

SPCS Newsletter

October 1987

St. Paul Computing Services

University of Minnesota

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New ACCount STATUS Command

You asked for it; you got it. SPCS has developed a program called ACCSTAT that allows you to view your computer account balance information. To use this program, follow these steps.

1. **Type** the CMS command **ACCSTAT** and **press ENTER**.

Most billing information is updated daily on weekdays at 7 a.m... Billing charges for programming, data entry, and tape storage are updated monthly.

2. **OPTIONAL: Type beginning and ending dates** of the time period for which you want billing information.

This step is optional because ACCSTAT assumes the beginning date to be July 1, 1987, and the ending date to be the present date. If you want to specify any other range of dates, use the MMDDYY format for each date (e.g., 100987 is October 9, 1987).

3. **Press ENTER**. (Then **press PA2** or **CLEAR** if the screen shows MORE... or **HOLDING** in the lower right-hand corner.)

You will see a message from ACCSTAT: the

information has been sent to your reader. Wait for verification of that message, which is the following line:

PUN FILE nnnn FROM ACCSTAT COPY 001 NOHOLD

4. **Type** the command **RDRLIST** (abbreviated as **RL**) and **press ENTER**.
5. Put the cursor next to the file **PT1 LISTING**.

To store this file on your disk: type **RECEIVE / (REPLACE**. The file **PT1 LISTING** will show up in your **FILELIST** screen, and you can handle it like any other CMS file.

To only look at this file: press **PF11**. The file will appear on your screen. Press **PF8** to page down the file, **PF7** to page up. Press **PF3** to exit the file, once you are done looking.

To discard (erase) this file: type **DISCARD** beginning in the command area and press **ENTER**.

New Electronic Communication System Available

Completely menu-driven mail, bulletin boards, conferencing, directories and lots more

Electronic communication allows computer users to share information. The new SPCS Communication system provides electronic mail, bulletin boards, conferencing, file transfer between microcomputers and mainframe systems (perhaps for the purpose of sending them to another computer user), electronic scheduling of meetings, rooms and equipment, and easy to search online directories. You can communicate with colleagues around the world in literally seconds via BITNET.

SPCS has had several different electronic mail and scheduling systems available for some time. This past summer, great development effort was put

into creating a completely menu driven system that allows access to a spectra of electronic communications. The new system uses IBM PROFS (PProfessional Office System) for its backbone, with the addition of many specially developed features.

If you opened your SPCS computer account after October 1, 1987, you are already enabled to use the new system. **If you opened your account before October 1, 1987, you must contact SPCS and request access to this new version of PROFS.** You may call the main office (624-7788) between 8 a.m. and 4 p.m. or pick up a form from the Help Desk (90 Coffey Hall) and return it to 50 Coffey Hall.

Included with this newsletter is a Quick Reference pull-out for information on accessing SPCS and using a few of the functions available within the new system. For more detailed information, refer to the SPCS Electronic Communication User's Guide. The guide is available for reference in 90 Coffey Hall and for sale in 50 Coffey Hall.

Just to give you the flavor of the new system, the Main Menu screen is displayed below. After logging on to the SPCS mainframe, many users will be brought directly into the Main Menu. Others must type **PROJECT-GROUP** from the CMS command line.

If you'd like a free demonstration of the new system, ask the person at the Help Desk.

S P C S

**Main Menu
and
PROFS Services**

Press one of the following PF keys or type the number of your choice and press ENTER.

| | |
|----------------------|--|
| PF1 Calendar | Work with Calendars |
| PF2 Read Mail | Open your mail |
| PF3 Send Mail | Send a note |
| PF4 Review | Review Notes you have sent |
| PF5 Distribution | Distribution lists, nicknames, etc. |
| PF6 Directory | Directory Services |
| PF7 Calculator | Use the calculator |
| PF8 Filetran | Transfer files between Micro and Mainframe |
| | |
| PF10 BB/Conferencing | Bulletin Board & Conferencing Services |
| PF11 Utilities | Change Password, View files, etc. |
| | |
| PF 9=Help 12=End | Mail Waiting |

====> _

Want a Tailored Menu System for your Group?

