Computer Selection Methodology," E.M. Timmrick, ACM Computing Surveys, Vol. 5, Number 4, December 1973.

6. Central Computer Agency Raw Computing Index "Whetstone," Benchmark '74 Conference, Cambridge, England

If the table has any defects, the following are to be blamed:

1. "How To Lie With Statistics," Darrell Huff, W.W. Norton and Co., New York, 1954
2. Bad estimation (i.e., the * values) and speculative comparison of apples and oranges by the author.
3. The absence of any "industry standard" of FORTRAN performance measurement values for each computer.

Speculatively, we note that adding the FORTRAN power of all our current computers gives us

$$(2.5 + 2.0 + .87 + .87 + .25 + 1.0 = 7.5)$$

Does this mean that a single AMDAHL 470V-II, CDC 175-200, or IBM 3033 could replace all of our current computers?

L. Liddiard, 373-5239

mailing lists

A new, interactive program for creating and maintaining a changing and expanding mailing list has been made available on the Cyber 172. The system, called MLABELS, will produce names and addresses, printed on pressure-sensitive, peel-off labels, ready for application to envelopes. You may sort your list in a variety of ways and produce many subsets of your total list. Reports of the contents of your mailing list or a subset can also be produced, sorted in a variety of ways.

MLABELS has been designed with you, the user in mind. It is easy to use, entirely interactive, and is well documented, at a level understandable by inexperienced or non-computer users.

The cost of using the system is similar to that of other mailing list systems.

A preliminary version of the documentation is available via the command

```
WRITEUP(MLABELS)
```

on the Cyber 172 or Cyber 74. The writeup should only be printed on a line printer -- it is about 80 pages long.

Any comments or suggestions concerning the MLABELS system or its documentation would be appreciated and should be sent to my attention:

217 Experimental Engineering
University Computer Center
University of Minnesota
208 Union Street SE
Minneapolis, Minnesota 55455

L. Fetcher, 376-1637

business data products

As a convenience to users of business data products and data base oriented packages supported by UCC, specific hours have been set aside for intensive consulting for COBOL, DMS-170, KWIC, QWIC QWERY, Record Manager, SIR, SORT/MERGE, SYSTEM 2000, and TRIAL.

This summer, the hours are 10:00-11:00 AM and 1:00-2:00 PM, Monday through Friday. The number to call is 376-1761.

If you need additional, in-person assistance, please call during these hours and make an appointment.

Your first line of consulting should, however, always be the in-person consulting provided at various UCC sites and by the HELP-line.

J. Cosgrove, 376-1761

foam	\$0.0033
mailing list (50 SRUs+labels)	\$0.0405
labor to stuff, mail	\$0.0972

cost of dividend	\$0.3722

postage for off-campus mail	\$0.2000

	\$0.5722

University distribution (1300)	\$483.86
Outside distribution (300)	\$171.66

	\$655.52

I hope that not more than 100 of you have typed letters in protest since the \$7.00 per letter average cost will overwhelm any saving.

Another user sent us a punched card "software dividend" with the following message, only slightly ironic in tone:

CONGRATULATIONS!

As a token of my appreciation and gratitude for the years of changing hardware and shifting software provided by UCC, all competently and consistently justified and documented, please accept this software dividend.

This double-dot card gave me many hours of faithful service on the CDC 1604 before it was replaced by a series of ever more elaborate and powerful control cards.

I think I should mention that the coffee and cookies that we currently supply at our quarterly user meetings cost approximately \$1.00 per person.

All of the foregoing is only a prelude to the fact that we still have approximately 300 of these dividends packaged to go to users who will accept a small gift with no strings attached. Send a postcard or letter to:

Hardware Dividend
University Computer Center
227 Experimental Engineering
University of Minnesota
Minneapolis, Minnesota 55455

L. Liddiard, 373-5239

extravaganza

After we mailed our hardware dividend, and announced it in last month's newsletter, we received a number of calls of appreciation for that item. In addition, one of the University's departments published the following "Letter from The Editor"

In response to College requests, even demands, to be frugal, cut back, make sacrifices within the Department, we have scrimped, saved ... recycled. It seems a double insult, then, when the University Computer Center issues its "hardware dividend for current users," by mass-mailing little plastic boxes each containing a souvenir circuit card from the CDC 3256/501 line printer being retired after 13 years of faithful service ... the cost for the padded envelope, the plastic display box ... must be considerable. In this age of scarcity of funds, such extravagance hardly seems appropriate, and certainly is not palatable to those of us "towing (sic) the financial line."

If anyone is interested in protesting the souvenir hardware dividend, letters may be sent to Dr. Peter Roll, Special Assistant to the Vice President of Academic Affairs, 217 Morrill Hall, ... and to Peter Patton, Director, University Computer Center

Since I put this plan into action with the approval of the Executive Board at UCC, the following letter (hand written) was sent to that editor:

I enjoyed your "Letter From The Editor" ... and since I was the "mastermind" behind this extravaganza, I thought I had best inform you of the complete cost of doing it:

plastic box	\$0.1286
padded envelope	\$0.0800
printed congratulation	\$0.0226

user meeting

The UCC user meeting held on Thursday, May 17th was well attended. The main item on the agenda was the new computer grants policy, presented by Dr. Frank Verbrugge, Director of University Computer Services. Michael Frisch talked about applications packages and libraries, and Larry Liddiard discussed usage on the Cybers and the proposed new hardware.

