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In this Issue

SAS/ASSIST Now on VX
Learn to use the SAS/ASSIST menu-driven interface for SAS. 101

ACM Algorithms Updated
Some old ACM Algorithms from 380 to 490 were recently added to VX. 104

High-speed File Transfer
Where and how to quickly upload and download your files. 107

Saving E-Mail Output
How to save and edit E-mail files on an IBM-PC. 109

**NOS Will Go
June 30, 1992.**
(See page 106.)

**Take a Free
Computing Class
this Summer.**
(See page 110.)

New Lemmatizing Concordance Program

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Recently Professor Akehurst of the French and Italian department asked us for a concordance program that would group words having some common feature together in the concordance listing. For example, all occurrences in a text of all forms of the verb *be*—that is, *be, am, are, is, was, were, being, been*—would be grouped together and counted together as occurrences of the forms of the word *be*.

Ron Zacharski, our humanities computing consultant, checked his sources and found no lemmatizing program that was immediately available. Consequently, I took a version of our GENCORD concordance program that I had modified for our UNIX machine and adapted it to produce a lemmatized concordance. This program is now available on our VAX/VMS system and is called LEMMA_CONCORD. As with our other text analysis programs, it is available under our text-analysis subsystem, which you access, surprisingly enough, by entering TEXT_ANALYSIS at the VMS prompt.

Thus, to use this new program, you would type the following commands at the VMS \$ prompt:

```
$ TEXT_ANALYSIS
$ LEMMA_CONCORD
```

The program will then request from you the names of four files: your output file, your directives file, your special word list file, and your text file. You should refer to ListDoc for a complete explanation of these files and the options available with GENCORD and LEMMA_CONCORD. Some features of LEMMA_CONCORD are different, however, and are explained in a separate document. Both documents are available in the TEXT_ANALYSIS subsection within our ListDoc documentation utility.

Concordance continued on page 99

Contents

Contents

Software

Humanities

New Lemmatizing Concordance Program97

Statistics

SAS/ASSIST Now on VX 101

Math and Engineering

Old ACM Algorithms Added on VX 104

Systems

CYBER NOS

NOS Will Go 106

Communications

File Transfer

High-speed File Downloading and Uploading 107

E-Mail

Hard Copy from E-Mail and Other Ramifications 109

ACS Hours for July 100

Free Central System Computing Courses 110

Labs 113

Help Page 114

Information 115

ACS

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For a free subscription call (612) 625-7397, or send your name and address to the Computing Information Center, 1 Nicholson Hall, University of Minnesota, 216 Pillsbury Drive SE, Minneapolis, MN 55455. MAD@UMNACVX/MAD@VX.ACS.UMN.EDU. On-campus address changes *must* include your department name and address.

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Concordance continued from page 97

The computer is hardly smart enough to lemmatize the words of your text without a little help from you—well, actually, a lot of help. You must supply a two-column list of words as the special word *list file*. The first column of the list contains all the words that are to be concorded as some other form in the concordance listing. The second column contains those other forms. Thus a portion of the word list for the verb *to be*, as mentioned above, could be

be	be
are	be
is	be

and so on.

An easy way to get the list started is to run GENCORD on your text with CONMOD=4 and PRINTF=5 in your directive file. Part of your listing will be a single-column alphabetic list of your unique words. Using a text editor, either on the VAX or on your micro, edit out the other output (the GENCORD header and statistics, etc.), retaining the list, and then add your second column.

If the second column is blank for a word in the first column, then that first word is also the second word. Thus the entry “be be” above can be written just “be.”

The content of the second column can be anything you wish, of course. Instead of grammatical forms, they might be emotional descriptors—happy, sad, angry, etc.—or any other categories you are interested in using.

The main differences between GENCORD and LEMMA_CONCORD are primarily in certain default values, as follows:

The SPLWRD keyword: The default value in GENCORD is No, indicating no special word list is used. The

default value in LEMMA_CONCORD is Yes, since it is normally used with a special word list.

Special word list: GENCORD allows from one to many words on each line. LEMMA_CONCORD only allows one or two words per line, usually two.

SELMOD keyword: The default value in GENCORD is R (Reject) and applies to text words found in the special word list. The default value in LEMMA_CONCORD is A (Accept) and applies to text words not found in the special word list. In LEMMA_CONCORD, any text word found in the first column of the special word list is always concorded. Thus LEMMA_CONCORD normally concords and transforms all words found in the special word list and also concords all other words.

Underline symbol, _: In GENCORD the underline is by default a delimiter. (Plain ASCII text cannot handle true underlining.) In LEMMA_CONCORD the underline is by default a word character so that in the second column of the special word list you can create *pseudo-phrases* with the underline character. Thus, instead of the first row of the example word list being “be be,” you might want to use “be to_be.”

You can change these default values by adding the necessary specifications to the directive file.

In the resulting concordance the words will be grouped according to the words in the second column of the special word list. Words not found in the special word list, if you are accepting them, are listed just they are. The Frequency Distribution and Index listings reflect this grouping.

An example from Lincoln’s *Gettysburg Address* appears in **Example 1** on the following page, which contains an excerpt from a lemmatized concordance of the *Address* that contains all forms of the verb *to be* listed under to_be.

