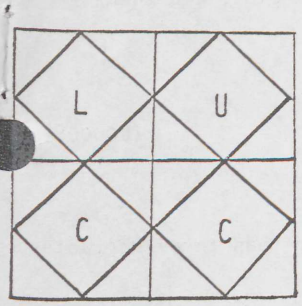
3-11-1977

User Services External Report

Lehigh University



USER SERVICES EXTERNAL REPORT

LEHIGH UNIVERSITY COMPUTING CENTER

CDC 6400 (CM65K, ECS125K, SCOPE 3.4.4), VARIAN 620/f

Vol. IV, No. 4

March 11, 1977

LONG TERM COMPUTER PLANS

At its January board meeting, the trustees approved a new five year budget for the Computing Center. Expenditures are budgeted to increase at a slightly lower rate than is expected for the University. Technological advances will permit a continued growth in services well in excess of expenditures.

Final activity to select and acquire expanded computing capacity will proceed rapidly now that budgetary approval has been obtained. A faculty committee currently is reviewing bid specifications, the first stage in the formal selection process. Plans call for the installation of a second computer in the Fall, with full services scheduled for the spring semester of 1978. The CDC 6400 will remain until approximately 1982 providing (essentially) batch processing services. Interactive processing will be supported primarily by the new system.

FROM THE LIBRARIAN

New Programs

- PFMGR, PFMCCP - Small Permanent File Software (J90049,J90050)

  The program PFMGR establishes and controls the master permanent file. Control parameters set by the user include the following:

  Maximum size of the master file
  Maximum size of a subfile
  Maximum retention period for a subfile
  Default retention period for a subfile
  Access and other permission levels
  Threshold level at which master file will be compressed

  This program also processes the CATLIST command which lists the names of the files contained in the master file or the names of the files with a given ID.

  The program PFMCCP processes the user commands for cataloging (CAT), attaching (ATT), purging (PUR), replacing (RPL) and renaming (REN) a subfile. The subfiles may be protected with read (RD) and control (XR) passwords. The subfiles are restricted to only one cycle. Experience with student use has shown that when subfiles are restricted in size to a maximum of 28 physical record units (PRU's), three to six subfiles can be stored in one record block (56 PRU's) of disk space.

- LINEAR - Linear Control Theory (T40010)

  This program solves computation problems associated with the study and application of linear control theory.

- APES - (Axisymmetric/Planer Elastic Structures) (T40011)

  APES is a finite element program which incorporates a 12-noded quadrilateral isoparametric element having a bicubic displacement assumption and adapted to plane strain, plane stress and axisymmetric conditions of structural behavior. This program was developed at the Naval Ship Research and Development Center.

- ELEMAN, ELEMANC, SECULAR - Interactive Chemistry Routines (T20001,T20002,T20003)

  The program ELEMAN may be used to determine the possible formulae for a compound whose elemental analysis does not give the expected percentage data.

  The program ELEMANC prints the molecular weight and the percentages for each element in the compound after being given the molecular formula of a compound.

The program SECULAR accepts up to a 7X7 secular determinant and prepares a TSP or CALCOMP plot, and then permits revision of the graph for estimates of X.

Modified Programs

- SPSS - Statistical Package for the Social Sciences (G00006)

  The following problems were corrected in the indicated SPSS procedures:

  COMPUTE,IF,COUNT,RECODE - it is now possible to do more than 5000 transformations

  CONDESCRIPTIVE - central memory space is now allocated properly, and Z-scores for fewer than three variables are now correct

  FREQUENCIES - central memory space is now allocated properly

  MANOVA - the residual sum of squares matrix is now initialized with matrix input

  CROSSTABS (INTEGER) - partial gammas are computed correctly for tables involving the second through nth variable

  CROSSTABS (GENERAL) - the mode 2 error occuring if STATISTICS 4 or 5 was requested has been eliminated, and missing values are now excluded from the table when desired.

- MPOS - Multipurpose Optimization System (H10004)

  Version 3 of MPOS was installed on January 31. Two new algorithms were made available, and several existing ones were improved. Two new language features were added, and numeric values in constraints and objective functions now use the ↑ character (11-8-5 punch) to initiate the exponent field.

