SPCS Newsletter

January 1987

St. Paul Computing Services   University of Minnesota

CONTENTS

New Hours

As many of you have already noticed, SPCS has extended its hours of operation to near 24 hour service, Monday through Friday. The new hours are:

Monday - Friday*	7:00 AM - 6:00 AM
Saturday	8:00 AM - 4:00 PM
Sunday	2:30 PM - 10:00 PM

*The BATCH system will be taken down shortly before midnight each night and brought back up shortly after midnight. Scheduled system maintenance is Thursday, 6:00 AM - 8:00 AM; the computer is not available during that time.

System backups are run during the third shift (11:00 PM - 7:00 AM).

The reduced rate (BASIC rate) is in effect from 5:00 PM until 6:00 AM of the next day. Remember, you must logon after 5:00 PM to have your CMS session at the reduced rate. To have the reduced rate apply to a BATCH job, you must insert the '/SET RATE=BASIC' line in the job.

New Help Desk Hours

The hours of the help desk will be expanded beginning February 16, 1987. There will be an Associate Help Desk Consultant on duty at the help desk in 90A Coffey Hall during the following hours:

Monday - Friday	9:00 AM - 5:00 PM

Software consulting will be offered in 90D Coffey Hall during the hours listed below.

Monday - Friday	10:00 AM -12:00 PM
Monday - Thursday	1:00 PM - 4:00 PM
Friday	1:00 PM - 3:00 PM

Additional Help Desk Locations

SPCS will begin offering help desk services on the West Bank and East Bank campuses on February 16, 1987. The locations and hours will be announced in a LOGON MESSAGE and will be posted in 90 Coffey Hall.

TINCAN to be Available

SPCS has obtained the rights to distribute Yale University's TinCan communications software package. TinCan is a sibling of the YTERM communications package that we now distribute for IBM PCs and compatibles.

TinCan is a terminal emulation and file transfer program for the Apple Macintosh. TinCan, unlike some of the other Macintosh communications software packages, is tailored to allow full screen access to the IBM 4381 mainframe, as well as full screen uploading and downloading. TinCan offers error correcting file transfer mode using the PCTRANS command. Local printing is also available from a mainframe session, using the TPRINT command. SPCS highly recommends this product

for full screen terminal emulation and upload/download functions.

Applications will be accepted for TINCAN beginning on Feburary 16, 1986. SPCS will distribute TinCan for $7.00 to University of Minnesota full time students, faculty and staff with at least a 50% appointment. The TINCAN distribution license is currently pending approval. If it is granted, those not meeting the above qualifications will be required to pay $27.00; $20.00 of this fee covers Yale University royalty charges.

Contact the SPCS help desk (624-6235, 90 Coffey Hall) for further information on TinCan and an application form. Free demonstrations of TinCan will be presented in the SPCS short course series; please see the short course section of this newsletter for dates and times of these demonstrations, if you are interested in TinCan.

Computer Upgrade

Over the Christmas break SPCS had a new, faster processor installed for the IBM 4381. We are now operating an IBM 4381 - R14. This machine is a dual processor with 5.88 mips and 32 megabytes of main storage. This new processor will further increase execution speed and will enable us to lower the computer processing rate in the near future.

BITNET: Questions and Answers

In the last SPCS Newsletter, we provided an article on electronic mail. This article extends the BITNET discussion, by presenting a series of questions concerning BITNET that users have asked since BITNET was introduced at SPCS. If you have other questions, please contact the help desk (624-6235).

The following article is reprinted and adapted from the Louisiana State University SNCC NEWS (September, 1986).

Q. Is there an advantage in using the MAIL command over the NOTE command on CMS?

A. Yes, in some cases there is an advantage to using MAIL instead of NOTE.

> 1.) MAIL has two subcommands (REPLY and FORWARD) that NOTE does not have.
> 2.) MAIL has some additional "header" fields (e.g. SUBJECT) which make it attractive for some applications, especially when the message is to be sent to users outside the SPCS environment.
> 3.) MAIL may be used for sending both notes and files (limited to text files with a maximum record length of 80 characters), while NOTE is able to send notes only.