Concordance continued on page 100

Concordance continued from page 99

Example 1: An Excerpt from a LEMMA_CONCORD Concordance

```

                                to_be
to the proposition that all men are created equal.  Now we are
men are created equal.  Now we are engaged in a great civil war,
dedicated, can long endure.  We are met on a great battle-field of
  for us, the living, rather, to be dedicated here to the unfinished
      It is rather for us to be here dedicated to the great task
that nation might live.  It is altogether fitting and proper
  get what they did here.  It is for us, the living, rather, to
thus far so nobly advanced.  It is rather for us to be here
      8 Occurrence(s) of to_be
```

Only *to_be* is listed in the Index and Frequency Distribution, not *are*, *be*, or *is*. Note that you cannot concord phrases in the source text unless you have altered these phrases in the source text, using the underline character to make the phrases pseudo-phrases. Thus if the two *to be* infinitives in the example appeared as *to_be* in the source text, they would be moved over three places in the above example and would be alphabetized after *is*. The phrase *to_be* would also have to be in the first column of the special word list.

ACS Hours for July

Systems

Our systems will run in unattended mode from midnight Wednesday, July 3, until midnight Thursday, July 4.

It is unlikely that any tape requests or printing will be processed during these hours. Normal operations on all systems will resume at midnight Thursday, July 4.

At all other times, our system hours will be the normal hours listed on the inside back cover of each issue of this *Newsletter*.

Offices

Our Lauderdale offices (including Engineering Services) and our consulting offices will be closed on July 4. Our facilities in 1 Nicholson Hall will also be closed.

At all other times we will observe our normal office hours: the Lauderdale front desk and Engineering Services will be open from 8 to 4:30 Monday through Friday. Normal hours for our consulting offices and the Computing Information Center are listed in the inside back cover—the Help Page—in each issue of this *Newsletter*.

SAS/ASSIST Now on VX

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SAS is one of the most powerful general-purpose statistical packages in existence. Once SAS is mastered it provides power and flexibility in data manipulation along with great versatility and sophistication in statistical analyses. And once learned, of course, programming with SAS is substantially faster than continually choosing menu items and answering questions. But you need to make a considerable effort to learn a relatively complex system.

SAS/ASSIST is a menu-driven SAS interface. It is designed for the new or occasional SAS user. No longer do inexperienced SAS users have to recall the SAS language or any rules of syntax. You just "point and click."

SAS/ ASSIST also provides:

- an on-line tutorial to get one going
- on-line help at every point and instructions on every screen
- a full set of commands and function keys to get one rapidly through the menus.
- the ability to save and edit the SAS command file that ASSIST creates. It also costs considerably more to run.

Using SAS/ASSIST

Type

```
$ SAS
```

at the VMS prompt. SAS will prompt you:

```
Enter full screen device type:
```

Type **VT100** or whatever your terminal type is. SAS will put you in an Editor window with a line that looks like:

```
Command ==>
```

This is a Display Manager session. Display Manager is needed to develop and submit SAS programs, and to view the output. Now type **ASSIST**. This calls up SAS/Assist, and gives you a screen that looks like **Figure 1** (on page 102).

The Tab key will move you forward; the backspace key will move you backwards. If you are calling up SAS/ Assist for the first time, you will see that sample data sets are being created for you. The examples in *SAS/ASSIST Software* (see the section below on documentation) use the sample data in SASUSER.HOUSES.

Now you can select the **TUTORIAL**, which will guide you through SAS/ASSIST, and give you the principles of SAS. You could tab around to **GRAPHICS**, select high-resolution, and get the menu seen in **Figure 2**, which allows you a reasonably painless way to run SAS/Graph.

You could tab over and select **SETUP**, and select **Review Function Keys**, which would tell you about your keypad, and control keys. (The keypad can enable you to move around SAS/Assist much faster.) If you had a VT100, your keypad would look like **Figure 3**.

And when you finally want to leave, tab over to **EXIT**, and hit the carriage return. This returns you to the Display Manager and the `Command ==>` prompt. Type **ENDSAS**; to leave SAS.