Some discussion of the grants policy was presented in last month's issue of this newsletter. Additional information is contained in this issue (see page 47).

PRODUCTION USAGE SUMMARIES: Cyber 74/172

	Cyber 74/172 April, 1979	Cyber 74 April, 1978
System resource units (SRU)	1,251,510 (1,539,868)	-
Batch jobs and MIRJE sessions	115,719 (125,855)	96,192 (107,548)
Central processor hours inc. DELAY	192/133 (208/216)	192 (262)
DELAY queue processor hours	66/22 (76/32)	62 (74)
MIRJE terminal hours	12,004 (13,812)	8,516 (10,485)
Mass storage transfers (KPR)	379,869 (461,471)	257,013 (349,037)
Magnetic tape transfers (KPR)	7,029 (11,255)	6,194 (8,969)
Pages printed, charged from UCC	1,063,708 (1,162,706)	903,435 (1,022,793)
Cards punched	535,715 (560,953)	402,196 (410,291)
Microfilm frames produced	66,798 (451,442)	22,378 (308,442)
Status plotting production (feet)	9,600	6,148
Tapes mounted	11,707	9,631
Average file storage (char)	2,049.0 million	1,507.3 million
Mean time between failures	63.5/127.0 hours	45.8 hours
Available during scheduled hours	98.3/99.7 percent	96.5 percent
SUPIO uptime during available hours	97.6 percent	98.0 percent

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

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

	0800-1800 M-F		other		total	
Total possible scheduled uptime hours	220.0	220.0	300.0	300.0	520.0	520.0
Total downtime hours (see Schedule A)	1.5	0.1	4.1	8.9	5.6	9.0
Total uptime hours	218.5	219.9	295.9	291.1	514.4	511.0
Uptime (percent)	99.3	99.9	98.6	97.0	98.9	98.3
Average downtime per occurrence (min)	44.0	4.0	123.0	178.3	83.5	134.8
Mean time between failures (hours)	110.0	220.0	150.0	100.0	130.0	130.0
Subsystem failures						
SUPIO	4	-	1	-	5	-
TELEX	0	0	0	0	0	0
EXPORT	1	-	1	-	2	-

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	1	1	1.4	0.1	85.0	4.0
(3) Hardware related problems	3	3	4.2	8.9	83.0	178.3
(4) Indeterminate problems	0	0	0.0	0.0	0.0	0.0
(5) External Problems	0	0	0.0	0.0	0.0	0.0

SUBMISSION SITE USAGE SUMMARY (TELEX EXCLUDED): May, 1979

submitted from	total jobs	%	pages printed	%	cards read	%
Lauderdale	3,068	3.4	459,134	30.8	1,699,434	13.7
ExpEng	6,668	7.5	234,039	15.7	1,798,494	14.5
West Bank	9,676	10.9	127,923	8.6	1,814,467	14.6
6400	125	0.1				
SUBMIT jobs	13,640	15.3				
SUPIO	55,947	62.8	671,071	45.0	7,128,921	57.3
TOTALS	89,124		1,492,167		12,441,316	

PRODUCTION USAGE SUMMARIES: CDC 6400

	April, 1979	April, 1978
Number of jobs run	210,402	158,088
Central processor hours	142.2	171
MERITSS terminal hours	26,053	23,133
Number of terminal sessions	56,041	50,397
Maximum number of simultaneous users	127	114
Average file storage (char)	369.2 million	255.9 million
Mean time between failures	116.7 hours	35.2 hours
Available during scheduled hours	99.6 percent	97.9 percent

SIR notes

SIR Version 1.1A is now available as the FUTURE version on all UCC computer systems. Set up a batch job for SIR 1.1A as follows:

Jobcard
USER card
FUTURE(SIR)
SIR.
end-of-record card
 SIR directives
end-of-information card

To access SIR 1.1A interactively, enter the following:

BATCH,55000
FUTURE(SIR)
SIR,IA

SIR Version 1.1 is now the the current version on all systems; set up batch jobs as follows:

Jobcard
USER card
SIR.
end-of-record card
 SIR directives
end-of-information card

An interactive access looks like this:

BATCH,55000
SIR,IA

J. Cosgrove, 376-1761

for sale

The College of Forestry has several surplus terminals that they would like to sell to finance new equipment:

- 2 teletypes, ASR, paper tape, with acoustic coupler (10 cps)
- 2 Texas Instruments 745 portable terminals (30 cps)

If interested, call Alan Ek, College of Forestry, 373-0843.

equipment

The University has received bids on a 1200 bps data set. If you are interested in obtaining this equipment, call Dan Whealdon (373-8153, 373-4877) or Abe Franck (376-7291).

RETURN TO:

User Services
University Computer Center
227 Experimental Engineering
University of Minnesota
Minneapolis, Minnesota 55455

UNIVERSITY ARCHIVES
11 WALTER LIBRARY
UNIVERSITY OF MINNESOTA
EAST BANK
117 PLEASANT STREET SE
MINNEAPOLIS MN 55455