Q. Most of my communications will be with people at other BITNET sites -- and sometimes with people on foreign networks. What commands should I be using?

A. TELL works great for sending short notes to other BITNET users who are logged on, but is useless if the user is not logged on or a connecting node is down. The NOTE and SENDFILE commands are also handy for sending notes and files to users on BITNET. However, the command which you will probably find most useful for sending messages AND files to users -- both within BITNET and outside BITNET to foreign networks -- is the MAIL command. When combined with the MAILBOOK command, you will find that you have a powerful pair of commands, especially for use outside of BITNET. (Note: Files sent using the MAIL command have a maximum record length of 80 characters.)

Q. I expect that most of my communications work on CMS will be local. Do you have any suggestions regarding the commands that I should use?

A. You should begin by learning the TELL, NOTE, RDRLIST, MAIL and MAILBOOK commands on CMS. (See the Documentation Notes BITNET and Introduction to MAILER from SPCS for an introduction to these commands.)

Q. How much does it cost me to use BITNET?

A. One of the reasons that we are so enthusiastic about the use of BITNET is that it is an incredible bargain. The user pays only the minimal charge associated with being logged on to CMS at his own site, as usual. There is no charge for use of the extensive networking features. That is, to send a file to Ireland costs you no more than to send a file to another SPCS user.

Q. Sometimes I need to send the same message or file to a group of users -- like all the members of my department. Does CMS have a way to make this process less painful than having to enter each user's logonid?

A. The CMS NAMES command is built just for the need that you mentioned. It permits you to enter individual names into a distribution list.

Q. How may I obtain a current list of BITNET Institutions?

A. From the CMS ready prompt, type:

HELP BITNET NODES

Q. What other countries are included in BITNET?

A. There are 19 countries currently represented. These include Austria, Belgium, Canada, Denmark, England, Finland, France, Germany, Greece, Ireland, Israel, Italy, Japan, Netherlands, Norway, Spain, Sweden, Switzerland, and the United States.

Q. What are the node names of the University of Minnesota computers that are connected to BITNET?

A. There are currently five computers at the University of Minnesota which belong to BITNET, they are:

COMPUTER	NODE NAME
SPCS	UMINN1
School of Management	UMNSOM
Simulation Facility	SIMVAX
Academic Computing	UMNACBR
Academic Computing VAX	UMNACVX
U of M, Morris	UMNMOR
U of M, Duluth	UMNDUL

To correspond with someone on one of these nodes, you must obtain the person's userid on the respective system. For example, to send a note to user VX123 on the VAX computer, you should enter the following command:

NOTE VX123 AT UMNACVX

Online News Facility

As you may have noticed, there are many changes occurring at SPCS. There are many more enhancements anticipated. We strive to keep our users up to date with the latest changes through this newsletter, but many times the exact timing of an event cannot be planned in advance. We offer the latest news about our system in the form of online helpfiles, LOGON MESSAGES, and SYSNOTES. When a change is about to take place, we announce the fact in a LOGON MESSAGE or SYSNOTE and usually also inform you of how to obtain more information on the change. LOGON MESSAGES usually deal with system availability (scheduling) and SYSNOTES deal with software or hardware changes.

As you will see in latter parts of this issue, there have been changes to the operating system, and new releases of software that have occurred since the last newsletter. These were announced in SYSNOTES and had help files available with instructions on how to test the new systems, as well as how the changes would effect our users.

LOGON MESSAGES and SYSNOTES

When you logon to your CMS account, you will automatically see the current LOGON MESSAGES and SYSNOTES. Please be on the look out for these - DO NOT IGNORE LOGON MESSAGES. If you are already logged on when a LOGON MESSAGE or SYSNOTE is installed, or if you want to review them, type in the following commands:

QUERY LOGMSG

If there are any LOGON MESSAGES, they will be displayed on your terminal. If there are none, you will simply receive the READY MESSAGE (R;). To view the current SYSNOTES, type in:

SYSNOTES

If there are current SYSNOTES, they will be displayed at your terminal. If there are no current SYSNOTES, you will see only the READY MESSAGE (R;).