SAS continued on page 102

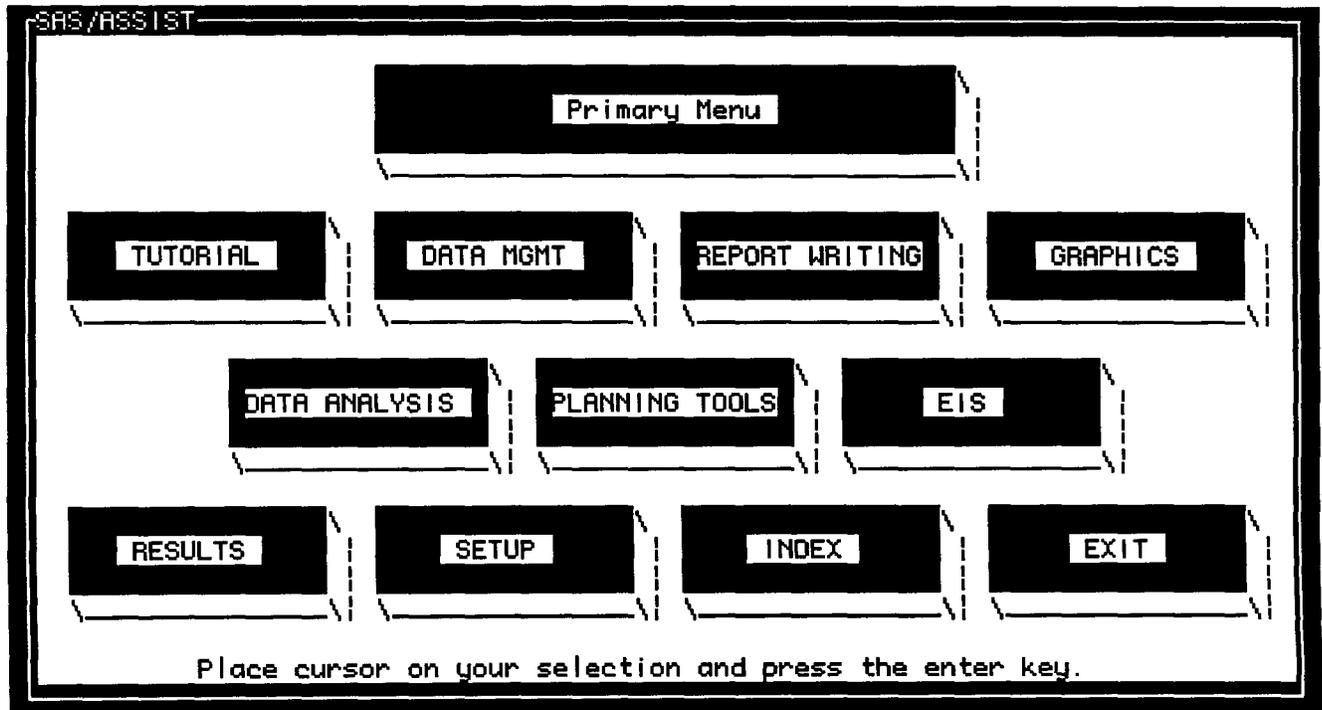


Figure 1: The Primary menu in SAS/ASSIST

SAS continued from page 101

Documentation

SAS/ ASSIST is documented in two manuals:

SAS/ASSIST Software: Your Interface to the SAS System, SAS Institute, Cary, N.C., 1990. This 50-page booklet with color photos describes many of the capabilities of the system and how to access them.

The more complete *Getting Started with the SAS System Using SAS/ASSIST Software*, SAS Institute, N.C., 1991, provides numerous examples of entering, selecting, editing, and sorting data, writing reports, defining new variables, analyzing data, and fancy graphics.

Both manuals are now available for reference in our Computing Information Center, 1 Nicholson Hall.

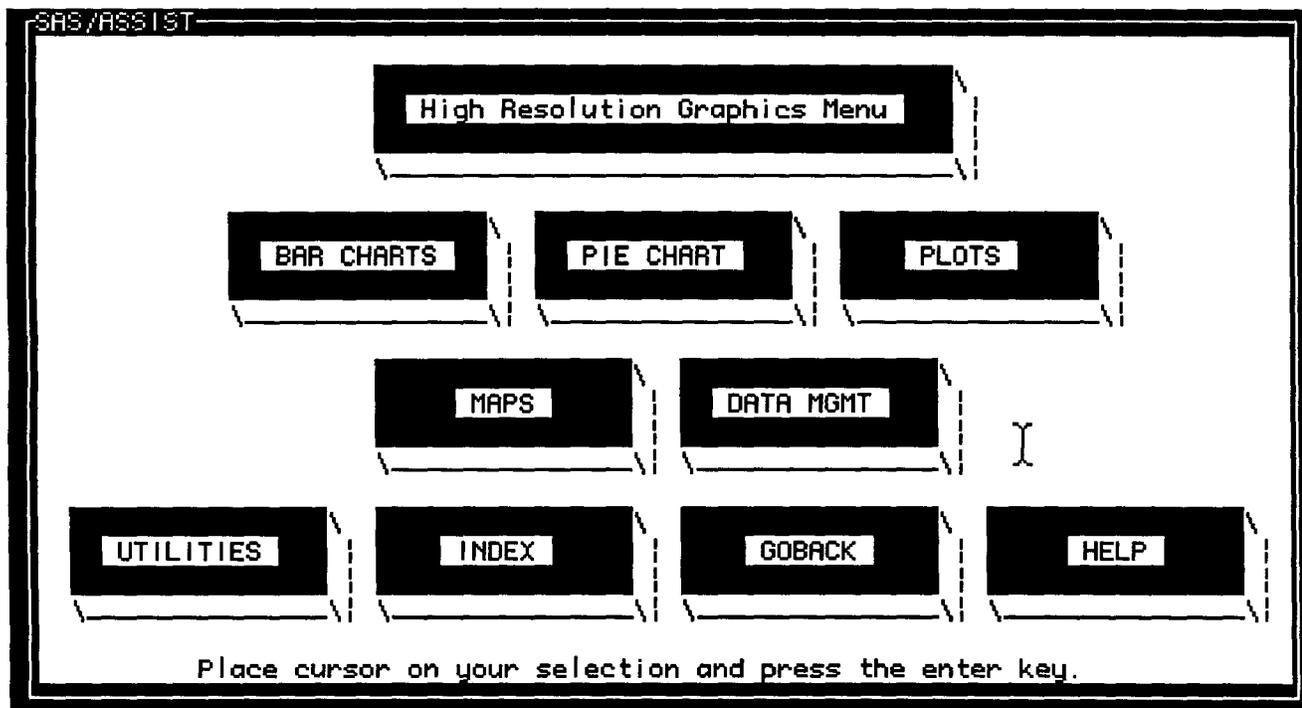


Figure 2: The High Resolution Graphics Menu

PF1 Gold	PF2 Help <i>Prev cmd</i>	PF3 Submit <i>Recall</i>	PF4 Find <i>Change</i>	Backspace Tab	Previous Field New Field
7 Top <i>Log</i>	8 Bottom <i>Program</i>	9 Mark	— Home	Control E Control U Control K	End of Line Delete Line Delete to end of line
4 Backward <i>Output</i>	5 Forward <i>Keys</i>	6 Store	, Reshow <i>Undo</i>	Control F Control N Control W Control H Control I	Home TPU (EVE editor) Reshow Previous field Next field
1 Left	2 Right <i>Zoom</i>	3 Paste	Enter Newline		
0 Previous Field <i>Previous Window</i>		.	Next Field <i>Next</i>		<i>Pmenu</i>

Figure 3: The VT100 Keypad Functions in SAS/ASSIST

Old ACM Algorithms Added on VX

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We keep on a VAX VX disk the ACM (Association for Computing Machinery) collected algorithms as published in the journal *ACM Transactions on Mathematical Software (TOMS)*, starting with algorithm 493 from March 1975. We recently added a number of older algorithms from 380 to 490, published in the journal *Communications of the ACM* (indicated by the letter *C* in **Table 1, where the algorithms are listed**). Almost all of the algorithms are written in Fortran but some of the older ones are written in ALGOL as indicated in the table.