The new menu system described above is built around a concept of groups. Members of a group have private access to their own bulletin boards, conferences, and directories, and may

specify the design of their main menu.

Each group has a manager who is responsible for the maintenance of the directory, bulletin board(s), and conference(s). The manager also controls which users have access to these functions.

A group represents a collection of computer users that share some special interest or relationship. For instance, some departments or colleges may desire to create their own group and have bulletin boards and directories, or a professor may want a group to represent a University of Minnesota class.

Contact the SPCS main office (624-7788, 50 Coffey Hall), if you would like to know more about starting a group.

Online Consulting

Online consulting is now available at SPCS. You may send your questions as mail (please use PROJECT-GROUP to send mail). The consulting staff will check for questions on the following schedule: each weekday between 8 and 9 AM and at least once per hour between 9 AM and 4 PM. Mail will usually be sent for a reply, but we ask that you include your telephone number so that we may contact you if we need more information and direct contact seems most expedient.

In your mail item question, please include the following:

- Your name
- Your phone number, where we can reach you during the day.
- The symptoms of your problem or your question.

- A copy of the program and/or SASLOG, if that is appropriate.

DO NOT SEND ANY PASSWORDS (logon or disk).

Send the mail item to userid **ICON**.

Project Assist CBI Workshops

Project Assist is a University-based service providing faculty with free consultation and assistance in the development of computer-based instruction (CBI). The following workshops are being offered during Fall Quarter, 1987. To register, send your name, department, and campus address & phone to the Project Assist office (33 Fraser Hall, 106 Pleasant St. S.E., Mpls., MN, 55455, or call 626-1090), and indicate which workshop(s) you would like to attend.

Evaluation of Instructional Software...

Tue., Oct. 27 / 10:15 a.m. - 12:15 p.m. / 335 Peik Hall

PC/PILOT: An Authoring Language...

Wed., Nov. 4 / 9:15 - 11:15 a.m. / 335 Peik Hall

Introduction to Interactive Videodisc...

Tue., Nov. 10 / 2:15 - 3:15 p.m. / 204 Pattee Hall

Computers and Music...

Time and location to be announced

GENERAL INFORMATION

| | | | | |
|-------------------------------|-----------------|------|--------------------|----------------------|
| Main Office | 50 Coffey Hall | M-F | 8:00 AM - 4:30 PM | 624-7788 |
| User Room and Computer Hours* | 90 Coffey Hall | M-F | 7:00 AM - 6:00 AM | |
| | | Sat | 8:00 AM - 4:00 PM | |
| | | Sun | 2:30 PM - 10:00 PM | |
| Help Desk | 90 Coffey Hall | M-Th | 9:00 AM - 5:00 PM | 624-6235 |
| | 140 Blegen Hall | F | 9:00 AM - 4:00 PM | |
| Data Entry | 6 North Hall | T, F | 9:00 AM - 12:00 PM | |
| Interactive Dialup | | M-F | 8:00 AM - 4:30 PM | 624-7297 624-4220 |

*After hours, Saturday, and Sunday access to the center may be achieved by using the tunnel passageway from the Student Center. After 10:00 PM, access may be obtained through the St. Paul Campus Central Library.

Note: The CMS batch system goes down at 12:00 AM (midnight) and is brought back up at 12:15 AM Monday through Thursday, it goes down at 3:45 PM on Saturdays, and 9:45 PM on Sundays.