News

To view a NEWS file, type in:

HELP UM <newsfile name>

where the newsfile name is currently one of the following:

NEWS
contains information on the new rates (as of July1, 1986), SAS version 5 availability, and NOMAD2 tools and educational databases that are available.

VMSP4
contains the announcement of the installation and availability of CP and CMS release 4. A testing period was provided before release 4 was made the default on November 25.

SAS5
notes the major differences between version 5 of SAS and the previous release of SAS, version 82.3.

New Software

SPCS has installed and plans to have the following new software products available in March, 1987.

• C - a general purpose programming language that offers fast execution speed, flexibility in building applications, and portability of code.

• VS FORTRAN - a modern FORTRAN compiler that includes optimization options and debugging facilities. FORTRAN IV and FORTRAN 77 programs should be compatible with VS FORTRAN.

• IMSL (International Mathematical and Statistical Library) - a library of callable FORTRAN statistical and mathematical routines.

Preliminary documentation will be available for these products from the help desk in March, 1987.

Software

New Release of the Operating System Installed

Release 4 of CP (Control Program) and CMS (ConversationalMonitor System), the two major components of the VM (VirtualMachine Facility) operating system are now the default version.

There have been no major problems reported in the new release. See the September, 1987 newsletter

article for a discussion of the new features. With the change to the new release of the operating system, SPCS has also taken the opportunity to make some additional changes in the CMS environment that we think will benefit our users.

•The USERPROF exec (an exec that is executed within everyone's PROFILE EXEC at logon) has been modified so that linemode users are identified and the ASCIIKEY exec is automatically executed for them, and so that for fullscreen users, the CHARDEL (character delete), LINEDEL(line delete), and ESCAPE are turned off.

The ASCIIKEY EXEC establishes default line editing keys that are more useful than the CMS defaults. The change in the CHARDEL character means that once you are logged on in full screen mode, the @ (at symbol) will no longer delete characters from the command line. This will be good news for MAIL and NOTE users who wish to use the @ symbol in electronic addresses.

•The old BATCH system (jobs contained a MACHINE SAS or MACHINE SAS2) statement has been disabled.

•The USERPROF EXEC also includes a change that allows aparameter to be passed to it that directs the exec to have the FLIST command loaded properly into CPU main memory.

If you wish to continue to use the FLIST command, to get a full screen list of your files, you must change the EXEC USERPROF line to the following:

EXEC USERPROF FLIST

The CMS FILELIST command also provides a full screen list of files. SPCS suggests that users use FILELIST.

Expanding Your Memory

With the installation of the new release of SAS (Version 5), many users who execute SAS through the interactive or online non-interactive mode have noticed that they run out of storage (memory) when they try to run a SAS program that calls for a SORT or graphics. At SPCS, general users logon with1024K bytes (1 megabyte) of memory. Accounts are generally enabled for up to1500K bytes of memory. The CP DEFINE command may be used to redefine the amount of virtual storage for a logon session. For most purposes 1024K is adequate for non-SAS work and 1500K is adequate for processing in SAS.

If you have a special requirement and wish to have access to more memory than 1500K, speak to a help desk consultant who will describe the necessary forms for increasing your limit. An alternative is to execute the program through the BATCH system. BATCH, by default has 2000K available and greater amounts of storage may be requested in any job with the '/SET SIZE=n' statement.

The steps to define more storage for interactive CMS processing are:

From the CMS command line, type in the following:

DEFINE STORAGE 1500K

You will now see a message that you are in a disabled waitstate. You must now re-ipl CMS.

IPL CMS

Wait for the R; (ready message) before trying to execute any commands.

Re-ipling does not detach any disks. It does release disks, so you must re-ACCESS disks (other than the 191) and re-issue the GET SAS command.

You may then execute your program.

