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UNIVERSITY OF QUEENSLAND

Prentice Computer Centre

NEWSLETTER

authorization: Director of the Centre

1 CONTENTS OF THIS ISSUE

2 SYSTEM SECURITY

There exists a feeling by some that the tales associated with people who use a computer in an unauthorized way are somewhat amusing. Such users tend to be placed in a special status as brilliant people able to take advantage of a cold and impersonal computer. Let us be very clear that people are the victims of computer abuse and not the computer. Those who use the computer improperly are disadvantaging other users. They are breaking the statutes of this University and in some cases may be breaking the criminal law.

Perhaps some examples may bring to attention the serious nature of computer malpractice. Not so long ago at a University in U.S.A. the tapes associated with a $500,000 research project were all erased and, because proper backup did not exist, the project was wiped out.

A few weeks ago at an Australian University, two students obtained access to all users projects and passwords. At the University of Queensland there have been a number of recent cases of unauthorized use. Some users have attempted to crash or 'hang' the system. One large user group had their account file erased. In another case, students avoided accounting control to obtain computer time beyond cost limits. There have been cases where unauthorized use has been made of projects and where files of information have been taken without the owner's authorization.

The problem of computer security must be tackled in a positive way but it is doubtful if we will ever close the gap completely. What is required is user education to be aware of and take advantage of the built-in security procedures which are provided; a greater accent upon professionalism and ethics in the courses which are educating our computer scientists; and a clear knowledge that offenders will be punished.

Most people use the computer responsibly but there are some who diligently cruise through the system ready to take advantage of any system flaw or lack of protection of files or projects on the part of users.

We will take action to inhibit this type of user but there must be a doubt that we will ever eliminate them. Thus, there is a major responsibility on the part of users to make sure that they take advantage of the in-built security features. The major features are summarised below but, if you have particularly sensitive data, you are advised to discuss your needs with the Director:

(i) Project/Programmer Numbers. There could be situations where it may be suitable for a small number of users to share the same project/programmer number but if security is a problem, you should obtain a unique project/programmer number.

(ii) The password is a six character code word which should be known only to the user. Do not use expected codes such as your initials. Change your password frequently and guard the knowledge of it from others. Beware of help by a smart computer user who may be watching over your shoulder while you login or even help you login. Two cases of unauthorized use of others projects came about by such strategies.

(iii) File protection codes allow a user to define the level of security he requires on individual files. You should be aware, however, that there are certain functions which you may use that will alter the protection code. For example, although EDITOR and TECO do preserve protection, currently

any PIP function (e.g. COPY or RENAME) will reset the protection to the system default. This will be corrected in the not too distant future. Protection Codes are detailed in MNT-2.

(iv) File Backup. The public area files are copied on an overnight basis but the Centre does not provide a guaranteed backup service. It is usually sufficient, but if you have very critical data which cannot be replaced except at great cost, you should make special arrangements for backup under your control. It should be noted that files on private structures are only backed up when specific arrangements for such backup are made with the Computer Centre.

The use of encryption techniques has been suggested. It is an expensive process at the moment as it must be done by software. Hardware encryption has only recently become a financially attractive proposition but it is still in the developmental stage. The current situation is that encryption of users files is not allowed as it inhibits our own surveillance of the system. There may, however, be some special cases for which particular approval may be given.

The aim has been to bring to your attention the problem of security and the fact that, in recent times, there has been a sufficient increase in malicious use of the system for it to be proper for us to alert our users. It is a shame that, under our present situation of scarce resources, the Centre must put more time and money into protecting the integrity of our system. Such time would be better spent improving other facilities for our users. The very clear message, for persons who use the system in an unauthorized way, is that we are no longer tolerant, that the chances of being caught are higher and that the consequences for offenders will be severe.

The cost of computer abuse is not absorbed by the Computer Centre but by the user community. We request the co-operation of all users to take proper care to protect their projects and files and to report immediately cases of suspected improper use to the Computer Centre.

Alan W. Coulter, Director

3 STUDENT ACCOUNTING

The Computer Centre is introducing a new Student Accounting System which will supersede the existing system entirely and will come into effect at the beginning of second semester 1977.

The new system provides facilities for administration and control of student and similar groups engaged in computing assignments etc.