COMPUTER SHORT COURSES

The following short courses will be offered by St. Paul Computing Services during Fall Quarter, 1987.

| SHORT COURSE NAME | DATE | DAY | TIME |
|-----------------------------------|-------------------|----------|-------------|
| User Orientation | Oct. 14 | W | 3:00-5:00 |
| Introduction to CMS* | Oct. 20,22,27,28 | T,Th,T,W | 3:00-5:00 |
| CMS Mail and BITNET | Oct. 23 | F | 3:00-5:00 |
| YTERM Demonstration | Oct. 30 | F | 10:00-11:00 |
| SAS (Statistical Analysis System) | Oct. 30, Nov. 3,4 | F,T,W | 3:00-5:00 |
| Intro to SAS/GRAPH | Nov. 2 | M | 1:00-3:00 |
| TINCAN Demonstration | Nov. 6 | F | 10:00-11:00 |
| PC SAS Overview | Nov. 9 | M | 3:00-5:00 |
| CMS Advanced Topics | Nov. 12 | Th | 2:00-5:00 |
| Introduction to NOMAD2 | Nov. 13 | F | 3:00-5:00 |
| NOMAD2 Application Development | Dec. 9,10,11 | W,Th,F | 10:00-4:00 |

* 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 times and days that are better for you.

User Orientation

This short course introduces the SPCS facility to new and prospective users. Following a brief description of the hardware and software available at SPCS, a short tour of the computer center will be given.

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.

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.

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.

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.

Introduction to SAS/GRAPH

SAS/GRAPH is a graphics system (fully integrated with the rest of the SAS system) that includes procedures that produce pictures, utilities for enhancing pictures and a mechanism for storing and replaying pictures.

This demo will introduce the user to the capabilities of the SAS/GRAPH package for displaying data as 2-D or 3-D plots, charts (bar, block, pie, or star), tables, maps (U.S. and Canada), contour plots, and slide presentations.

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 for accessing the SPCS mainframe with a Macintosh. This demonstration will cover installation, execution and use.

PC SAS Overview

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

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.

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.

NOMAD2 Application Development

This short course teaches the steps necessary to set up a NOMAD2 application. Topics covered include problem definition; writing a schema; entering, maintaining, and retrieving data; writing procedures; and report writing.

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

For the PC SAS Overview class and the SAS/GRAPH class, either previous registration in a SAS class or permission of the instructor is required. 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).

Software:

SAS/AF Software

SAS/AF (SAS/Applications Facility) is now installed as part of the current version of SAS on the SPCS system. SAS/AF software, together with Base SAS software, is an application facility for creating a user friendly front end to interactive applications, such as customized training programs and online help facilities. SAS/AF also offers an easy-to-use computer based training (CBT) development facility. The software can be combined with other software in the SAS system for a complete information package.

With SAS/AF software you can build menu-driven systems for users having varying degrees of computer "expertise". Other features include: conditional execution of SAS statements; input data into macro variables; produce "animated" CBT displays; display graphics and text simultaneously; track answers to CBT multiple choice questions; and feedback branching.

Documentation:

SAS/AF User's Guide (Version 5).

Guide to SAS/AF Menus (Version 5). Technical Report P-141

Changes and Enhancements to SAS/AF Software (Version 5). Technical Report P-149

The following two articles are helpful references for developing SAS/AF applications. Both are from 1986 Proceedings of the SAS Users Group International, Eleventh Annual Conference, Atlanta, Georgia.

"New developments in SAS/AF software for course authoring", by John Boling, pp. 150-154.

"The role of the SAS MACRO facility in relation to (the) SAS/AF software", by Andrew J. L. Cary, pp. 564-567.

SCA Update

Scientific Computing Associates has published a document entitled Special Notes on the Use of SCA. If you are an SCA user, ask to see a copy or borrow one at the Help Desk (90 Coffey Hall).

Consulting Corner

Q. I am using PC SAS and when I try to save a permanent data set, I keep getting an error message that I am missing a LIBNAME statement. I don't understand; there is no LIBNAME statement on the mainframe version of SAS that I have used for years.