Accessing SAS Sample Program Libraries at SPCS

With each SAS product, SAS Institute distributes a library of sample programs. These programs cover a wide variety of SAS applications and may be useful as examples for programming your own applications.

At SPCS, access to sample libraries for the following products is available.

Base SAS (includes statistics examples)
SUGI Supplemental Library Procedures
SAS/GRAPH for graphics examples
SAS/ETS for econometrics and time series applications
SAS/OR for operations research applications

These sample programs are accessed from CMS. From the online product library list, you may select programs of interest to you to edit, make copies, and/or print.

For further information, request Documentation Note 21.

Version 5 of SAS

Version 5 of SAS was installed and made the current version in November, 1986. Many procedures have been rewritten for efficiency and portability.

New procedures and statements in Version 5 of SAS include:

Display Manager System. This new full screen facility allows online CMS SAS users to interact with all parts of the SAS job.

ACECLUS, a new procedure for preliminary data transformation to make classic clustering methods perform better.

CATMOD, a procedure for categorical data modeling with enhancements for log-linear models and repeated measures analysis. This procedure replaces the procedure FUNCAT.

COMPARE, a new procedure to compare two SAS data sets.

LIFETEST, a new survival data procedure for product-limit and life table estimates and rank tests.

LIFEREG, a survival analysis procedure for fitting accelerated failure time models.

REPEATED, a statement that can be used in PROC ANOVA and GLM for repeated measures analysis. Both ANOVA and GLM are now better equipped to handle repeated measures designs.

FOOTNOTE, a statement that can be used in DATA or PROC steps to print footnotes at the bottom of the page.

SYSLIN, a new procedure in the SAS/ETS product that replaces PROC SYSREG and provides two new estimation methods.

GANTT, a new procedure in the SAS/OR product that can be used to monitor progress of projects and produce Gantt charts.

the TEMPLATE facility in SAS/GRAPH, allows placement of graphs anywhere on any graphics device and placement of multiple graphs on a graphics page.

the ANNOTATE facility, allows you to customize

graphs from SAS/GRAPH procedures or create your own graphics without using traditional SAS/GRAPH procedures.

Enhancements to Version 5 of SAS include the following:

Input to PROC CLUSTER can now be distances or coordinates.

The FREQ procedure has many new tests and measures of association for two-way tables.

Several new options for regression calculations were added to PROC REG.

PROC RSQUARE has several new options to compute a wide variety of model-selection statistics and estimate parameters.

Conversion to Version 5

With any SAS data sets created under SAS release 79.6 or earlier can only be read by Version 5 of SAS. These older sets cannot be updated. Convert these older sets to Version 5 data sets, if you wish to update them. To do that, make a copy of the older data set while running under Version 5 of SAS. This can be done either by writing a data step or by using PROC COPY, making sure that you assign a new DDNAME (or first part name) to the data set. Suppose the SAS dat set CARS.SALES80 was written with release 79.6. The following DATA step will copy it to a Version 5 SAS data set called AUTOS.SALES80.

        DATA AUTOS.SALES80;
            SET CARS.SALES80;

The following PROC step illustrates how to copy CARS.SALES80 to a Version 5 SAS data set AUTOS.SALES80.

        PROC COPY IN=CARS OUT=AUTOS;
            SELECT SALES80;

With PROC COPY, you can copy all data sets with the same DDNAME in one step. For example, there are five CARS data sets created with SAS release 79.6: CARS.SALES76, CARS.SALES77, CARS.SALES78, CARS.SALES79, and CARS.SALES80. The PROC step shown below will copy all five of these SAS data sets to AUTOS.SALES76, AUTOS.SALES77, AUTOS.SALES78, AUTOS.SALES79, and AUTOS.SALES80.

        PROC COPY IN=CARS OUT=AUTOS;

Certain procedures require more memory (SORT and graphics procedures) or time (GLM) than in the previous Version. See the article earlier in this newsletter for information on accessing more memory.