The system provides for the creation and update of a Control file for each student group and the subsequent reporting upon its contents. The control file normally resides in the '100' area within a Project and controls the expenditure of students logged into any number of areas within the Project.

A principal difference from the existing system is that exercises are controlled by total money available to the individual rather than on the number of runs per exercise or maximum cost per exercise. However, statistics on the number of runs and the cost per exercise are kept.

A skeleton Control file will normally be created by a program STUMAK run by the Computer Centre and using as data student names, programmer numbers, passwords etc., derived from forms designed for the purpose and available from Mrs. Carol Walker at the Hawken Batch Station.

The Control file may then be updated interactively by Supervisors or the Club using the program STUPID to set up exercise parameters, change expenditure limits and so on. The cost-to-date fields in the file will be updated by the Centre's overnight accounting runs.

LOGIN has been amended to deal with the new Control file. Expenditure limits and passwords contained in the Control file are checked; students are required to quote an Exercise Name and Club members to quote an Identification Code. Individual passwords may be changed using the program STUPAW in the same manner as for the normal system password.

Program STUDMP will print the whole contents of the Control file in an orderly fashion.

People who currently use the Group or Detail accounting facilities will not be affected in any way by the new system.

Further detailed documentation on the new system will be available from Mrs. Walker and Mr. John Barker on extension 6288 is happy to discuss any aspects with prospective users.

4 GAMES

Game playing on the computer can become a problem, particularly when resources are scarce. Terminals, job slots and file storage are tied up. It is recognized that games can have a useful role in

teaching. Given our present computing demands with limited resources, it has been decided as a temporary move that no game playing, except as specifically approved, will be allowed on the computer during the remainder of 1977. No copies of games programs are to be stored on user areas unless approved.

When new computing equipment becomes available from first semester next year, it is proposed to relax the ban on games. The situation then will be that all games will be stored in a public area and be accessible to all but will be available for use only during lightly loaded periods (e.g. after 8 p.m.).

If you wish to have your game preserved as part of the central pool, please contact Chris de Voil at the Centre.

Academic Supervisors wishing to maintain games on their own area for student use should contact the Director.

Unfortunately, having been forced to make this decision, we must police it. Any user making unauthorized use of the system for game playing will be denied access to the system for a period.

5 MBASIC

MBASIC has been obtained by Dr. Y. Sokal of Civil Engineering from JPL at CALTECH while on study leave and is provided for evaluation:

```
.R PUB:MBASIC
```

One copy of the full manual is held by Mr. R. Nilsson of Civil Engineering (6344) and an interested user could obtain an APECO copy of the MBASIC DEC10 reference card from him. He is also preparing an MBASIC.DOC file.

MBASIC is almost a superset of our current BASIC, the only commands that have so far been detected as different are OLD (use LOAD), NEW (none) and REPLACE (use SAVE). The MAT operator is unnecessary.

Some of MBASIC's features are:

(a) Up to 6 character names for scalars, arrays and string variables.

(b) More advanced functions especially in string manipulation.

(c) Syntax checking at creation rather than RUN time.

(d) Desk calculator mode where unnumbered statements are executed immediately on entry.

(e) Most statements modifiable by WHERE, IF, UNLESS, FOR and WHILE.

(f) Multiple assignments on a line.

(g) An exchange (==) operator.

(h) Full line editing "similar" to TECO.

(i) Full I/O formatting capability.

(j) Automatic creation of line numbers in ENTER mode.

An example of its power is the single statement for a simple sort:

```
A(I+1)==A(I) IF A(I)>A(I+1) FOR I=1 TO N-K FOR K=1 TO N
```

Some other examples are:

```
GOSUB 1000 FOR ARG=1,2,3,4 BY 2 TO 12,-5,-3
READ X(I),Y(I) FOR I=10 BY -1 WHILE X(I)>0
PRINT X,X*EXP(-2*X) FOR X=0 BY 2 TO 10
A(I)=B(I,2),C(I)==D(3,1) FOR I=1 TO 10
GO TO ROUND(100*5+X) IF X#50
IF I>50 THEN GO TO 100 ELSE GO TO 100+X
GO TO 400 WHERE FUND=0,I=I+1 UNLESS C(I)>0
IF ANS='YES' THEN INPUT A(I) FOR I=1 TO N
   ELSE IF ANS='NO' THEN PRINT 'END'
   ELSE GO TO 100 WHERE J=J+1
IF INDEX<100 THEN GO TO 700
   ELSE PAUSE 'INDEX OUT OF RANGE'
```

Although MBASIC is available on the PDP-10, it is not at this stage supported by the Centre by way of documentation, maintenance or consulting. All enquiries should be directed to Mr. R. Nilsson, Department of Civil Engineering.