A. PC SAS has two new statements where on the mainframe version there is only one. In PC SAS, LIBNAME defines where a permanent data set resides (in what directory, or on what floppy disk drive). The first part of the permanent SAS data set name in PC SAS is referred to as the libref. You must issue a LIBNAME statement for each libref being read or being written. For example:

```
libname junk 'haldir';  
data junk.yld1986;
```

Tells PC SAS to create data set YLD1986 and store it in directory HALDIR. You can refer to a disk drive similarly.

```
libname max 'a';  
data max.growth;
```

The dataset GROWTH would be written on the A drive.

Note that there is a second statement to refer to raw data files in PC SAS. This statement is the FILENAME statement (alternatively, you can name the file - directory and all- on the INFILE statement). An example of the FILENAME statement is:

```
filename deck 'b.wood.dat';  
data constr;  
infile deck;  
input .....;
```

Q. When I used the YTERM command PCTTRANS to upload my SAS program file, I got an error when I tried to run it. Why?

A. All files that are uploaded with YTERM are left as RECFM (record format) V (variable). Many programming languages require that source or program files be 80 characters in width and have record format F (fixed). SAS is one of these languages. You can easily change the record length and record format of a file in two different ways. One way is to use the COPYFILE command as follows:

```
copyfile fn ft fm (lrecl 80 recfm f
```

Substitute the filename, filetype, and filemode of your file for fn, ft, and fm, respectively.

You may also change the width and record format within XEDIT. First XEDIT the file, then from the command line issue the following commands.

```
lrecl 80 <press ENTER>  
recfm f <press ENTER>
```

Then "file" the file to save the changes.

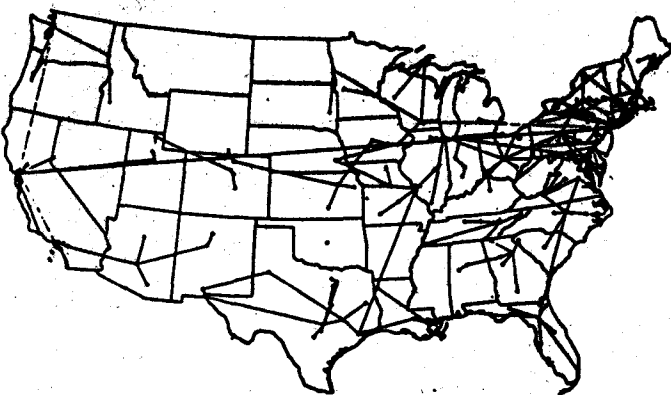
Q. I am using the C compiler and C is very strict about upper and lower case in program files. How do I set XEDIT to allow mixed case?

A. XEDIT your file and then issue the following command from the XEDIT command line:

```
set case mixed <press ENTER>
```

You can then enter upper or lower case characters and the case will be preserved. You must enter this command each time that you edit the file. If you do a lot of C programming, you may wish to copy the existing PROFILE XEDIT file from the X disk and tailor it to recognize the C filetype and always preserve the case. Ask at the Help Desk if you wish to do this.

SPCS Electronic Communication Quick Reference



U. S. BITNET Nodes as of July 1987

St. Paul Computing Services
October 1987

Quick Reference for using PROFS and BITNET on the IBM 4381 Mainframe

To use your microcomputer (IBM PC or Apple Macintosh) to communicate with the St. Paul Computing Services IBM mainframe and with other computer users, you need to do the following:

- **Connect to the IBM mainframe:** Follow the directions for your communications software to connect via a modem or ITE phone line.
- **Log on to your account on the mainframe:** Enter the LOGON command with your userid and enter your password.
- **Access the PROFS software:** If you belong to a special group, you will automatically be brought into the Main Menu for your group. Other users type

project-group

In the following panels we present only the basic commands for using the PROFS Main Menu system, including logging on and off, reading and sending mail, and accessing the bulletin boards. Connection to the mainframe via YTERM and a modem is also explained.

The PROFS Main Menu system also provides directory access, an online calculator, file transfer capability, and menu driven file management.

For more detailed instructions, please see the SPCS Electronic Communication User's Guide.