For people who have not converted their SAS programs to run under SAS Version 5 or who have run into problems in the conversion, SPCS will keep the old version of SAS (82.3) available until at least June, 1987. Users should address the required changes; if there are problems or differences in the new version that are not listed above, please contact the help desk (624-6235). If you need to process under the old version, speak to the associate consultant at the help desk.

SAS for the IBM PC

Two SAS microcomputer products are distributed by SPCS. Base SAS and SAS/STAT. These products are available to University of Minnesota faculty and staff. Faculty, staff, and registered students of the University of Minnesota may use these products. Use of these products is limited to academic studies and/or research and does not include any profit-making or commercial use.

The minimum hardware requirements for the PC SAS system include 512K memory, a fixed disk with at least 10 megabytes of storage (20 megabytes is recommended), and PC DOS Release 2.0 or later. The Base SAS product alone takes over 4 megabytes of disk storage. The SAS/STAT product takes about 1.5 megabytes of disk storage.

The Base SAS product is an all-purpose data management, retrieval, and report-writing tool featuring a full-screen windowing facility. Current mainframe SAS users will find that the PC Base SAS system contains many of the same data step commands and non-computer-system dependent procedures described in the SAS User's Guide: Basics.

The SAS/STAT product contains several procedures for statistical analysis. In this release of SAS/STAT, there are procedures for analysis of variance, regression, factor analysis, discriminant analysis, and categorical data analysis. Current mainframe users will find that SAS/STAT contains many of the statistical procedures described in the SAS User's Guide: Statistics. The procedures available are: REG (includes options formerly found in PROCs STEPWISE and RSQUARE), GLM, ANOVA, NPAR1WAY, TTEST, CATMOD, DISCRIM, FACTOR, CANCORR, ORTHOREG, and SCORE.

SAS microcomputer products are licensed on an annual basis. There is an annual fee for each product. Charges will not be prorated. The renewal date for SAS microcomputer products is the first of December each year.

Only University of Minnesota budget numbers may be used to obtain SAS microcomputer program products.

Software is distributed on 5 1/4" double sided double density diskettes.

ITEM	DESCRIPTION	CHARGE
Acquisition	Initial distribution; Annual renewals; Included in this fee is the cost of the diskettes, copying, and an administrative charge. Installation instructions are included.	$ 75.00/ product/ work- station; $225.00/ product/ network
Update	There is no fee for ob- taining a product update or product enhancement during the year.	No Charge

For further information, please call the Help Desk at, 624-6235. To request an application, please call our Main Office at 624-7788.

NOMAD2 Notes

The NOMAD2 Reference Manual has an error in Chapter 8. Pages 1 through 30 has a '+' (plus sign) in place of an '=' (equal sign) in every syntax statement and example.

For example, the FOR command on page 8-23 has the following syntax statement:

    FOR &variable + range-expression

This should read,

    FOR &variable = range-expression

Please note the change in your NOMAD2 Reference Manual.

YTERM Notes

COM Ports and YTERM Problems

Very few users have reported problems installing YTERM, the full screen terminal emulation package

that SPCS distributes. One problem that has come to our attention is that YTERM will NOT work on COM port 2, unless COM port 1 exists.

New Release of PCTRANS and TPRINT

A new release of PCTRANS and TPRINT was installed in October. The new release presents no changes for users. New online help files were installed at the same time. You may want to view the online help files.

The autobaud problem still exists and users may experience difficulties in uploading and downloading files and in using the TPRINT command from YTERM on personal computers connected through non-ITE phones. The Telecommunications Services Department is attempting to resolve this problem.

Project ASSIST

Project ASSIST will offer a number of workshops during the Winter Quarter on topics related to computer-based instruction. Faculty members can attend these workshops free of charge, although advanced registration is required. Some of these workshops have been offered before, but the format of several workshops has been streamlined.

