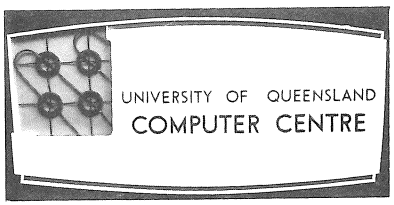

COMPUTER CENTRE BULLETIN

Vol 5 No 4
10 April 1972

Editor:
Mrs Sarah Barry

COMPUTER CENTRE COURSES 1972

The attached schedule details courses to be conducted by the Centre during 1972.

A brief description of each of these is given below. Users wishing to attend a course must enrol on the form 'NOMINATION FOR COMPUTER COURSE', and return the form to the Centre prior to the closing date for that course. Nomination forms are available from the Administrative Officer in the Centre.

In addition to these courses, a number of informal seminars on a variety of topics will be given during the year. Announcements of seminars will be published in weekly newsletters and in future Bulletins.

(a) Introductory FORTRAN Programming

FORTRAN (Formula Translation) is a programming language that allows the computer user to express his calculations in a mathematical type of notation. The introductory FORTRAN programming courses assume that the student has no prior knowledge of either computers or programming. These courses cover some computer concepts, basic FORTRAN programming, and include several exercises that are run on the PDP-10 computer.

course duration	:	five half days
course fee	:	university personnel $20 others $40
prerequisites	:	none

(b) Introduction to Dynamic Debugging Technique

DDT (Dynamic Debugging Technique), available to remote terminal users of the PDP-10, is a powerful facility that greatly assists in the testing and debugging of programs. These short courses introduce DDT and its uses to the FORTRAN programmer, and provide some practical experience.

course duration	:	two half days
course fee	:	university personnel $8 others $16
prerequisites	:	experience in FORTRAN and use of remote terminals

(c) Introductory BASIC Programming

The BASIC programming language is a simple, FORTRAN-like language, designed specifically for interactive use via a remote terminal. These courses introduce users with some experience of FORTRAN programming to the BASIC language and use of remote terminals.

course duration	:	three half days
course fee	:	university personnel $12 others $24
prerequisites	:	some FORTRAN knowledge

(d) Introductory MACRO Programming

MACRO is the assembly language for the PDP-10. This course will describe some aspects of the internal operation of the PDP-10 machine, introduce assembly language programming, outline the MACRO instructions available and consider the writing of macros and subroutines for use with FORTRAN mainline programs. As the course is introductory, it will not treat input/output operations in MACRO, or any of the more advanced features of the language. Knowlege of FORTRAN for the PDP-10 is a prerequisite for this course.

course duration	:	six half days
course fee	:	university personnel $24 others $48
prerequisites	:	knowledge of FORTRAN and experience in using the PDP-10

(e) Introductory COBOL Programming

COBOL (Common Business Oriented Language) is a programming language specifically designed for business data processing applications. The language provides the user with

particularly good facilities for file processing jobs and the easy production of well formatted output reports. This course assumes no prior knowledge of computers or programming, and covers some computer concepts, basic COBOL programming and includes several exercises that are run on the PDP-10.

course duration	:	eight half days
course fee	:	university personnel $32 others $64
prerequisites	:	none

(f) Advanced Programming Course

In response to a number of requests received over the past year, the Centre will this year conduct an advanced programming course. This course will not deal with any specific language, but rather will discuss some of the more important techniques of programming and processing. The topics discussed will include addressing techniques, program organization, errors and accuracy, file organization and file processing. It is expected that students will have had prior experience in programming on the PDP-10.

course duration	:	six half days
course fee	:	university personnel $24 others $48
prerequisites	:	knowledge of programming and use of the PDP-10