6 PROGRAM LIBRARY

The program library pack PGLA has been replaced by a reorganized library on structure DECU. A catalogue will be available for perusal from the program librarian. All requests for files from the library should be arranged through the program librarian.

The new distribution Decus library has undergone substantial review and the quality has benefited from this. As time permits, we will be examining all material in it and will report to users on programs which may be of use.

7 FOROTS V4B

Forots V4B which has been on NEW: for a substantial period will be transferred to STD: and 4A transferred to OLD: on 11 July 1977.

This new version contains a number of error patches and as far as we can ascertain should give the same results as the previous version for proper usage. It should not be necessary to recompile any existing programs.

8 9-TRACK MAGNETIC TAPE - 600 FT. REELS

The Centre cannot, at this stage, provide a service for 600 ft. 9-track tape reels. There are inherent problems associated with the self loading mechanism of the 9-track tape drives. Two new 9-track tapes (manually loaded) will be available on the system in January 1978 and this should overcome the problem. The difference in price between a 1200 ft. reel and a 600 ft. reel is 90¢.

9 COBOL V10

Cobol V10 (on NEW:) has the capability of creating or accepting EBCDIC tapes. Any intending users should be aware that in two instances, non-standard character equivalents are assumed, viz:

Character	[	]
DEC-10 Cobol (Hex)	EØ	DØ
Standard EBCDIC (Hex)	AD	BD

10 MOTOROLA CROSS ASSEMBLER M68XAS

This item of software does not operate correctly under batch. Until it is possible to correct it, save yourself money by not operating it under batch!

11 BETTER LATE THAN NEVER!

The new release of the Mount/File system described in March 1976 has finally been made! We apologise for the delay which was brought on by the need to devote effort to more essential tasks. The new version should be compatible with the old and no problems should be encountered in its use.

12 NEW VERSION OF PASCAL

The original version of PASCAL has been moved to OLD and a substantially changed version placed on SYS.

This new version is reentrant and accepts command strings of the forms:

1) <object>,<list> = <source list>

2) <object> = <source list>

3) <source list>

<source list> is a list of one or more source filenames separated by commas

<list> is the listing filename

<object> is the name given to both the LOW and SHR files and if omitted defaults to the last name in the source list.

Each filename is of the usual form:

dev:name.ext[ppn](S1S2...)

dev defaults to DSK
ext defaults to LOW and SHR, LST, or PAS
ppn defaults to the user's
S1S2... are processor switches taken from the following list:

E suppress compilation Error reporting on TTY
H Write Header on first page of listing
In Format listing by Indenting n spaces for each level (If n is omitted, 4 is assumed)
L List macro code generated
M Input is from Mark sense cards
N Perform No runtime checks
O Lock Options, i.e. switches specified are applied to remaining files in the command string
Rn Limit the number of program statements executed to n (If n is omitted, 10000 is assumed)
T The program uses TTY.

All standard symbols except { and } are recognized.

All standard procedures have been implemented. However, PACK and UNPACK are implemented in a non-standard manner.

Core size should not be specified with the RUN command as core is now dynamically allocated.

Run-time checks, if used, are more extensive and run-time error reporting now gives program line number and following input file text at failure.

The ASCII characters greater than octal 137 (i.e. the lower case letters etc.) may now be read and written by PASCAL programs but will be ignored by the compiler if used in writing programs.

PASCAL may be invoked through COMPIL; however, [redacted] PASCAL will still print an *, to which the user must respond by typing a carriage return.

This version of PASCAL (on SYS) has some known bugs which have been fixed in a version on NEW:.

13 A NEW VERSION OF COMPIL

On 11 July 1977 a new version of Compil will be installed on STD:. This is primarily a maintenance release but users should be aware that the handling of 'sticky' devices has now been made to conform with the procedures used in other 'cusps'.

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