To access the algorithms on VX, use the CALGOPL program that copies a single algorithm to your designated file. The command is:

```
$ CALGOPL number file
```

where *number* is the algorithm number from 380 through 686 and *file* is the name of the file to which the algorithm will be copied. The default type for *file* is .LIS and, if you don't supply a file name, the default name is *ALGnumber.LIS*.

For example,

```
$ CALGOPL 400 SAM
```

writes algorithm 400 on file SAM.LIS and

```
$ CALGOPL 433
```

writes algorithm 433 on file ALG433.LIS.

We have added the line

```
ALGnumber
```

to the beginning of each algorithm to make it easier to check which algorithm you copied.

For more information about CALGOPL, see the on-line document obtained with the VX command

```
$ MOREHELP LIBRARIES CALGOPL
```

Table 1: Old ACM Algorithms Added on VX

<u>Algorithm</u>	<u>Volume.Issue</u>	<u>Lines</u>	<u>Description</u>
ALG380	C13.5	102	In-Situ Transposition of a Rectangular Matrix
ALG386	C13.7	80	Greatest Common Divisor of n Integers and Multipliers
ALG387	C13.8	210	Function Minimization and Linear Search (ALGOL)
ALG388	C13.8	14	Rademacher Function (ALGOL)
ALG389	C13.8	19	Binary Ordered Walsh Functions (ALGOL)
ALG390	C13.8	23	Sequency Ordered Walsh Functions (ALGOL)
ALG391	C13.8	18	Unitary Symmetric Polynomials (ALGOL)
ALG393	C13.9	80	Special Series Summation with Arbitrary Precision (ALGOL)
ALG400	C13.10	94	Modified Havie Integration
ALG403	C14.1	68	Circular Integer Partitioning
ALG404	C14.1	98	Complex Gamma Function
ALG405	C14.2	349	Roots of Matrix Pencils: The Generalized Eigenvalue Problem (ALGOL)
ALG406	C14.3	463	Exact Solution of Linear Equations Using Residue Arithmetic
ALG407	C14.3	487	DIFSUB for Solution of Ordinary Differential Equations
ALG408	C14.4	1334	A Sparse Matrix Package (Part I)
ALG409	C14.5	255	Discrete Chebyshev Curve Fit (ALGOL)
ALG410	C15.5	97	Partial Sorting
ALG411	C14.7	188	Three Procedures for the Stable Marriage Problem (ALGOL)
ALG412	C14.7	130	Graph Plotter (ALGOL)
ALG413	C14.10	962	ENTCAF and ENTCRE: Taylor Coefficients of an Analytic Function
ALG414	C14.11	599	Chebyshev Approximation of Continuous Functions by a Chebyshev System of Functions (ALGOL)
ALG415	C14.12	131	Algorithm for the Assignment Problem (Rectangular Matrices) (ALGOL)
ALG417	C14.12	64	Rapid Computation of Weights of Interpolatory Quadrature Rules (ALGOL)
ALG419	C15.2	675	Zeros of Complex Polynomial
ALG420	C15.2	505	Hidden-Line Plotting Program
ALG432	C15.9	875	Solution of the Matrix Equation $A X + X B = C$
ALG433	C15.10	376	Interpolation and Smooth Curve Fitting Based on Local Procedures
ALG458	C16.10	511	Approximate Linear L1 Approximation by Interval Linear Programming
ALG473	C17.1	50	Computation of Legendre Series Coefficients
ALG474	C17.1	908	Bivariate Interpolation and Smooth Surface Fitting Based on Local Procedures
ALG475	C17.3	421	Visible Surface Plotting
ALG476	C17.4	591	Six Subprograms for Curve Fitting Using Splines Under Tension
ALG478	C17.6	221	Solution of an Overdetermined System of Equations in the L1 Norm
ALG479	C17.6	471	A Minimal Spanning Tree Clustering Method
ALG481	C17.8	303	Arrow to Precedence Network Transformation
ALG483	C17.9	450	Masked Three-Dimensional Plot Program with Rotations
ALG484	C17.9	165	Evaluation of the Modified Bessel Functions $K_0(Z)$ and $K_1(Z)$ for Complex Arguments
ALG485	C17.9	471	Computation of g-splines via a Factorization Method
ALG487	C17.12	174	Exact Cumulative Distribution of the Kolmogorov-Smirnov Statistic for Small Samples
ALG488	C17.12	102	A Gaussian Pseudo-Random Number Generator
ALG490	C18.4	123	The Dilogarithm Function of a Real Argument

NOS Will Go

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As we announced in our May issue, we will end our CYBER NOS service on **June 30, 1992**.

We've sent letters to our CYBER CA account holders, informing them about the conclusion of our NOS service.

We've also asked CA users to return a conversion assessment form, and we thank the many users who have already responded.

If you have not yet returned your assessment form to us, please send it in soon. If you have not received our letter and forms, please call 626-1093 between 8:30 and 4:30 weekdays. We'll send you the letter, forms, and other

information concerning the conclusion of our NOS service.

If you have questions about converting your projects to our VMS or UNIX systems, please call Michael Frisch at 625-5830.

If you're interested in converting to CYBER NOS/VE or CYBER EP/IX (UNIX) systems, call 625-2666.

If you're interested in converting to IBM VM/CMS, call 624-6235.