COMMENCE DATE	COMMENCE TIME	TITLE	LOCATION	DURATION	COURSE FEE		NOMINATION CLOSING DATE
					UNI	OTHERS	
27.4.72	2 p.m.	Introductory BASIC Programming	214 Engin.	2 - 5 p.m. on 27.4.72 2.5.72 4.5.72	$12	$24	20.4.72
29.4.72	9 a.m.	Introductory FORTRAN Programming	B18 Engin.	9 - 1 p.m. on 29.4.72 to 2.5.72	$20	$40	22.5.72
13.5.72	2 p.m.	Introductory MACRO Programming	214 Engin.	2 - 5 p.m. Tues & Thur fr 13.6.72 to 29.6.72	$24	$48	6.6.72
11.7.72	2 p.m.	Introductory COBOL Programming	214 Engin.	2 - 6 p.m. Tues & Thur fr 11.7.72 to 3.8.72	$32	$64	4.7.72
7.8.72	9 a.m.	Introductory FORTRAN Programming	B18 Engin.	9 - 1 p.m. on 7.8.72 to 11.8.72	$20	$40	31.7.72
21.8.72	9 a.m.	Introductory BASIC Programming	B18 Engin.	9 - 1 p.m. on 21.8.72 to 23.8.72	$12	$24	14.8.72
24.8.72	9 a.m.	Introduction to Dynamic Debugging Technique	B18 Engin.	9 - 1 p.m. on 24.8.72 25.8.72	$8	$16	17.8.72

COMMENCE DATE	COMMENCE TIME	TITLE	LOCATION	DURATION	COURSE FEE		NOMINATION CLOSING DATE
					UNI	OTHERS	
5.9.72	2 p.m.	Advanced Programming Course	214 Engin.	2 - 6 p.m. Tues & Thur fr 5.9.72 to 21.9.72	$24	$48	29.8.72
23.10.72	9 a.m.	Introductory FORTRAN Programming	B18 Engin.	9 - 1 p.m. fr 23.10.72 to 27.10.72	$20	$40	16.10.72
26.10.72	2 p.m.	Introduction to Dynamic Debugging Technique	B18 Engin.	2 - 6 p.m. on 26.10.72 27.10.72	$8	$16	19.10.72

PUBLIC REMOTE TERMINAL

The Centre has recently ordered an ASR model 33 teletype terminal for installation in the clients' room at the Centre. This terminal, which provides both key board and paper tape facilities, will be available to all clients. On present delivery schedules this terminal should become operational early in April. The exact date will be announced in the weekly newsletter.

1. AUTHORITY TO USE TERMINAL

No special authority is required to use this terminal. Before a user can login on the terminal he must have an initial password entered into the system's administrative files. This is done by completing the second part of the form 'AUTHORITY TO USE REMOTE TERMINAL' (available at the Centre) and returning the form to the Centre's Administrative Officer.

2. FILE SPACE

Because of the physical limitations of the available file space in the system, the logged out file limits for projects running via the public terminal will be the same as for batch projects, currently 12.5 K words. This limit will be reviewed with the introduction of a file management system providing archival file storage.

3. CONDITIONS OF USE

Initially the Centre will not place any conditions on the use of the public terminal. Users are requested to continue running as much work as possible via batch, and to restrict use of the terminal to that work for which it is best suited (e.g. program debugging). It is hoped that the user of the terminal will show consideration for others who are waiting, and finish his work in the minimum possible time.

Should this mode of operation prove unsatisfactory, some more formal arrangements will be introduced to control use of the terminal.

4. CHARGES

With the exception of the connect time charge, standard charges will apply to work processed from the public terminal. In order to cover the costs of provision and maintenance of this terminal connect time charges will be levied at twice the standard rate.

NEW MONITOR

[WN-79]

A new monitor was implemented on Monday 20 March. This monitor corrects the most frequent system errors, and should improve system reliability.

NEW EDITOR

[WN-80]

A new version of the Editor (version 1B(1)-3) has been implemented.

This version allows variable line lengths. Lines may be up to 160 characters long excluding the <cr><lf>. Lines of 159 and 160 characters length will however be output on the teletype without the <cr><lf>.

These longer lines will be useful for those editing files where comments tend to run past 80 characters and also for those wishing to inspect files created for listing with long printer lines. In addition the variable length lines will mean that paging files will be smaller and disk accesses reduced for most users.