- SENATOR - Interactive Text Editor (J90045)

  Release 22 of SENATOR 2.0 was installed on March 7, 1977. The following is a summary of the most important changes.

  - DUP and FORMAT commands have been added. DUP allows a range of lines to be copied to one or more locations within the file. FORMAT permits all or part of the current file to be reformatted in one of several ways. Options include trimming lines to a given length, generating UPDATE directives from a compile file and reformatting lines according to the current system.
  - To minimize confusion between the READY and EDIT DELETE commands, the EDIT DELETE command has been changed to ERASE.
  - Line-numbered input in EDIT is now reformatted as is done in READY mode.
  - Many problems have been corrected; in particular, nearly all reported problems with EDIT have been fixed.
  - The RUN, COMPILE, and EXECUTE command options for the various systems have been extended. System PASCAL has been modified to use the new compiler options; systems PASCAL and PA2 are now identical. Also the RUN command is now operational under systems LISP and WIZARD.

  See SYSBULL,SENATOR for further details.

Soon to be Available

... QIKPLT (Quick Plotting Routine) Modified (J50006)

Numerous internal changes have been made in the version of QIKPLT which will be installed on March 14, 1977. These changes include providing more extensive data and syntax error checking and reporting, decreasing the number of plotter function units generated by approximately seven percent, and reducing the amount of central memory space occupied by QIKPLT. The calling sequence for QIKPLT has been simplified such that titles for the plot, the X and the Y axes are no longer required. CALL QIKPLT(X,Y,100) is an example of the new format.

... QIKSAX (Control Plotting of Axes) (J50011)

QIKSAX is a new plotting subroutine to be used in conjunction with QIKPLT. It permits the user to specify whether the X and Y axes are to be drawn, and whether the axes will have annotated values. If the regular annotated axes generated by QIKPLT are omitted by using QIKSAX, plotter function units can be reduced by about forty percent.

USER DOCUMENTATION

SENATOR Users Guide

The SENATOR Users Guide is now available through the University Bookstore. This users guide goes into more detail than the SENATOR section of the Introductory INTERCOM Users Guide, but it covers less material than

that contained in the SENATOR Reference Manual. Numerous examples are included in this newest user guide.

CALCOMP Plotter Routines

The Plotter manual was slightly revised and reprinted.

Reminder

Remember, the command SYSBULL,DOCMNTS will produce a list of available Computing Center manuals and Technical Bulletins.

USAGE STATISTICS		December		January		February
Total Batch Jobs Processed		37,118		20,065		48,237
Central Site		25,969		14,238		30,098
Taylor Hall Site		6,366		1,159		12,922
Other Sources		4,783		4,668		5,217
Maximum Batch Jobs Processed in one day	(12/8)	3,959	(1/31)	1,733	(2/21)	3,420
Total INTERCOM Terminal Sessions		10,420		8,431		13,725
Maximum Terminal Sessions in one day	(12/9)	784	(1/31)	570	(2/22)	864
Total CP Hours Utilized		175.64		141.72		183.81
Batch CP Hours		140.65		114.06		147.74
INTERCOM CP Hours		34.99		27.66		36.07
Maximum CP Hours Utilized in one day	(12/8)	11.8	(1/13)	7.9	(2/17)	12.8
OPERATIONAL STATISTICS						
Time System Available during Scheduled Hours (Percentage)						
Batch		99.5		98.5		98.7
INTERCOM		98.8		98.4		98.1
Mean-Time Between Failures (Hours)						
Batch		322.7		73.4		83.7
INTERCOM		30.9		46.9		17.8

SOFTWARE USAGE STATISTICS - FALL 1976 SEMESTER

Major Compilers	
BASIC	16,363
COBOL	4,853
FTN (FORTRAN Extended)	24,544
PASCAL	13,186
PASCAL2	1,764
RUN (FORTRAN IV)	24,620
RUNT (Student FORTRAN)	108,171
Major Applications Packages	
BMD's	563
IMSL (Math/Stat. Subroutines)	4,500
INTSIMP (Interactive Simplex Method)	524
ISIS (Interactive Statistics)	224
LEAPS (Lehigh's Stat-Pak)	2,926
PVIRR (Interactive Present Value Internal Rate of Return)	623
SPSS (Maxi and Mini Versions)	2,770
STRESS (Structure Analysis)	624