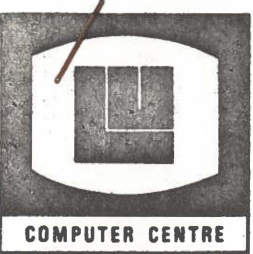


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LUCIFER

NEWSLETTER OF THE LAKEHEAD UNIVERSITY COMPUTER CENTRE

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WHAT CAN WE OFFER YOU?

A variety of services are provided by the computer centre for academic computer users. In particular Mr. Watson (MB1040, ext 383) and Mr. Davis (MB1039, ext 316) together constitute the Academic Computer Services group. They are available during the hours of 9:00 a.m. - 12:00 noon and 1:00 p.m. - 5:00 p.m. for consultation by anyone requiring information or assistance. At least one copy of an academic user's guide produced by this group is located in each department either with the secretary or one of the computer users in that department. This guide gives detailed information on all computer services available. This article constitutes a summary of that information.

Some of our users have acquired the knowledge to program the computer themselves, but many others use services which require no knowledge of the computer. Besides the consultation service, these include:

- 1) Computer marking of objective multiple choice tests.
- 2) Analysis of surveys - here the user should consult with academic computer services on the design of a survey before hand.
- 3) Statistical analysis of data - a wide variety of programs are available.
- 4) Production of maps and graphs.
- 5) Solution of a variety of numerical analysis problems.
- 6) Assistance with the use of specialized programs or systems a user himself acquires from another institution.
- 7) A program writing service in which specialized programs will be written or modified to solve a user problem or analyse his data.
- 8) Use of the APL Terminal system as a quick and easy replacement for tedious hand calculations.
- 9) Teaching courses provided from time to time if there is demand. However, a computer assisted instruction package is conveniently constantly available to teach the easily learned APL computer language

The user who wishes to program himself can also use the consulting service which includes:

- 1) Fully supported consulting service on the following languages:
 - (a) FORTRAN IV for:
 - i) WATFIV fast compiler
 - ii) IBM G and H compilers
 - (b) APL

- (c) 360 Assembler language for:
 - i) IBM F Assembler
 - ii) SPASM teaching system
 - (d) 360 Job Control Language
- 2) Fully supported consulting service on the following systems:
- (a) CSMP package for the solution of simulation problems and differential equations
 - (b) Scientific Subroutine package containing over 200 sub-routines for common numerical and statistical problems
 - (c) Graph Plotter Routines
 - (d) Statistical Packages
 - (e) A variety of APL packages
 - (f) Conversational Remote Job Entry
- 3) A partially supported consulting service (restriction imposed by manpower limitations) on the following languages:
- COBOL (WATBOL fast compiler)
 - PL/1 (PL/C fast compiler)
 - SNOBOL

In addition the experienced user may request special subroutines to be written for him, use the manuals, texts and journals kept in the computer centre library and take more advanced courses as offered by the computer centre.

However, with only 2 members of the Academic Computer Services group, all these services have to be offered on a first come first served basis.

The operations group is responsible for all equipment and processing. It offers the following services:

- 1) A keypunching service. Coding forms can be obtained from the head keypunch operator in room MB1047.
- 2) A processing service whereby jobs left at the control room window in room MB1047 may be collected when processed from the same place within 2-24 hours (except on weekends). The computer centre provides over 100 hours of this service each week.
- 3) A fast turn around service provided in room MB1049 whereby users may enter their own jobs and receive results within a short period of time. A student is on hand from September to March to assist new users. There are some restrictions on the types of jobs which can use this service.
- 4) Conversational Remote Job Entry from our terminal in room MB1049
- 5) 15 typewriter terminals in room MB1049 for use with the APL system

- 6) 3 dial up terminals (connected to the computer via an ordinary telephone) 2 of which are located in the Centennial Building and one is usually located in the computer centre area
- 7) Key punches and a card sorter in room MB1058 for individual use
- 8) A library for the storage of computer tapes
- 9) Other special services are available through the Control Supervisor in room MB1049A (e.g. bursting, decolating, interpreting, special control of computer input and output, mark sense input interpreting, etc.)

I can only conclude by suggesting that any potential user contact one of the Academic Computer Services group for advice as to how to begin.

THE 3rd ONTARIO UNIVERSITIES'

COMPUTING CONFERENCE

TORONTO, February 24th & 25th, 1972

The theme of the 3rd Ontario Universities' Computing Conference held on February 24th and 25th was "The Contribution of the Computer to the Educational Process". There was evidence of some very healthy contributions being made in Ontario, in specific Electrical Engineering, Business Administration, System Dynamics and Medical Science projects.