The following workshops will be offered during the Winter Quarter:

Jan. 28	Computer-Based Instruc- tion in Higher Education: A Guided Tour of Possi- bilities	335 Peik Hall
Feb. 3	Evaluating Instructional Software	335 Peik Hall
Feb. 6	Introduction to PLATO	Appleby Computer Lab
Feb. 19	A Programmer's Guide to Instructional Software	335 Peik Hall
Mar. 3	Introduction to PLATO	Appleby Computer Lab

For persons developing courseware, Project ASSIST is offering two Turbo Pascal libraries and a computer-based testing system.

For more information about the workshops and/or computer programs call Paul Wieser at 626-1090.

Computer Short Courses

The following short courses will be offered by St. Paul Computing Services during the Winter Quarter.

SHORT COURSE NAME	DATE	DAY	TIME
User Orientation	Feb 5	(Th)	3:00-5:00
Introduction to CMS*	Jan 22, 23, 26, 28	(Th, F, M, W)	3:00-5:00
	Feb 18, 20, 23, 25	(W, F, M, W)	3:00-5:00
Introduction to NOMAD2	Mar 3	(T)	3:00-5:00
YTERM Demonstration	Jan 29	(Th)	3:00-4:00
	Mar 4	(W)	3:00-4:00
TINCAN Demonstration	Jan 29	(Th)	4:00-5:00
	Mar 4	(W)	4:00-5:00
SAS (Statistical Analysis System)	Feb 24, 26, Mar 3	(T, Th, T)	3:00-5:00
PC SAS Overview	Mar 5	(Th)	3:00-5:00
CMS Mail and BITNET	Jan 27	(T)	3:00-5:00
CMS Advanced Topics	Jan 30	(F)	2:00-5:00

* Additional Introduction to CMS classes will be scheduled depending upon user demand. Look for announcements of extra classes in the SPCS User Room (90 Coffey Hall). If the listed course schedules are not convenient, please let us know of better times and days.

User Orientation

The User Orientation presentation will introduce new and prospective users to the SPCS facility with a brief description of the hardware and software available, and a short tour of the Computer Center.

Introduction to CMS (Operating System)

This short course will introduce the Conversational Monitor System, an operating system that allows one to edit and save files, submit batch jobs, and run jobs interactively. SAS and NOMAD2 (a data base management system) may be accessed interactively through CMS.

Introduction to NOMAD2

The Introduction to NOMAD2 demonstration will introduce a Data Base Management System. NOMAD2 is a fourth generation language, which may be used for data management, retrievals, application programming, report writing, and graphics.

YTERM Demonstration

The YTERM Demo will introduce YTERM, a micro computer system package that provides terminal emulation and file transfer utilities. SPCS distributes YTERM for a small charge and highly recommends its use, with IBM PCs and compatibles, for accessing the SPCS mainframe. The demonstration will cover installation, execution and use.

TINCAN Demonstration

The TINCAN Demo will introduce TINCAN, a micro computer system package that provides terminal emulation and file transfer utilities for the APPLE Macintosh. SPCS distributes TINCAN for a small charge and highly recommends its use with Macintoshes for accessing the SPCS mainframe. This demonstration will cover installation, execution and use.

SAS (Statistical Analysis System)

The SAS course will cover the Statistical Analysis System, a comprehensive statistical package that provides software tools for data storage and retrieval, report writing, general programming, and graphics.

PC SAS Overview

The PC SAS Overview will cover some of the basic features specific to the PC version of SAS.

CMS MAIL and BITNET

This demonstration will cover CMS commands to send messages and files to other computer users at SPCS and, through BITNET, to other universities. BITNET is an international network of over 400 research and educational institutions through which electronic mail, files and messages may be sent.

CMS Advanced Topics

The CMS Advanced Topics class will present information on the use of tapes at SPCS, commands to request information about the user's computing environment, and the SPOOL command.

User Orientation will be held in B45 COB, with no registration required.

Note: For the SAS and CMS Advanced Topics, you don't need programming experience, but previous registration in a CMS class or permission of the instructor is required.

Note: For the PC SAS Overview class, either previous registration in a SAS class is required or permission of the instructor. Because of our contract with SAS Institute for the PC SAS product, this class is open only to University of Minnesota faculty, staff, and registered students with a current fee statement.