We'll provide more information about the end of our CYBER NOS service in future issues of this *Newsletter*.

**N O S W I L L
G O**

High-speed File Downloading and Uploading

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With the pending termination of our CYBER NOS service on June 30, 1992, a number of users have asked us whether there is a faster way than using Kermit to transfer files to microcomputers. The answer is yes.

There are several public labs that have microcomputers connected to the high-speed campus network. With the FTP (File Transfer Protocol) program running on the micro, you can move files to and from central system computers like the CYBER CA.

Locations

The labs listed below have IBM PCs (or compatibles) with high-speed campus network connections. They also have the FTP program running on those machines. A microcomputer lab card (which costs \$30 per quarter) is required for individuals to use these facilities. Departmental access can be arranged using the Departmental Use Agreement form available from lab attendants.

- 305 McNeal Hall in St. Paul
- 26 Lind Hall on the East Bank
- 170 Anderson Hall and B2 Wilson Library on the West Bank

The following labs have Macintoshes with high-speed campus network connections. These labs also have the NCSA Telnet package containing the FTP program running on the Macs. A microcomputer lab card (\$30 per quarter) is also required for individuals to use these facilities. Departmental access can be arranged using the Departmental Access form available from lab attendants.

- 4-204 EE/CSci, 121 Elliott Hall, 14 Folwell Hall, 26 Lind Hall, 130 Physics, and 9 Walter Library on the East Bank

- 170 Anderson Hall and 455 Blegen Hall on the West Bank
- B50 Central Library and 130 Classroom Office Building in St. Paul

There is a free public lab that has both IBM PCs and Macintoshes with high-speed campus network connections:

- 50 Hubert H. Humphrey Center on the West Bank

How to Do It

On the Macintosh: Start up the NCSA Telnet program. Choose **Open Connection** from the File menu. Enter the central system Telnet address in the **Session Name** box (e.g., CA.ACS.UMN.EDU) and click **OK**.

Now log in to CA as you normally would. Make the files you want to download to be local files using **GET**, **ATTACH**, or **ACQUIRE**. Type the CA command: **FTP**. Type the FTP command: **OPEN** followed by a space. Then choose **Send IP Number** from the Network menu and press Return.

When prompted for a user name, enter whatever you want, at least one character. You can then use the normal FTP commands **PUT filename** to send files to the Macintosh or **GET filename** to get files from the Macintosh or **QUIT** to exit FTP.

Files are saved in the folder where NCSA Telnet is located. To change folders, click on **Set Transfer Directory** in the File menu. For complete on-line documentation about FTP on CA, type **WRITEUP,FTP**.

High-speed continued on page 108

Communications

High-speed continued from page 107

On the IBM PC: If the FTP program isn't in the default directory, use the **CD** command to change directories to where the program is located.

Type the command **FTP CA.ACS.UMN.EDU**. You can then use the normal FTP commands **GET *filename*** to get files to the PC from CA or **PUT *filename*** to put files to CA from the PC or **QUIT** to exit the FTP program. Files are saved in the directory where FTP is located.

Type **HELP** to get a list of commands and type **HELP *command*** to see a one-line description of the command.

General Note

FTP correctly transfers CYBER NOS 6/12 ASCII files. However, if you transfer 6-bit display code files with embedded @ or ^ characters, FTP will halt when it encounters such characters. There are methods to handle such files that are discussed in the documents listed below.

Costs When You Do It

If you want to transfer files yourself, most of the labs have someone knowledgeable who can help you get started. There's no charge for this so long as you don't need constant help.

There is a charge for the CP (central processor) time to transfer files. This charge is made whether you use Kermit or FTP. The transfer is likely to be somewhat less expensive using FTP since it will be faster, but some of the cost is independent of the transfer rate. The charge is

covered by a research computing grant if you have one.

If you're having trouble transferring your files, call our HELP-Line at 626-5592 between 8 am and 5 pm weekdays.

Costs When We Do It For You

If you want our staff to do the file transfer for you, there is a charge of \$35 per hour with an hour minimum. The University research computing grants do not cover this charge. You must also supply the floppy disks, or we can provide them at cost.

Because of the high speed of the transfer, many jobs could be finished within the hour minimum. Cases that would take longer involve large files, many files, or both. We will use your central system account to do file transfers, and the processing time involved will be covered by computing grants.

If you're interested in having us transfer your files for you, call Contract Services, 625-2303 for more details.

Further Information

The FTP program has more capabilities than are described here. We have published a Communications Brief called "Transferring Files Using FTP," available in the Computing Information Center, 1 Nicholson Hall, 625-7397. It has a bit more detail.

You can use FTP on the ENCORE UNIX machine UX. Type **man ftp** for details. On the VAX VMS machines VX and VZ, type **HELP FTP**, or type **LISTDOC** and select the **Networking** category in the main menu.

Hard Copy from E-Mail and Other Ramifications

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In our April issue, I outlined a procedure for getting a local PC file copy of a LUMINA session. One of our readers used that method to get a file copy of an E-mail message on the VAX. Although that method will work for that purpose, it is better to use the **EXTRACT** command in MAIL. After reading your E-mail message, or whenever you are prompted for more screen output, simply type:

```
MAIL> EXTRACT filename
```

and a complete copy of the current message is placed in file *filename*. For example, to get a copy of your current E-mail message on file **Temp.**, type:

```
MAIL> EXTRACT TEMP.
```

When you use a file name without a period, you will get a file type of **.TXT**, i.e., typing **EXTRACT TEMP** will place your copy in file **TEMP.TXT**, which is an acceptable file name.