However, for those of us who had not seen it before, the most stimulating experience was probably watching a demonstration of the University of Illinois PLATO computer-assisted instruction system. The terminal used in this system was a technological breakthrough which has made computer-assisted instruction an economic proposition. With a new expanded system a figure of 50 cents per student hour is anticipated - including all hardware, processing and communications costs together with author royalties. After a twelve year history of credit courses taught by computer-assisted instruction at the University of Illinois very sophisticated teaching programs are now being produced.

At least three speakers stressed the educational advantages of interactive timesharing systems over batch processing. Trent University not only has no batch processing it also has no computer and purchases its timesharing facilities from commercial and university suppliers. There is presently much competition in the sale of timesharing services and they have been able to obtain economic computing. The university feels that it is small enough to carry out administration by hand and only use computer science as a tool rather than a discipline.

The Master of Business Administration program at York University is using the computer for simulations and games, calculations, prompting of group decisions, computer-assisted instruction and storage of data banks for students to manipulate and analyse. None of these techniques are novel, but the commitment to such a large and varied use in this type of program probably is.

The Department of Clinical Epidemiology and Biostatistics at McMaster University claims to have an information storage, retrieval and analysis system which is equally suitable to the non-mathematician and the experienced statistician. A data bank of data obtained over a period of twelve years, a special language and a variety of special purpose programs are the constituents of the system.

The conceptual advantages of a variable animated diagram have been demonstrated in a project in the Electrical Engineering Department at McMaster University. A screen display of voltage and current in a simulated transmission line significantly improved the understanding of weaker students.

The conference also included papers on System Dynamics, the use of APL in computer assisted learning, computer manipulation and illustration of surfaces, and library services. This last paper emphasized the phenomenal amount of data which would need to be stored for a national library information system, and the need for rationalization of the many current individual projects.

The closing speaker, Dr. J. G. Miller of the John Hopkins University School of Medicine was strongly critical of educators for resistance to the use of modern technology. He has recently been involved in projects in developing countries where this technology is welcomed. Through use of a device attached to a television set which can be produced in India for approximately \$200, Indians will soon be able to receive education television programs directly from the United States via satellite over the Pacific.

The problem of achieving academic excellence while finding some criteria for planning the distribution of decreasing resources was the subject of a panel discussion. Because of ignorance about the objectives of complex educational organization it was thought impossible to evaluate the trade-offs between competing objectives. In time academics would be expected to make value judgements so that administrators could plan and co-ordinate. Present computer modelling was considered unsatisfactory because models are not complex enough, because we are not sophisticated enough in the way we use them and because academics have not been convinced of their usefulness. However, the trap of concentrating on measurables and ignoring immeasurables should be avoided. Information from computer modelling should act as a catalyst for the asking of questions about different possibilities.

Now that computers have to justify their existence there is a trend towards good public relations in computer centres. The emphasis upon providing users with a good service was demonstrated at a special interest meeting on the objectives and values of computer training. There was a good deal of self criticism for the lack of readable documentation and pertinent non jargon information being provided for the user. There is a healthy sign that computer centres want to make friends.

GOOD PRACTICES IN HANDLING CARD DECKS

A. CARD DECK HANDLING:

1. If the size of your deck permits, draw a diagonal line with a felt-tip marker from corner to corner across the top of the cards.
2. The final card of any complete deck should be an orange 'last card', which is available in the keypunch room where the deck is submitted. This aids the machine room operator immensely in separating decks which are read through the card reader one after another.
3. On Multiple Boxes:
 - a) Print your name and the Jobname on each box, both top and front.
 - b) Clearly indicate the order of a series, e.g. 1 of 3, 2 of 3, 3 of 3, etc.
 - c) On partially filled boxes, put a rubber band around the last handfull of cards. This keeps the cards from sliding out of order.
4. Don't put the rubber band on too tight around any card deck. This nicks and warps the deck, which then may not feed through the card reader. You should especially check the first and last cards of your deck as they usually get the most wear and tear.
5. Periodically check the bottom edge of the deck, particularly at the beginning and end. Nicks, bends and frayed cards will all cause poor feeding or card jams.
6. Watch the humidity and your coffee cup. Nothing ruins a deck faster than spilt liquids. Humidity is slower, but the result is the same. The deck will warp and become unreadable.