(a) consequent changes in error actions are:

After a 'LINE SPLIT' the first line is typed out. In the CHANGE and ALLCHANGE commands the 'TRUNCATED' message is replaced by the message 'NO CHANGE, LINE TOO LONG' and the line is unchanged.

(b) continued lines

Longer lines than 72 characters may be input in the INSERT, INPUT and REPLACE commands by ending the line with a '-' immediately before the <cr><lf>. The continuation may be continued on as many lines as necessary but if 160 characters is exceeded the message 'LINE TOO LONG, IGNORED' is given and all the parts of the continued line ignored.

(c) break characters

Lines in the INSERT, INPUT and REPLACE commands are no longer terminated by the break characters <bell>, <lf>, <vt>, <ff> and <altmode>.

(d) new commands

JOBTIM types out the job time since login in milliseconds
JOBBAL types out the current job balance in internal cents.

(e) further paging access reduction

The paging system has now been arranged so that a page is not written out if it already exists on the paging file and has not been altered since it was last written out. Free lines are also chained together within pages so that inserted lines will be placed in the current page if possible.

FINISH

[WN-80]

A new version of FINISH has become operational. This version does not affect the users, but improves the handling of accounting for jobs logging out.

JOBDAT

[WN-80]

On Monday 20 March a new version of JOBDAT was put onto the system. This version is compatible with the previous version, but includes additional definition of all symbols according to new standards promulgated by Digital. Its use will facilitate adoption of new release of Digital software.

JOBDAT defines symbolically the various locations within the job data area that are used by the operating system for the control of the user's job.

PDP-10 FORTRAN

[WN-80]

(a) The FORTRAN manual, MNT-5, states on page 6-16,
'If the closing parenthesis of the format is reached before the end of the input/output list, then the format is repeated from the last left hand bracket of level 1 or level 0.'

It is not specifically stated that a repeat from level 1 includes the repeat count for that group if any, but this in fact what occurs.

example:

```
      WRITE (6,10) (I,I=1,20)
10 FORMAT (2X, 'TEST', 10(I3, 2X))
           ↑              ↑
       level 0        level 1
```

The above coding repeats from level 1, putting 10 values on each line.

(b) It has been found that some programs that have very long ASCII output records run correctly with output to teletype (logical unit 6) but do not run if they are changed to output to disk (e.g. logical unit 10). This is because all FORTRAN ASCII output to the disk is transmitted via a line buffer with a capacity of 133 characters. FORTRAN ASCII output records to disk should therefore be limited to 133 characters.

PDP-10 OPERATIONS

[WN-81]

As from Tuesday 4 April, a new system of backup for users' files will be introduced. This should result in more reliable backup to the file system and provide for faster recovery of files in the event of a system crash. A further benefit should be that there will be less interference with interactive work during the evening shift. However, the introduction of this new procedure will result in an earlier shut down of the system at 2300 hours instead of 2330 as at present. This limitation on scheduled hours will be removed with the introduction of third shift operation later in the year.

CARD PUNCHES

[WN-81]

At present there are four card punches in the client's room at the Centre. Another card punch has been ordered and delivery is expected shortly. This will increase the facilities available. However, the Centre would like to stress the conditions under which these machines are made available to users.

(a) One machine, marked number '1' is for the use of Computer Science students and staff only.

(b) All machines are only to be used for punching corrections. They are not available for general data preparation.

(c) There is a time limit of five minutes per machine.

The card punches and data cards are currently free, but if it is felt that users are continuing to abuse the above conditions, then the Centre may be forced to introduce the use of coin operated machines.

FIFTH AUSTRALIAN COMPUTER CONFERENCE

The Fifth Australian Computer Conference is to be held in Brisbane. A record number of 1500 delegates, including many from overseas, are expected to attend the conference. The conference is sponsored by the Australian Computer Society and will be held from May 22 to May 26.

Proceedings on the opening day will be held at the Brisbane City Hall where two Congressional Addresses and the Feature Address of the Conference will be given. The Congressional Speakers will be Sir Alan Westerman, Chairman of the Australian Industries Development Corporation, and Mr Herman Weber, Managing Director of Massey Ferguson (Australia) Ltd. The Feature Speaker will be Sir Frank Macfarlane Burnet K.B.E. O.M., one of Australia's outstanding scientists, who is presently Guest Professor of Micro Biology at Melbourne University.