The next step is to download the file with Kermit after you exit from MAIL. Type **KERMIT** and then, at the Kermit prompt, type

```
SEND filename
```

Assuming that you are using ProComm, you then press the "Page Down" key and select the Kermit transfer protocol. When the transfer is finished, you will then have in your PC a file copy of your E-mail message in *filename*. If there is a name "collision," ProComm will change the first character of the filename.

But every solution seems to lead to new problems. As we indicated in a past newsletter, some E-mail messages have very long lines that you don't see because VMS Mail wraps the lines for you when you read the message. If you use EDT or EVE to look at the extracted file, any line longer than a screen line will have a filled diamond at the right side of the screen, indicating that the entire line is too long to display on the screen. You can insert carriage returns in each long line at this point or you can download the file and let your micro word processor wrap the lines for you when you import the ASCII text file.

Short Courses

Free Central System Computing Courses Summer 1991

Offered by St. Paul Computing Services (SPCS), Academic Computing Services (ACS), and Health Sciences Computing Services (HSCS).

Our courses teach you the operating systems and software on **central system** computers, large systems used by many people at the same time. These courses do not cover microcomputer software unless otherwise indicated in the following descriptions.

How to Register

To register call 626-0032, 8:00 am to 4:30 pm, Monday through Friday.

Registration is located at the Computing Information Center, 1 Nicholson Hall. Mail registrations are accepted or you can also register by electronic mail—write to classes@umnacvx or classes@vx.acs.umn.edu. Include a day-time phone number.

Please call to cancel if you later decide not to attend, so we know how many to expect. Deadline for registering is 4:30 pm on the last working day before the class begins.

General Courses

Introduction to Computing (ACS, HSCS, SPCS)

Monday, June 17, 2:30-4:30 pm

Basic terms and concepts in central system computing for the beginner. Descriptions of University computing organizations and services.

User Orientation (SPCS)

Thursday, June 13, 10:30-11:30 am

Overview of SPCS's hardware, software, and services.

Operating Systems

CMS Introduction (SPCS)

Tuesday and Thursday, June 18 and 20, 9:30-11:30 am
Hands-on training in CMS, the operating system on the CSOM and SPCS IBM central systems.

CMS BATCH (SPCS)

Friday, June 21, 9:30-11:30 am

Why, when, and how to submit programs to BATCH. You must know the CMS operating system.

CMS Tapes (SPCS)

Friday, July 12, 9:30-11:30 am

Specifying, reading, and writing tapes. You must know the CMS operating system.

CMS Utilities (SPCS)

Friday, June 28, 9:30-11:30 am

How to use CMS utilities for system enhancement and password and disk space management. You must know the CMS operating system.

Introduction to NOS/VE (HSCS)

Three sections: Tuesday, June 18, 10 am-12 noon; Wednesday, July 10, 2 pm-4 pm; Thursday, July 25, 10 am-12 noon

Connecting to NOS/VE, entering commands, creating, editing and managing files, obtaining output and on-line help, batch jobs and file transfers.

NOS/VE Full Screen Editor (HSCS)

Tuesday, July 9, 10 am-noon

Creating and editing NOS/VE files, expanded on-line help for each function and customized functions. You must know the NOS/VE operating system.

Beginning VAX/VMS (ACS)

Wednesday and Monday, June 19-24, 2:30-4:30 pm.

For those who have never used a central system before. Demonstration of basic VMS commands, with opportunities for practice and questions.

Introduction to VAX/VMS Operating System (ACS)

Tuesday and Thursday, July 16-25, 2:30-4:30 pm

An extensive introduction to the VAX/VMS operating system, including files and directories, Help and ListDoc, editing, DCL commands, and procedures.

UNIX Overview (ACS)

Tuesday, June 18, 2:30-5 pm

A beginning look at the UNIX operating system: structure, commands, utilities, and editing.

vi: UNIX Editor (ACS)

Tuesday, July 2, 2:30-5 pm

Editing files in UNIX in line mode (ex), or screen mode (vi): commands and setup. You must know the UNIX operating system.

Communications

CMS Electronic Mail (SPCS)

Two sections: Friday, June 14, 9:30-11:30 am; Tuesday, July 23, 9:30-11:30 am

Corresponding with other computer users locally and worldwide, via BITNET.

Internet Overview (SPCS)

Wednesday, July 17, 10:30-11:30 am

Using the CMS system to log on and transfer files to/from other computers on the Internet.

Electronic Mail on NOS/VE (HSCS)

Two sections: Thursday, June 20, 1 pm-3 pm; Wednesday, June 26, 10 am-12 noon

Using the E-mail system on NOS/VE to send and receive mail, transfer microcomputer files, and use bulletin boards and networks.

Electronic Mail & Networks (ACS)

Monday and Wednesday, July 8-10, 2:30-4:30 pm

Descriptions of the BITNET and Internet networks, and how to use them for electronic mail and transferring files, with emphasis on the VAX/VMS system. Does NOT teach the computer operating system.

YTERM (SPCS)

Tuesday, July 9, 10:30-11:30 am

Demonstration of the YTERM terminal emulation package, as used with the CMS operating system.

ProComm (SPCS)

Wednesday, July 10, 10:30-11:30 am

Demonstration of the ProComm terminal emulation package, as used with the CMS operating system.

ProComm-Computing by Phone (ACS)

Tuesday, June 25, 2:30-4:30 pm

Using ProComm microcomputer software to connect to LUMINA and other campus central system computers, and to upload and download files.

TinCan (SPCS)

Thursday, July 11, 10:30-11:30 am

Demonstration of the TinCan terminal emulation package, as used with the CMS operating system.

Graphics

PicSure Interactive Graphics (HSCS)

Tuesday, July 16, 2 pm-4 pm

Using PicSure to create bar charts, scattergrams, line charts, pie charts, and combinations. Demonstrated on the NOS/VE operating system.