B. BACK-UP:

1. If the deck is important, or difficult to replace, make a copy as a backup--accidents do happen.

2. If your deck is going to be read through the reader several times, it will become frayed and worn, and will be replaced with a new deck at some point. Make a copy as a back-up.
3. In addition, consider compiling and storing your program as a load module on disk. Use of disk for good checked out programs or data is faster and better to work with for you and the operating staff. Backup for large card decks is often kept on tape in a humidity and temperature controlled Computer Centre Tape Library.

C. MISCELLANEOUS:

1. Certain coloured cards are reserved for the following purposes:
 - a) JCL CARDS - PINK
 - b) PROGRAM - NATURAL
 - c) LAST CARD - ORANGE
2. Identify changes on cards by marking the top edge of the changed card with a felt-tip marked.
3. To help you estimate the number of cards, there are approximately 140 cards per inch.
4. Card decks should be stored in adjustable trays without rubber bands around them, or as an alternative they could be tightly packed in card boxes and stored face down. Proper storage will prevent warping and damage. You might consider storing large card decks on tape in the humidity and temperature controlled Computer Centre Tape Library.
5. If you are using an 'Operations Request Card', it should also be replaced when it becomes worn. This card remains at the beginning of your deck, when being read through the card reader.

LANGUAGES MOST OFTEN USED IN JANUARY & FEBRUARY & MARCH

<u>RANK</u>	<u>LANGUAGE</u>	<u>NO. OF TIMES USED</u>	<u>PRIMARY USER</u>
1.	APL	10,196	Students
2.	WATFIV (FORTRAN)	6,494	Students
3.	PLC (PL/1)	1,422	Students
4.	PL/1	1,138	Administration
5.	MARKIV	827	Administration
6.	FORTRAN	722	Faculty
7.	Assembler	641	Computer Centre
8.	SPASM (Assembler)	467	Students

LIBRARY PROGRAMS MOST OFTEN USED IN JANUARY & FEBRUARY & MARCH

<u>RANK</u>	<u>PROGRAM</u>	<u>NO. OF TIMES USED</u>	<u>PRIMARY USER</u>
1.	DEJCSMP2 (CSMP)	232	Engineering Dept.
2.	SYMAPV5 (SYMAP)	213	Geography Dept.
3.	PLOT00L (GRAPH PLOT)	127	Geography Dept.
4.	ASECT0 (APT)	99	Engineering Dept.
5.	RCHINT	99	Chemistry Dept.
6.	RCHSPECE	91	Chemistry Dept.
7.	MPANOVA	87	Psychology Dept.
8.	TEST01	77	Faculty of Education

CURRENT PRODUCTION STATISTICS

USER TYPE	JAN, FEB, MAR, 1971	JAN, FEB, MAR, 1972	% CHANGE
UNIV BATCH JOBS	13283	13230	- 0.4%
UNIV TERMINAL SESSIONS	12214 (est.)	10225	- 16.3%
OTHER BATCH AND TERMINAL USAGE	1712	1672	- 2.3%
TOTAL	27209	25108	- 7.7%

YEAR-TO-DATE PRODUCTION STATISTICS

USER TYPE	1970/71	1971/72	% CHANGE
UNIV BATCH JOBS	33443	46974	+ 40.5%
UNIV TERMINAL SESSIONS	25735 (est.)	30320 (est.)	+ 17.8%
OTHER BATCH AND TERMINAL USAGE	2859	3518	+ 23.1%
TOTAL	62037	80812	+ 30.3%

MAJOR ACADEMIC COMPUTER USERS

(July, 1971 to April 1, 1972)

<u>Faculty and Research</u>	<u>Students</u>
1. Engineering	1. Mathematics
2. Geography	2. Business
3. Mathematics	3. Forestry
4. Business	4. Geography
5. Chemistry	5. Psychology
6. Anthropology/Sociology	6. Chemistry
7. Psychology	7. Engineering
8. Geology	8. Economics
9. Physics	9. Faculty of Education
10. Economics	10. Faculty of Education

Notes From Operations

Turnaround: Average turnaround for a faculty, research or student job submitted to Room MB1047 for batch processing was 1 hour and 47 minutes in March.

Equipment: The IBM 1443 printer in Room MB1049 will be replaced by another 1443 in May in the hope of improving the reliability of the monitor printer.

System
Reliability: There were only 5 system crashes during the month of MARCH which affected APL and Monitor users. One of these was caused by a power failure. Two of these problems have not yet been fixed - a software, O/S problem and a hardware, CPU problem. APL was available 99% and the monitor 97.7% of the time they were scheduled to be available during this month.