Dialing into the Mainframe and Logging On

There are many microcomputer software packages that will allow you to connect to the SPCS IBM mainframe over the phone lines. These packages must allow the microcomputer to emulate a full screen terminal. SPCS distributes the software packages YTERM (for IBM PC) and TinCan (for Apple Macintosh) for communication with the IBM mainframe. Both packages allow full screen emulation, uploading and downloading, and local printing.

The following instructions refer to configurations with STE telephones and autodial modems with IBM PCs using YTERM and COM 1. If you have an ITE telephone and a DOB, DIU, or ADI-100, refer to Appendix B of the SPCS Electronic Communication User's Guide. Dial in instructions for the Macintosh are also briefly described in the User's Guide, Appendix B.

1. Turn on your modem and microcomputer.
2. Place the YTERM diskette in drive A; close the drive door, and type

logonspc ste 1200 1 tone

If you have installed YTERM on your hard disk, it is not necessary to use the YTERM diskette.

3. You will hear the modem place the call and the phone ring at the other end. When the mainframe answers, you will hear a high pitched tone. When the connection is established, you will see the word *connected* on your screen, and the SPCS logo will appear.

4. Press the ENTER key to bring up the next screen.

5. Type

logon userid

Substitute your own userid. Press ENTER.

6. Type your password; press ENTER.

Logging Off

1. Exit from the PROFS Main Menu with PF12.

2. Type

logoff

Press ENTER.

YTERM Key Translation

| Control Functions | Keys |
|---------------------|----------------|
| Erase YTERM message | Ctrl Backspace |
| Keyboard unlock | Ctrl T |
| Master Reset | Ctrl G |
| Terminate YTERM T- | Ctrl Break |
| return to DOS | |

| Function | PC Keys |
|--------------|----------------------------|
| PF1 - PF10 | F1 - F10 |
| PF11 | Alt - or NamLock or F12 |
| PF12 | Alt - or ScrollLock or F12 |
| PA1 | Alt, |
| PA2 | Alt. |
| Clear Screen | keypad + or Home |

TinCan Key Translation

| Onscreen controls | Button |
|--------------------|--------|
| Toggle insert mode | Insert |
| Clear screen | Clear |
| Home | Home |
| Reset com error | Ctrl R |
| Reset terminal | Ctrl D |

| Function | Keys |
|-------------|----------|
| PF1 to PF10 | `1 to `0 |
| PF11 | ^- |
| PF12 | = |
| PA1 | ^. |
| PA2 | ^_ |

Reading Mail

If you have unopened electronic mail, you will see the words 'Mail Waiting' in the lower right corner of the Main Menu screen.

To see a list of your mail, press PF2.

To open an item from the list, press the PF key for that item.

Follow the instructions at the bottom of the screen to process the note further (e.g., print, erase, forward, or reply).

Sending Mail

To send mail to another user on the SPCS system, you need to know his or her userid (user identification). To send mail to a user on another mainframe, you must know his or her userid and nodeid (nodeid is the identification of that user's mainframe on the communication network).

1. To send mail, press PF3 from the Main Menu screen.

2. Specify the receiver: Type the userid at the Send To: prompt. For correspondents on BITNET, type nodeid(userid).
3. Use the TAB key to move to the From: line. Type your name.
4. Tab to the Subject: line. Type a subject of fewer than 45 characters, if you wish.
5. TAB to the blank line under Subject: and begin typing the text of your note. Press the TAB key to move to a new line.
6. Review and edit your note, using the editing PF keys listed at the bottom of the screen.
7. Press PF7 to send the note.

Bulletin Boards

You may access the SPCS bulletin board and bulletin boards for the groups that you belong to. You will be able to view entries on the bulletin board as well as send entries to be added to the board.

1. Press PF10 from the Main Menu. If you belong to one group, you will be brought directly into that bulletin board. If you belong to more than one group, you will see a menu of groups.
2. Pick the group bulletin board that you want to view.
3. Move the cursor to the bulletin board entry that you wish to view, type an x in the left most column and press ENTER.

