PRENTICE COMPUTER CENTRE
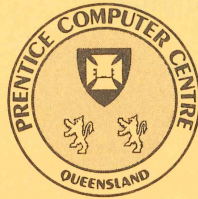
UNIVERSITY OF QUEENSLAND, ST. LUCIA, QUEENSLAND, AUSTRALIA. 4067.

NEWSLETTER

N-302   July 1985

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Authorized by the Director of the Computer Centre

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Terminals, CDN & Equipment Pricing

For prices on microcomputers, terminals, line charges, computer bits and pieces, type HELP PRICES on your terminal. This will provide appropriate menus.

1. Newsletter Summary

- We are not staffed to provide output to users immediately after they disappear off the system queues. There is a minimum delay of half an hour.

- Electronic engineers will be interested to note that the general purpose circuit simulation program, SPICE2, is available on the VAX 11/780.

- Notification is provided of outstanding errors on the NAG (Numerical Algorithms) package.

- A new command "REQUIRE" has been added to RUNOFF Version 12. It allows you to imbed a file of text and RUNOFF commands into another file being processed by RUNOFF.

- Brian Lucas of the Department of Physics has adapted MITHRIL, a program for the automatic solution of crystal structures, to run on the IBM 3083E.

- Information is provided on the Apple Tertiary Buy Program which enables staff and students to purchase Apple personal computers at University prices. Application for sales tax exemption should be made to the Australian Taxation Office.

- Advice has been received that a version of NAG (MLP) — a statistical package for handling a large number of non-linear estimation problems — will be available for the PDP11 (RSX-11).

- The Stanford University Macintosh C cross-compiler is now available running under Eunice on the VAX 11/780.

- The University is now registered as a minor service provider on VIATEL, Telecom Australia's national videotex service.

- A new CSIRONET gateway has been established using the VAX. To meet CSIRO operational requirements the current CSIRONET gateway is unlikely to continue beyond November 1985.

- A warning is provided that use of QEDIT on a 1022 data file will result in the loss of the file.

- Notification is provided of courses available to staff and postgraduate students. New courses include Introduction to IBM, SQL and Using a PC on the Network.

- A couple of equipment items are for sale by Departments.

Director
extension 2189

2. Central Computing Facilities — Allan Woodland, ext. 4017

Operations — Sandra Campbell, ext. 3471

Systems Software & Extensions — Ian Burgess, ext. 4074

2.1 Collection of Output

We would like to remind users that there is a minimum delay of half an hour for printer and plotter outputs to reach users' boxes, after they disappear off the system

queues. This is because the operators have four printers, three plotters, the typesetter/developer and client enquiries to attend to. We thank you for your understanding and co-operation.

Ellen Jenkins
extension 3025

2.2 SPICE on the VAX

A new Decus program, SPICE2, has been installed on the VAX, as SPICE. It is a general-purpose circuit simulation program for nonlinear dc, nonlinear transient and linear ac analyses. Circuits may contain resistors, capicators, inductors, mutual inductors, independent voltage and current sources, four types of dependent sources, transmission lines and the most common semiconductor devices: diodes, BJTS, JFETS and MOSFETS. SPICE has built-in models for the semiconductor devices and the user need specify only the pertinent model parameter values.

Online documentation is available in the file SPICE.MAN on SYS$LIBRARY. SPICE will prompt for an input file and users should consult the online documentation for the format of the input file. To access the program, type SPICE.

Any enquiries regarding SPICE should be directed initially to the HELP desk on extension 3025.

Lee MacDonald
extension 3943

2.3 Outstanding NAG Errors

The following errors apply to the NAG libraries on the KL and VAX .

Primary Routine Name	Description of Error
A02AAF F02AJF F02AKF F02ANF F02ARF F02BDF F02GJF	division by zero may occur in A02AAF as a result of underflow when computing the square root of a purely imaginary number close to the underflow threshold; also overflow may occur in A02AAF when computing the square root of a purely real number close to the overflow threshold.
C05NBF C05NCF	may fail with division by zero, usually as a result of underflow, if the solution to the problem is at zero.
C05PBF C05PCF	may fail with division by zero, usually as a result of underflow, if the solution to the problem is at zero.
D01FCF	(BEWARE!) may return a negative value for the parameter ACC, accompanied by an incorrect value for the integral in the parameter FINVAL. The error is not likely to occur unless the integrand takes large positive and negative values over different parts of the region of integration.
E04MBF	(BEWARE!) for problems with $0 < NCLIN < N$, the routine may return incorrect results, or an incorrect error exit, or alternatively it may fail during execution with some system-specific error. The problem arises because insufficient

workspace is allocated internally by E04MBF.

N.B. a correction must be made to the specification of the parameter LWORK in the routine document: when $0 <$ NCLIN $< N$, LWORK must be at least $2*(NCLIN + 1)**2 + 4*NCLIN + 6*N + NROWA$, otherwise the corrected routine will exit with IFAIL = 5.

E04NAF (BEWARE!) for problems with LP = .TRUE. and $0 <$ NCLIN $< N$, the routine may return incorrect results, or an incorrect error exit, or alternatively it may fail during execution with some system-specific error. The problem arises because insufficient workspace is allocated internally by E04NAF.