To register for the short courses, please obtain and complete a registration form from SPCS (624-7788; 50 Coffey Hall). Return it to the Main Office, 50 Coffey Hall, prior to the start of the class. Most short courses have a modest fee associated with them and require full payment with registration. Sorry, no refunds are made after the class begins.

If you have questions about short courses, their cost, or registration, please call Janice Jannett or Diane Suski (624-7788).

Documentation

SPCS makes many forms of documentation available to its users. We sell vendor manuals (IBM, SAS SPSS-X, etc.) on the operating system and software products and introductory information on local usage of many of our software packages. Documentation may be purchased in the Main Office, 50 Coffey Hall. All documentation that is available for sale is also available for reference in 90 Coffey Hall.

We offer a number of documents at no charge. The free introductory materials (this includes a Documentation Note series) are available in 90 Coffey Hall and also in 50 Coffey Hall.

Below is a list of the Documentation Note series.

Documentation Note 5 (Manuals and Publications from SPCS lists all of the documentation available from SPCS and offers a short description of each item.

St. Paul Microcomputer Lab

Location: B50 St. Paul Library
Phone: 624-3269

Regular School Hours:

Monday - Thursday	8:00AM - 8:00PM
Friday .	8:00AM - 5:00PM
Saturday	12:00PM - 4:30PM
Sunday	CLOSED

Summer & Quarter Break Hours:

Monday - Friday	9:00AM - 4:30PM
Saturday	CLOSED
Sunday	CLOSED

Access Cards: $20.00/Quarter

This card will permit access to eight microlabs on the Twin Cities Campuses (see below). This will increase

availability of hardware/software and some consulting services.

Printer Access Cards: $1.00

This card will permit you to print your files on the manuscript quality laser printers at $0.10 per page.

You may obtain access and printer cards from the Bursars' office.

Software:

IBM PCs	Macintosh	Apple IIe
Lotus 123	MacWrite	AppleWorks
Minitab	MacPaint	MouseWrite
Statistix	Chart	MousePaint
WordStar	Multiplan	
WordPerfect	Word	
WordStar 2000	File	
dBase III	MacPascal	
Turbo Pascal	MacTerminal	
	MS-BASIC	

Microcomputers:

9 IBM PCs with 256k memory
2 IBM PCs with 512k memory
3 IBM PCs with 640k memory
2 Macintosh Plus with 800k external drives
3 Macintosh with 512k memory
1 Macintosh with 128k memory
2 Apple IIe with 2 disk drives

Note: Some IBM PCs are also equipped with a 8087 Math Coprocessor, Paradise Graphics Adapter, and an IBM Color monitor

Printers:

1 HP Laserjet Plus
5 Epson FX80 printers
1 Apple LaserWriter Plus
4 Imagewriter printers

At the St. Paul Microcomputer Lab, attendants will be present to sign out software and manuals that are available for use in the lab. Instructors may arrange to have assignment materials distributed via the lab attendants. The lab may be reserved by class instructors who wish to use the lab as part of a course. To reserve the lab, or if you have questions, call Karen Bellows at 624-7788.

The micro lab is operated on a first-come, first-serve basis. The access card will be accepted at the following locations:

LOCATION	PHONE
St. Paul:	
B50 Central Library	624-3269
West Bank:	
170 Anderson Hall	624-6526
Minneapolis:	
204 Appleby Hall	625-5080
50 Eddy Hall Annex	625-4351
14 Folwell Hall	625-4896
306B Lind Hall	625-9032
8-425 Moos Tower	625-1477
9 Walter Library	626-1899

Micro Help Line

ACSS Microcomputer Systems Group
Room: 125 Sheperd Labs
Phone: 626-4276 (dial MA MICRO)

Monday, Tuesday, Friday	9:00AM - 12:00PM
	1:30PM - 4:00PM
Wednesday, Thursday	9:00AM - 4:00PM

Data Entry Services

The Data Entry Section of St. Paul Computing Services is open from 8:00 to 4:30, Monday through Friday, in Room 6 North Hall.