SAS/GRAPH (SPCS)

Tuesday, July 16, 9:30-11:30 am

Exploring SAS graphics for presentation of your data as plots, charts, maps, and contour plots. You must know an operating system.

Short Courses continued on page 112

Short Courses

Short Courses continued from page 111

Statistics

SAS/Base (ACS and SPCS)

Tuesday, June 25, 9:30-noon and Thursday, June 27, 9:30-11:30 am

The essentials of the SAS statistical package for analysis, data storage and retrieval, report writing, graphics, and more. You must know either the CMS or VMS operating system.

SAS/Stat (ACS and SPCS)

Tuesday, July 2, 9:30-11:30 am

The statistical analysis features of SAS, such as correlation, regression, and analysis of variance. You must know either the CMS or VMS operating system.

SAS on CMS/VM (SPCS)

Wednesday, June 26, 10:00-11:00 am

Demonstration of SAS on the CMS/VM system.

SAS on the PC (SPCS)

Thursday, July 18, 9:30-11:30 am

Discussion of features specific to the IBM-PC version of SAS.

SAS on the VAX (ACS)

Wednesday, June 26, 2:30-4:40 pm

Using the SAS Statistics software on ACS's VAX/VMS. (In conjunction with SAS/Base and SAS/Stat classes.)

Using SPSS (ACS, HSCS, SPCS)

Monday, Wednesday, Friday, July 22-26, 2:30-4:30 pm

How to use the Statistical Package for the Social Sciences, available on several central computing systems. You must know a central computing system.

Statistics Conversion (ACS)

Monday, Wednesday, Friday, July 15-19, 2:30-4:30 pm

For those converting statistics (SPSS, SAS, or other) on one computer system (particularly the CYBER CA) to any other computing platform—VMS, UNIX, CMS, or PC.

Other

NOMAD2 (SPCS)

Wednesday, July 24, 2:00-4:00 pm

Demonstration of NOMAD2, a database management system on the CMS operating system.

PROFS Calendars (SPCS)

Monday, July 15, 10:00-11:00 am

Viewing, maintaining, and changing your electronic calendar on the CMS operating system.

Tapes Conversion (ACS)

Monday and Wednesday, July 29-August 7, 2:30-4:30 pm

For those using magnetic tapes, to convert them to another format—to another tape on a different system, or to floppy disks. Come the first day for general information, then one other session for specific data on your own situation.

MinnesotaMEDLINE

Call 626-5808 to registration for MEDLINE courses

Basics of MinnesotaMEDLINE Searching (HSCS)

Thursday, July 18, 1-2:45 pm

Wednesday, August 7, 10-11:45 am

Basic commands and the use of Medical Subject Headings (MeSH) in searching the medical literature database on the NOS/VE operating system.

Intermediate MinnesotaMEDLINE Searching (HSCS)

Tuesday, June 25, 9:00-10:30 am; Wednesday, July 31,

2:30-4:00 pm; Thursday, August 15, 10-11:30 am

Advanced searching capabilities of the MinnesotaMEDLINE system on the NOS/VE operating system, with emphasis on ways to narrow and broaden search strategy.

Labs

Location	Central System Printing	Terminals	Micros	Phone Numbers
East Bank				
117 Appleby Hall			X	624-8376
148 Architecture			X	624-9583
270 Diehl Hall	laser printer	X	X	624-3128
4-204 EE/CSci	laser printer	X		625-9081
54 Eddy Hall Annex			X	625-0314
121 Elliott Hall	impact/laser printer	X	X	624-0866
14 Folwell Hall	laser printer	X	X	625-4896
50 HHH Center		X	X	624-6370
1 Lind Hall	laser printer	X		625-0801
26 Lind Hall			X	626-0856
306B Lind Hall			X	625-9032
308 Mechanical Eng	laser printer	X		625-7352
8-425 Moos Tower			X	625-1477
1 Nicholson Hall	laser printer	X		625-5082
130 Physics	laser printer	X	X	625-6820
9 Walter Library	laser printer	X	X	626-1899
St. Paul				
B40 Central Library		X		624-3269
B50 Central Library	laser printer		X	
135 Classroom Office Bldg			X	624-9226
305 McNeal Hall			X	624-5367
436 Veterinary Science			X	624-3269
West Bank				
170 Anderson Hall	laser printer		X	624-6526
140 Blegen Hall	impact printer	X		No phone
455 Blegen Hall			X	626-7778
B2 Wilson Library			X	626-2205

Equipment at these facilities can access LUMINA, Info and The Calendar, ACS central systems, HSCS central systems, and SPCS and the School of Management's central systems. Micros in public microcomputer labs that are connected to AppleTalk can access ACS services. Micro access cards, which you can purchase for \$30 at the Bursar's Office, permit you to use the microcomputers. You do not need a card to use terminals. The following residence halls also have public terminals: Bailey Hall, Centennial Hall, Comstock Hall, Frontier Hall, Middlebrook Hall, Pioneer Hall, Sanford Hall, and Territorial Hall.

Help Page

ACS HELP-Lines

Central Systems (UX,VX,VZ,CA):

Software (including Graphics, Databases, and Statistics Packages), Hardware, Networking

626-5592 8 am to 5 pm, weekdays

Artificial Intelligence:

625-8332 3 to 4 pm, Monday, Wednesday, Friday

Humanities, Text Analysis:

625-8332 3 to 4 pm, Monday, Wednesday, Friday

Equipment Repair:

625-1595 8 am to 4:30 pm, weekdays

Lauderdale Tape Library:

626-1838 9 am to 3 pm, weekdays

Other HELP-Lines

Health Science Computing Services:

5-235 Moos Tower
625-2666 7:45 am to 4:30 pm, weekdays

LUMINA (communications questions):

626-2272 8 am to 5 pm, weekdays

Microcomputer and Workstation Networks Center:

125 Shepherd Lab
626-4276 9 am to 4 pm, weekdays

St. Paul Computing Services:

90 Coffey Hall
624-6235 9 am to 5 pm, Monday through Thursday; 9 am to 4 pm, Friday

Supercomputer Center

3030 SCC, 1200 Washington Ave. So.
626-0808 9 am to 4 pm, Monday through Friday (Questions answered on a limited basis 24 hours a day.)