N.B. a correction must be made to the specification of the parameter LWORK int he routine document: when $0 <$ NCLIN $< N$, LWORK must be at least $2*(NCLIN + 1)**2 + 5*N + 3*NCLIN + NROWA$, otherwise the corrected routine will exit with IFAIL = 9.

H01ADF may perform one more iteration than is specified by the parameter MAXIT.

Any problems concerning any of the above routines can be directed initially to the HELP desk on extension 3025.

Lee MacDonald
extension 3943

2.4 New Command in RUNOFF

The ".REQUIRE" command available in DEC standard RUNOFF (DSR, held on PUB:) has now been added to RUNOFF version 12 (held on SYS:).

This command allows you to take a file of text and RUNOFF commands and insert it into another file being processed by RUNOFF (similar to INCLUDE for all you FORTRAN programmers).

The full command is:

.REQUIRE "file specification"

Upon encountering a REQUIRE command RUNOFF begins taking its input from the file specified. When the end of that file is reached, RUNOFF returns and continues taking input from the first file.

REQUIRE may be abbreviated to REQ and single quotes may be used instead of double quotes.

A full TOPS-10 file specification may be given with the exception that wildcarding and switches are disallowed.

Unlike DSR, no nesting of REQUIRE commands is allowed in this implementation, i.e. you can't have a REQUIRE command in a file that has been REQUIRE'd.

Barry Costin
extension 3022

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2.5 MITHRIL

— A computer program for the automatic solution of crystal structures from X-ray diffraction data.

MITHRIL is a new direct-methods computer program that has been obtained for use under licence at the University of Queensland, by the Department of Physics. It offers automatic (in principle!!) crystal structure solution from a three-dimensional set of single crystal X-ray diffraction data (for details, see J. Appl. Cryst. (1984). *17*, 42-46: available in Chemistry Department Library). The program has been adapted to run on the Centre's IBM 3083E.

Any University member interested in using this program should contact Brian Lucas, Department of Physics, on 377 3421 for further information.

Brian Lucas
extension 3421

3. Distributed Computing — Geoffrey Dengate, ext. 3391

3.1 Apple Tertiary Buy Program

The University of Queensland has joined the Apple Tertiary Buy Program for the supply of Apple Macintosh systems to the University of Queensland and Griffith University and staff and students of those institutions.

All official University orders must be placed through the Prentice Computer Centre and any queries on behalf of the Universities should be directed to me on extension 3391.

Private purchases made by staff and students should be placed on The Byte Shop, the selected and authorised Apple dealer to implement the program. Staff and students are required to complete and sign a Conditions of Sale declaration which must also be counter signed by the appropriate Head of Department. Further information on prices and configurations for private purchases should be directed to The Byte Shop, Shop 3, 207 Moggill Road, Taringa, phone (07)371-0711.

Any applications for sales exemption should be directed to the Australian Taxation Office.

Geoffrey Dengate
extension 3391

3.2 MLP for Your PDP-11

Numerical Algorithms Group have advised us that Bernard Ellem of CSIRO is preparing a PDP-11 (RSX-11) version of MLP — the Maximum Likelihood Program. MLP is a statistical program for handling a large number of non-linear estimation problems. It is particularly useful for curve fitting growth curves and response curves.

Interested users should contact me if they would like further details.

Lee MacDonald
extension 3943

3.3 Personal Computer Survey

Many thanks to all the people who responded to our PC survey. The information is being collated and will be made available to the University community. Hopefully this will be completed in time for the next newsletter.

Geoffrey Dengate
extension 3391

3.4 Public Domain (free) Software for Apple Macintosh

A library of public domain software called SUMacC (pronounced shoe-mac, as in poison sumac), is now available on the VAX 11/780 under Eunice. SUMacC stands for Stanford University Macintosh C cross-compiler. It consists of a large range of utilities, tools, examples, and the C compiler itself.

How do you make use of all this free software? Firstly, you need an account on the VAX 11/780, (for information on getting a VAX account, and documentation on Eunice, phone ext. 2188). Secondly, a good working knowledge of UNIX (Eunice) and C would be of great benefit.

Unfortunately, documentation for all of this is scattered throughout the file hierarchy. The root directory for SUMacC is /usr/mac, which contains mainly sub-directories and sumacc.doc. The UNIX programmer's manual entries are under /usr/mac/man in nroff -man form, and most of the other sub-directories have .doc files or information gleaned from the info-mac network.

The equivalent of the Lisa Pascal Workshop is in /usr/mac/ws with examples in /usr/mac/mac. To make the most out of this software you need "Inside Macintosh" which comes with the 68000 Development System (obtainable from The Byte Shop, and not a book for the faint-hearted). There are also some other interesting examples in /usr/mac/info.

"This is all very well and good," I hear you say, "but how do I get them onto my Mac?"

Well... First you need a copy of MacTerminal, then you should read /usr/mac/etc/download.doc, and then /usr/mac/man/macput.1. Then log into the VAX, get into Eunice, and follow the directions in download.doc.