You may post items to a bulletin board from the Bulletin Board Menu: move the cursor to a heading and press PF4. Most bulletin boards are managed by an official representing the group. Unless you are a manager, when you add an item to the bulletin board, it will be sent to the project manager and duly processed. Some bulletin boards allow open access (conferencing).

St. Paul Microcomputer Lab

Room B50 Central Library
Phone: 624 - 3269

The St. Paul Computing Services Microcomputer Lab is open to U of M students, staff and faculty. Access to the lab requires a Microcomputer Access Card, which is available at the St. Paul Bursar's office. The cost of the card is \$20.00 per quarter.

High quality printing is available to our users on the Apple LaserWriter Plus, HP LaserJet Plus, and HP ColorPro plotter. To use these printers, a Printer Access Card is required in addition to the Microcomputer Access Card. This card is also available at the St. Paul Bursar's office; it costs \$1.00 and is good for 10 pages.

The Microcomputer Lab is operated on a first-come, first-served basis. Each user is limited to 2 hours per session, with a 2 hour waiting period between sessions. (More time is allowed if there is no demand for the machines.)

System Configuration

12 IBM PCs with 640K memory, 1 IBM PC/AT. Each PC has 2 disk drives and a monochrome monitor. Some PCs have an 8087 Math Co-processor installed and/or Graphics capabilities. Printing is available on the Epson FX80 dot matrix printer or HP LaserJet Plus.

6 Macintosh (2 Plus, 4 512K Enhanced). Each Macintosh has an external disk drive. Printing is available on an Imagewriter dot matrix printer or LaserWriter Plus.

2 Apple IIe with 128K and 2 disk drives. Printing is available on an Imagewriter dot matrix printer.

Software (Available for in-lab use only)

| IBM | Type |
|--------------------------|----------------|
| Minitab | Statistical |
| Statistix | Statistical |
| GLIM | Statistical |
| WordStar | Word Processor |
| WordStar 2000 | Word Processor |
| WordPerfect | Word Processor |
| Lotus 123 Release 1A & 2 | Spreadsheet |
| dBase III | Database |
| Turbo Pascal | Programming |
| PC Paintbrush | Graphics |

Macintosh
MacWrite
Word
File
MacPaint
Chart
Multiplan
MacPascal
MS-BASIC
MacSpell+
MacTerminal
TinCan

Type
Word Processor
Word Processor
Database
Graphics
Graphics
Spreadsheet
Programming Language
Programming Language
Spelling Checker
Telecommunication
Telecommunication

Apple IIe Appleworks

Type
Word Processor,
Spreadsheet, Database
Graphics
Word Processor

MousePaint
MouseWrite

Lab Hours

Regular School

| | |
|------------|-------------------|
| Mon - Thur | 8:00 am- 8:00 pm |
| Fri | 8:00 am - 5:00 pm |
| Sat | CLOSED |
| Sun | 6:00 pm -10:00 pm |

Quarter Break

| | |
|-----------|-------------------|
| Mon - Fri | 9:00 am - 4:30 pm |
| Sat | CLOSED |
| Sun | CLOSED |

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).

Statistical Clinic

- 4.) Hard copy available from tape or cards
(depending upon card condition).

Jobs are done on a first-come, first-served basis. Turnaround time may vary with the workload. Output is available on cards, 800/1600/6250 bpi tape (which will run on an IBM, CYBER, or other mainframe computer), or on 3.5" or 5.25" diskette. Special arrangements can be made to purchase tapes, or they will be loaned out for a maximum of 60 days. Tapes not returned within that time will be charged to the account.

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.

Room: 125G COB
Phone: 625-3121

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 Fall are:

| | |
|-----------------|-----------------------|
| Mon., Wed., Fri | 9AM - 12PM, 2PM - 4PM |
| Tue., Thurs. | 9AM - 12PM |

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 Services
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