C.S.I.R.O.

COMPUTING RESEARCH SECTION

NEWSLETTER NO. 24 - 1st JUNE, 1967

I. GENERAL

Publications Issued this Month

NL Newsletter No. 24

LM Library Accession List No. 15 - April 1967.

Other Publications Available

C3 CSIR THETA Evaluation of Jacobi's Theta functions.
Author: A.F. Bennett, c/- C.R.S., C.S.I.R.O., Melbourne.

C3 CSIR FRESNEL Evaluation of Fresnel integral.
Author: P.E. Ciddor, Div. of Applied Physics, C.S.I.R.O., Sydney.

C3 CSIR QNOME Evaluation of the nome function q(k).
Author: A.F. Bennett, c/- C.R.S., C.S.I.R.O., Melbourne.

D1 CSIR FILSIMP Integration of trigonometric integrals by Filon's method.
Author: C.H.J. Johnson, Div. of Applied Chemistry, and R.J. Hurle, C.R.S., C.S.I.R.O., Melbourne.

F1 CSIR BANDIT Solution of simultaneous linear equations in Band Matrix form.
Author: R.H. Hudson and J.J. Russell, C.R.S., C.S.I.R.O., Canberra.

Basic Fortran Courses

Sydney - June 5th at 9.30 a.m. for one week.

Melbourne - July 3rd at 9.30 a.m. for one week.

Anyone wishing to attend the Melbourne course should apply to Mr. J.J. Russell, C.R.S., C.S.I.R.O., P.O. Box 160, Clayton (Phone 5446757).

Seminars - Canberra

At 10.30 a.m., Friday, 2nd June, Professor A. Smirnov of the Moscow Physicotechnical Institute will give a talk on "Experimental Data Processing as a New Field for Computer Applications". Professor Smirnov will discuss the features of experimental data processing, data collection and conversion, systems for data processing and software requirements.

At 2.00 p.m., Thursday, 8th June, Dr. C. Abraham of the Computing Research Section will speak on "Mechanical Mathematics". The manipulation of the symbol strings making up algebraic expressions will be discussed.

At 2.00 p.m., Thursday, 29th June, Dr. R.S. Rodger of the Department of Psychology at the University of Sydney will present a paper "Decision Based Error Rates in Statistics". Dr. Rodger will be outlining the theory and computer experiments on which he bases his contention that the standard statistical tables for hypothesis testing are inappropriate. Beside his statistical work, Dr. Rodger has considerable experience in the use of computers for the marking of examinations.

Computer Training Course Charges

It has been decided to make a charge of $25.00 for each person attending a computer training course. This will apply both to people from within C.S.I.R.O. and from outside organizations. The charge will cover the cost of providing programming literature (e.g. Manuals) issued to trainees and will apply to all Basic Fortran and Compass courses from 1st May, 1967. The method of payment will be detailed during the course.

Requests for C.D.C. Manuals

When requests for Manuals are made by mail, users should quote their Charge Code. It is also helpful if the Publication Number of the required Manual is stated.

Visitors to Canberra

Users visiting Canberra should be aware that the processing of their jobs by the computer can be followed by using the Display system. Users should consult Memorandum No. 6 or the staff of Computing Research Section.

Card Trays

A large number of card trays are missing from the cabinets in the visitors room in Canberra. It is requested that users holding these trays return them as soon as possible.

Labels on EQUIP Cards

(a) Magnetic Tape Labels

The name field of an EQUIP card is processed identically by the 3200 and the 3600. The leftmost 14 characters in the name field are regarded as the name, with blanks considered as significant characters. If there are less than 14 characters before the end of the field, blanks are added to the right to create a 14 character name. Care should be taken that the name field of the EQUIP card matches that of an input tape exactly. For example, if an input tape is equipped by

$^{7}_{9}$EQUIP, 32 = (^L^H^326,1,1),MT,SV,RØ

the label on the tape must contain the name:

^L^H^326^^^^^^

(b) Document Labels on the 3600

All blanks in the Charge Code and Ident fields of an EQUIP card are squeezed out and the rightmost 8 non-blank characters used. If there are less than 8 non-blank characters before the end of the field, blanks are added to the left to create an 8 character Charge Code or Ident. For example, if a Document is created using the EQUIP card,

*EQUIP, 32 = (SUTFEXIT,^L^H^326^^^^)

the Document will be labelled:

SUTFEXIT^^^LH326

Puzzle Corner

From the response to the problem last month, we gathered most readers were on leave. Only two correct answers were received - from D. Mendus and J.A.B. Palmer.

Series (a) consisted of the initial letters of the cardinal numbers: one, two, three, four .... so that the next letter is N (nine). The letters of series (b) in alphabetical order are the letters which contain no curved lines so the next letter is K.

Sequence (c) is simply the representations of the number 16_{10} to base 16_{10}, 14_{10}, ... 2_{10} respectively. The missing representation is that to the base 5_{10}, that is 31.

Since these problems proved quite a challenge we should like to receive more series puzzles from readers for inclusion in a later Newsletter.

This month's puzzle asks: Into how many parts can the plane be divided by six intersecting circles? By n circles?

FORTRAN 5.3

A new version of the FORTRAN compiler (5.3) has recently been incorporated under the DAD system. A large number of corrections and some improvements have been made. For example, only those indices used within an object routine are now saved. There remain some known limitations. For example, variables named IF and FORMAT may not be used at the beginning of statements.

II. 3600

INFOL

INFOL (INFormation Oriented Language) is a generalized information storage and retrieval system for the 3600. With INFOL, selected pieces of information can be conveniently extracted from a file and presented to a user.

The INFOL language, which uses English words, was designed to be simple to learn by non-programmers. The information handled by INFOL may be of variable length, so text strings are readily handled.

The use of INFOL is described in the following Control Data publications:

INFOL Reference Manual (Pub. No. 60170300)

Instant INFOL (Pub. No. 60173600)

INFOL: A Generalized Language for Information Storage and Retrieval Applications (Pub. No. 60175600).

Use of INFOL for Document Retrieval Applications (Pub. No. 60175700).

These last two are brief descriptive papers delivered to conferences.

INFOL is expected to be available under DAD shortly.

Simulation Programming Languages - SIMSCRIPT

As stated in previous Newsletters the Control Data SIMSCRIPT System is now available under the 3600 SCOPE monitor. Currently Mr. K. Tognetti, Department of the Navy and Mr. J.S. Armstrong, Computing Research Section are producing a SIMSCRIPT primer as the Reference Manual (Pub. No. 60134600) is not suitable for teaching purposes. Users who may be interested in attending a course in SIMSCRIPT or joining a group using simulation techniques are invited to contact either Mr. Tognetti or Mr. Armstrong (phone 40455 ext. 503).

III. 3200

Array Dimensioning

Programmers are reminded that while it is possible to refer to locations outisde the bounds of an array it is illegal and should not be done. In future, 3200 programs which do this may result in garbled printout. This can be avoided by using sufficiently large array dimensions, however the use of unnecessarily large arrays should be avoided as this may reduce input/output speeds.