Consulting

Walk-In Consulting

1 Nicholson Hall 10 am to 4 pm, Monday through Friday

Electronic Mail Consulting

Consulting is now available via the mail facility on all ACS systems (the UX, VX, VZ, and CA). Send mail to user name CONSULT for questions after hours and for low-priority questions that are not critical to your immediate computing work. Replies will be sent to your account through the mail facility on your system.

Instructional Computing Consultant

Department instructors may call 626-0200 for assistance in choosing ACS systems (ENCORE/UNIX, VAX/VMS, CYBER/NOS), software, and for answers to any other inquiries on using computers for instructional computing.

Computing Information Center

1 Nicholson Hall, 625-7397
MAD@UMNACVX, MAD@VX.ACS.UMN.EDU

Computing account and grant applications available for ENCORE, VAX, and CYBER computers.

Short course enrollment. Short course schedules and class descriptions available. Call 626-0032.

Assistance in ordering vendor documentation. Vendor documentation is not always available in the University bookstores and may be ordered directly from the company.

Complete documentation collection. Reference copies of vendor and all other documentation for ACS software.

Free ACS documentation. General information and central system information available.

Computing Newsletters. Subscribe to the *ACS Newsletter*. Newsletters from other computing centers are also available for reference.

ACS Directory

100 Laud CF (campus mail)	626-1600	Info/Public Information Service	626-1527
FAX	626-7440	LaudCF: Computer Consoles	626-0550
Director—Michael Skow	625-6349	File Restoration	626-0595
Deputy Director—Lawrence Liddiard	625-4016	Magnetic Media Lib/Operations (9 am-3 pm)	626-1838
Adm. Assistant Dir—James Foster	625-1511	Operations Coordinator	626-1646
Access: ACS systems (UX,VX,VZ,CA)		Services (tapes, laser disks, CD ROMs, Xerox,	
3/12/2400 bps + 7/Even/1	626-1630	plotters) Supervisor	626-1661
12/2400 bps + 8/None/1	626-1631	Users' room	626-0386
Access: All campus systems		Networking—Paul Tranby	626-0815
1200 bps 8/None/1	626-1200	Newsletter and Publications:	
2400 bps 8/None/1	626-2400	ACS newsletter subscriptions	625-7397
9600 bps 8/None/1	626-9600	Technical Publications—Steven Brehe	626-1828
Accounts: (8 am-12 pm, 1-4:30 pm)		NOS Systems—David Bianchi	626-1827
ENCORE, VAX, CYBER	625-1511	Operations, Asst Director—Richard Folden	626-0031
Assistance and Information:		Programming Environments—Jim Miner	626-1091
HELP-Line (including Graphics, Databases,		Shuttle Service	625-9525
Statistics Packages, and Text Processing)	626-5592	System Status (recording) status and hours	626-1819
Equipment repair	625-1595	UNIX systems—David Bianchi	626-1827
Computing Information Center	625-7397	User Services—Richard Hotchkiss	625-0795
Short Course Registration	626-0032	VMS Systems—Marisa Riviere	626-0268
Artificial Intelligence	625-8332		
BITNET/Electronic mail	625-1543		
Faculty Instructional Computing	626-0200		
Humanities/Text Analysis	625-8332		
Math and Engineering Packages	625-5830		
Contract Services—Cheryl Vollhaber	625-2303		
DEC CSLG/ESL Software Distribution	626-0268		
Engineering Services, LaudCF	625-1595		
Asst Director—Donald Clark	625-1583		
Equipment Maintenance/Repair	625-1595		

Other University Computing Services

Health Sciences Computing Services	625-5444
LUMINA	625-6009
Microcomputer and Workstation Networks Center	625-1300
St. Paul Computing Services	624-7788
Supercomputer Center	626-1888

Central Computing Systems

The UX research and instructional system, an ENCORE Multi-max multiprocessor running the UMAX 4.3 operating system (4.3 BSD UNIX).

The VX research and instructional cluster: a Digital Equipment Corporation VAX 6000-510, clustered with other VAX systems using the VMS 5.4 operating system.

The VZ system for non-University users: a Digital Equipment Corporation VAX 3100 using the VMS 5.4 operating system. The VZ is part of the VMS cluster system.

The CA research and instructional system: a Control Data Corporation CYBER 830, using the NOS 2 operating system. The CA provides interactive and batch computing for University researchers and students.

Accounts

To use our central computer systems, you need a user name. This user name (with a secret password) is your authorization to use the computer systems. You can get application forms and rate information from ACS Accounting, 100 LaudCF (625-1511).

Operating Hours

The ENCORE UX, VAX VX, VAX VZ, and CYBER CA systems run continuously from 6 pm Sunday until 6 am the following Sunday.

On the second and fourth Fridays of each month from 5 am to 7 am the CYBER CA system is unavailable. Low-rate hours are from 8 pm to 8 am Monday through Friday, and all operating hours on Saturday and Sunday.

ACS Newsletter Subscription Request

Send to ACS Computing Information Center, 1 Nicholson Hall, 216 Pillsbury Drive SE, Minneapolis, MN 55455

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