At the moment, all this is rather piece-meal and not very well documented. We apologise for this seeming lack of support, but things will improve as we learn more about it ourselves. In the interim, you are welcome to experiment with all of this software (it is all public domain) and let us know of anything interesting you discover, or problems you have, by sending mail to CCDCHELP.

In the future, new versions of SUMacC will be put up, as well as the "info-mac tape" from SUMEX.

Chris Barker
extension 4167

4. Engineering & Communications Services — Graham Rees, extension 3288

4.1 VIATEL

VIATEL is Australia's national videotex service provided by Telecom. VIATEL is a low-cost, easy-to-use information retrieval system which uses the existing telephone

network. Information is provided by a number of independent Service Providers and can be viewed on a special VIATEL terminal, a PC modified for VIATEL or a TV set via an adaptor.

If you would like a demonstration of VIATEL, please contact Annabel Tyler on extension 3018.

The University is about to become a minor Service Provider to further evaluate the potential use of videotex to the University. The pilot test is being conducted by Professor John Chick (External Studies) who would be pleased to hear from interested parties.

Graham Rees
extension 3288

4.2 New CSIRONET Gateway

Telecom have now installed the line to CSIRONET for the VAX based gateway. This gateway will operate concurrently with the current CSIRONET gateway at least until the end of November 1985.

The VAX can be accessed from CSIRONET as host BXU. People wishing to access other CSIRONET hosts from the University network should first login to the VAX and then give the command CNIA.

It is recommended that CSIRONET users wishing to access any of the University's systems AND University users wishing to access CSIRONET host should establish an account on the central VAX-11/780 and use the period of concurrent operation of the two gateways to establish their required command procedures AND help the Computer Centre give you the facilities you require.

Users with questions or difficulties should contact Danny Smith on extension 4079 or send mail to CCDANNY on the VAX-11/780 or to DANNY on the DECsystem 10.

Arthur Hartwig
extension 4079

5. Applications Development — Tony Bird, ext. 3944

5.1 Editing 1022(TM) Data Files

Several users have recently complained of losing their 1022 .DMS files after an "updating" session. In every instance it was subsequently found that they had attempted to change individual records using QEDIT. In one case merely invoking the editor and exiting normally, upon realising their error, had destroyed their .DMS file.

Please note 1022 .DMS files contain both the raw data and the key tables in an especially formatted binary file which is instantly corrupted if an unsophisticated editor like QEDIT is employed. There is thus no way QEDIT can be used on a .DMS file; although it is quite satisfactory for .DMC, .DMD, or .DMI files which are ASCII files.

However, if you do inadvertantly ever issue the fateful command EDIT THINGS.DMS, there is one last hope: end your attempted editing session with QUIT and you will probably escape unscathed. If not, delete the changed file

rename the backup file THINGS.BAK to the new THINGS.DMS. If this fails contact the Batch Station and fill in a file retrieval form.

Tony Bird
extension 3944

5.2 Information Concerning Courses

Enrolments for all courses may be made by phoning extension 3018.

The following schedule of courses has tentatively been arranged for the period August — October, 1985:

August

SQL	August 19-23 5 half days 9-12 each day
Elementary BASIC Programming	August 26-30 5 half days 9-12 each day
Introduction to PDP-10	August 26-29 4 half days 1-4 each day

September

Introduction to IBM	September 2-5 4 half days 9-12 each day
SAS	September 2-6 5 half days 1-4 each day
RUNOFF	September 9-12 4 half days 1-4 each day
"Using your PC on the Network"	September 10-12 3 half days 9-12 each day
Introduction to PDP-10	September 17-20 4 half days 1-4 each day
Introduction to IBM	September 23-26 4 half days 9-12 each day
1022	September 23-27 5 half days 1-4 each day
SQL	September 30-October 4 5 half days 9-12 each day

October

Typesetting	October 14-18 5 half days 1-4 each day

General Notes:

1. Intending users of the PDP-10 system must be familiar with the content of the course *Introduction to PDP-10* (i.e. terminal usage, file-management, editing) before attending other PDP-10 courses.

2. In corresponding fashion, for the IBM system, users should have attended either *Conversion to IBM* (for previous PDP-10 users) or *Introduction to IBM* (for completely new users) before attending other IBM courses.

3. Courses held at St Lucia (with the exception of CAD/CAM courses) are conducted in the Computer Centre's teaching area near the Physics Annexe. Courses designated (GU) are held in Room 1.49, East Wing, SIA Building at Griffith University.

4. Staff and post-graduate students are admitted free to courses; all others pay at the rate of $10.00 per half-day session.

5. Enrolments for all courses may be made by phoning ext. 3018.

Barry Maher
extension 3021

6. Miscellaneous

6.1 Departmental Equipment for Sale

- The Department of Anthropology and Sociology calls for tenders for a Sirius 1 micro computer. Perfect working order, dual drive, cable for printer, all manuals, MSDOS and WORDSTAR systems with keyboard setup. To be placed by 13 September with the Department on ext. 3151 or Robyn Lincoln, ext. 2931.

- FOR SALE. Digital PC100 floorstand. Perfect Condition. $70. Contact Anita, Animal Production Department. Ext. 2088.