Technical sessions will be held at the University of Queensland at St Lucia on the following four days.

Strong overseas interest and participation in the Conference is already assured. About one fifth of the submitted papers have come from overseas and six of the keynote speakers will be leading international authorities on computing.

Altogether 255 summaries of papers were received and subsequently about 200 full papers submitted. The Papers Committee reports that an exceptionally high standard over a wide range of topics has been maintained. In all, about 90 papers will be presented. To accommodate the large number of technical papers, three sessions will be conducted concurrently.

Topics planned include: computer systems, management information systems, programming languages, subsystems, systems programming, language processors, numerical analysis, mathematical programming, communications, simulation, computer centre management, data processing systems, and applications. A special interest session on medical computing is also being held.

Each of the ten keynote speakers will lead one of these topics. Ample time has been allowed for the presentation and discussion of each paper. Several discussion panels are planned, and the conference will culminate in a grand panel discussion. The panel will consist of the keynote speakers from overseas and will be chaired by Mr Robert Moore.

The keynote speakers so far arranged and their topics are:

Mr Kaoru Ando, Nominee of the Information Processing Society of Japan, Chairman of Fujitsu FACOM Ltd; Growth and Development of Japanese Computer Industries - Philosopy and Current Trend.

Dr Stanley Gill, formerly Professor of Computing Science, Imperial College, London; From Prophecy to Practice - the Vision and the Reality.

Professor C. C. Gottlieb, Professor of Computer Science, University of Toronto; Social Implications of Computers.

Dr Grace Hopper, Head, Navy Programming Languages Section, U. S. Navy; Programming Languages - Present Actions in the Light of Future Requirements.

Dr Jan A. Rajchman, RCA Laboratories, Princeton, New Jersey; The Inventive Spirit and the Computer.

Mr Linwood C. Dunseith, Assistant Director for Computation and Flight Support, National Aeronautics and Space Administration; Computers Can be Fun.

Mr G. E. Hams, Assistant Director General, Planning and Research Division, Postmaster General's Department; Computer and Data Communications.

Mr P. J. Owens, General Manager, The Advertiser, Adelaide; The Application of Computers in the Printing and Graphic Arts Industries.

Mr H. D. Pridmore, Victorian Branch Manager, Computer Sciences of Australia; Computing - the Emergence of a Discipline.

Mr J. Rankine, Rankine and Hill, Consulting Engineers; The Consulting Engineer and the Computer.

An exhibition of computing equipment to be held at the University of Queensland in conjunction with the Conference, has been fully booked by about 25 exhibitors representing computer and peripheral manufacturing interests in Australia, Europe and the United States. The exhibits will cover a total floor area of more than 10,000 square feet. The displays will vary in size from 100 to 1400 square feet. The exhibition will not be open to the general public. It is designed primarily for the Conference delegates, but selected student groups and guests invited by exhibitors will be admitted.

Films on computers and their applications will be screened during most of the Conference. The program is a selection of the best tutorial and advanced films from many sources and is designed to explain and emphasize the significant developments under discussion at the conference.

The interests of civil engineers in computing will be catered for in a special conference arranged to coincide with the Computer Conference. The Institution of Engineers Australia and the Australian Computer Society have jointly sponsored the First National Conference on the Use of Computers in Civil Engineering. This conference will be held at the University from May 18 to May 20 in the week immediately preceding the Computer Conference. The sessions will cover most aspects of Civil Engineering: structures, roads, water resources, transportation, soil mechanics, project control, and management information systems. An address will be given by Dr R. J. Allwood, Director of the GENESYS Centre, a research centre formed in 1969 at Loughborough University in Leicestershire to develop a computer software system for extensive use in civil engineering work. GENESYS (General Engineering System) is the name of the system. While the exhibition of computer equipment will not be officially opened until the Computer Conference, some exhibitors will open early to display their equipment for the benefit of the Civil Engineering Conference.