Services include:

1.) Punching and verifying data from most types of source documents (i.e., coding sheets, questionnaires, etc.). If needed, 80-column coding sheets may be obtained from the Data Entry Section.
2.) Providing assistance in preparation of source documents for acquiring the most efficient data entry.
3.) Conversion of tape to cards or cards to tape (depending upon card condition).
4.) Hard copy available from tape or cards (depending upon card condition).

Jobs are done on a first-come, first-serve basis. Turnaround time may vary with the workload. Output is available on cards or on 800/1600/6250 bpi tapes, which will run on an IBM, CYBER, or other mainframe computers. Unless special arrangements have been made to purchase tapes, tapes are to be

returned to the Data Entry Section as soon as you are finished with them.

For information about current turnaround time, cost estimates or other questions, contact Linda Pichner or Cleo Medlock at 624-7297. Account numbers for services may be obtained at 50 Coffey Hall or by calling Diane Suski at 624-7788.

Statistical Clinic

The Statistical Clinic, on the St. Paul Campus, is staffed by graduate students of the School of Statistics, and supervised by faculty members of the Applied Statistics Department. The Statistical Clinic provides statistical consulting to researchers at the University of Minnesota, generally without charge. Assistance on appropriate experimental designs and methods, data analysis, and the interpretation of results are part of the mission of the Clinic.

Many statistical problems can be handled completely by the personnel in the Clinic. However, more difficult problems will be referred to an Applied Statistics faculty member.

The consulting hours of the Statistical Clinic for the Winter are:

Monday, Wednesday, Friday	10:00AM - 5:00PM
Tuesday, Thursday	9:00AM - 3:00PM

Room: 125G COB
Phone: 625-3121

General Information

Reduced Rates for Off-hour Users

Computer processing performed after 5:00PM daily (Monday thru Friday) and all day Saturday and Sunday receives a 25% reduction on three billable components: Central Processor Time, High Speed Input/Output (disk and tape), and Connect Time.

MERITSS System Connection to SPCS

Users can gain access to the IBM 4381 computer system at SPCS through the MERITSS System (Interactive Instructional Labs). There are now six ports dedicated to this type of communications traffic. Those wishing to access SPCS in this way can obtain the handout named "Connecting a Terminal Through MERITSS to SPCS" from our Main Office or from 90 Coffey Hall

Classroom Office Building Interactive Instructional Lab Hours

Lab Hours:

Monday - Friday	8:00AM - 10:00PM
Saturday	9:00AM - 1:00PM

Lab Attendant on Duty:

Monday, Tuesday, Thursday	3:00PM - 10:00PM
Wednesday	6:00PM - 10:00PM
Friday	2:00PM - 6:00PM

Should you be the last person out of the lab during the hous shown above, please leave the doors unlocked (SPCS personnel are responsible for locking doors at the designated times). Thank you.

SPCS Locations, Hours, and Phone Numbers

Main Office	50 Coffey Hall	Monday - Friday 8:00AM - 4:30PM	624-7788
User Rooms and Computer Hours*	90 Coffey Hall	Monday - Friday 7:00AM - 6:00AM Saturday 8:00AM - 4:00PM Sunday 2:30PM - 10:00PM	
Help Desk	90 Coffey Hall	Monday - Thursday 10:00AM - 12:00PM 1:00PM - 4:00PM Friday 10:00AM - 12:00PM 1:00PM - 3:00PM	624-6235
Data Entry	6 North Hall	Monday - Friday 8:00AM - 4:30PM	624-7297
Interactive Dialup			624-4220

* After hours, Saturday, and Sunday access to the center may be achieved by using the tunnel passageway from the Student Center. After 10:00PM, access may be obtained thru the St. Paul Central Library.
Note: The DOS operating system will be shut down at 10:00PM Monday - Friday.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, color, sex, national origin, handicap, age or veteran status.

St. Paul Computing Service
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