

VOL.11 NO.3 DENVER WATER DEPARTMENT SCIENTIFIC COMPUTER USERS NEWSLETTER APR.,1978

SCIENTIFIC COMPUTER USAGE

DURING THE FIRST QUARTER OF 1972, 12 SCIENTIFIC USERS USED 12 TERMINALS (CRT'S) AND RAN 120 SIGNIFICANT PROGRAMS IN ADDITION TO TEXT EDITING AND OTHER SYSTEM OPERATIONS. AT THE END OF THE QUARTER, SCIENTIFIC USERS HAD ABOUT 200 MILLION CHARACTERS OF DATA AND PROGRAMS RESIDING ON DISK. THIS REPRESENTS ONE-SIXTH OF THE TOTAL SYSTEM DISK CAPACITY.

FILES

IF YOU HAVE LARGE AMOUNTS OF DATA STORED AS AN ELEMENT OF A FILE THAT YOU USE MORE THAN ONCE A MONTH, THE WHOLE FILE WILL RESIDE ON DISK TAKING UP ROOM. TO SAVE THE DATA PERMANENTLY WITHOUT COPYING TO TAPE, PUT IT IN A DATA FILE:

```
MSG,UP DATAFILENAME,F33
END YOURFILE.DATAELEMENT,DATAFILENAME.
EXIT
```

THE DATA FILE WILL BE AVAILABLE FOR 30 DAYS AFTER EACH REFERENCE. AFTER THAT YOU MUST ASSIGN IT AND WAIT FOR IT TO BE RE-LOADED FROM A SYSTEM TAPE.

ASG.A DATAFILENAME.

SEE ALSO "FAST RE-LOAD".

COPYING ELEMENTS

COPYING ELEMENTS FROM ONE PROGRAM FILE TO ANOTHER SHOULD BE DONE WITH CARE IN ORDER NOT TO DESTROY THE CONTENTS OF THE FILE THAT IS BEING COPIED INTO.

USING THE FORMAT:

ACOPY,S FN1.,FN2.
R
A
P

THE PREVIOUS CONTENTS OF FILE FN2. WILL BE KEPT
INTACT.

S - FOR SOURCE LANGUAGE ELEMENTS
R - FOR RELOCATABLE ELEMENTS
A - FOR ABSOLUTE ELEMENTS
P - FOR S, R AND A AT THE SAME TIME.

KEEP IN MIND THAT IF AN ELEMENT IN FNL₁ HAS SAME EXACT NAME AS AN ELEMENT IN FNL₂, AND THEY BOTH ARE OF SAME TYPE (S,R OR A), THEN THE ELEMENT IN FNL₂ WILL BE OVERLAYED BY THE NEW ELEMENT FROM FNL₁.

USING THE FORMAT:

GCOPY FN1..FN2.

ALL THE CONTENTS OF FN1. WILL BE COPIED INTO FN2.
ALL THE CONTENTS OF FN2., BEFORE THE "COPY", WILL
BE DESTROYED.

CALL KENT OR TIM AT EXT 454 FOR ASSISTANCE OR INFORMATION
PLEASE POST IN YOUR SECTION

SSSSSSSS	SSSSSSSSSS	SSSSSSSS	SSSSSSSSSS	SS	SSS	SSSSSSSS
SSSSSSSSSS	SSSSSSSSSSSS	SSSSSSSSSSSS	SSSSSSSSSSSS	SS	SSS	SSSSSSSSSSSS
SS	SS SS	SS SS	SS SS	SS SS	SSS SS	SS
SSS	SS SS	SS SS	SS SS	SS SS	SSS SS	SS
SSS	SS	SS SS	SS SS	SS SS	SSS SS	SSS
SSS	SSSSSSSSSSSS	SSSSSSSSSSSS	SSSSSSSSSSSS	SSSSSS		SSS
SSS	SSSSSSSSSSSS	SSSSSSSSSSSS	SSSSSSSSSSSS	SSSSSS		SSS
SSS	SS	SS	SS	SS	SSS	SSS
SS	SS SS	SS	SS SS	SS SS	SS SS	SS
SS	SS SS	SS	SS SS	SS SS	SS SS	SS
SSSSSSSSSS	SS	SS	SS SS	SS SS	SSS	SSSSSSSSSS
SSSSSSSS	SS	SS	SS SS	SS SS	SSS	SSSSSSSS

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REVISED SCIENTIFIC PROGRAM/SUBPROGRAM
LIBRARY DOCUMENTATION ISSUED

A REVISED EDITION OF THE "SCIENTIFIC PROGRAM
LIBRARY DOCUMENTATION" HAS BEEN DISTRIBUTED. IT
CONTAINS REVISED DOCUMENTATION AS WELL AS SEVEN
NEW SUBPROGRAMS:

- SYMINV- INVERTS SYMMETRIC MATRICES.
- DSYMIN- DOUBLE PRECISION VERSION OF SYMINV.
- PIYPE- DETERMINES TYPE OF A RUN, DEMAND OR
BATCH (SEE SEPARATE ARTICLE).
- SDATES- CALCULATES THE NUMBER OF DAYS BETWEEN
TWO DATES.
- LINREG- PERFORMS STANDARD LINEAR REGRESSION.
- CLABEL- PREPARES OUTPUT LABELS FOR USE IN
OTHER SUBPROGRAMS SUCH AS PLOT AND
LABEL.
- ADJUST- ADJUSTS MAXIMUM AND MINIMUM SCALE
VALUES FOR PLOTTING SUBROUTINES.
(LEFT OUT OF LAST EDITION).

PROGRAMS BSRTSI AND BSRTRI SORT SEVERAL SETS OF
DATA AT ONCE. THEY HAVE BEEN REVISED TO FIX THE
BUG REPORTED IN FEBRUARY'S SPARKS. THE NEW
VERSIONS REQUIRE ANOTHER PARAMETER IN THEIR
ARGUMENTS.

ALL SCIENTIFIC USERS ARE ENCOURAGED TO LOOK OVER
THIS LATEST EDITION. THE PROGRAMS ARE FOR GENERAL
USE AND ARE EASY TO USE. THE SUBPROGRAMS COVER A
WIDE RANGE OF APPLICATIONS AND ARE DESIGNED TO BE
EASILY USED IN FORTRAN PROGRAMS. USERS ARE ALSO
ENCOURAGED TO SUBMIT GENERAL PROGRAMS AND
SUBPROGRAMS FOR INCLUSION IN THE SCIENTIFIC
PROGRAM LIBRARY.

SIGSCI

THE NEXT MEETING OF THE SPECIAL INTEREST GROUP ON
SCIENTIFIC COMPUTING (SIGSCI) WILL BE JUNE 29TH AT
THE SPA MOTOR INN. THE SPEAKER WILL BE BOB LEWIS
OF MARTIN-MARIETTA. HIS TOPIC WILL BE "STRUCTURED
SOFTWARE ENGINEERING". THE LAST MEETING (APRIL)
HAD A LARGE ATTENDANCE. JIM HARGIS, FORMERLY OF
COMPUTER GRAPHICS COMPANY, SPOKE ON GRAPHICS
HARDWARE AND PASSED OUT SOME VERY GOOD HANDOUTS.
SIGSCI NOW HAS 37 MEMBERS, \$100 IN THE TREASURY,
AND USUALLY 40-50 PEOPLE IN ATTENDANCE AT
MEETINGS.

AIR CONDITIONING PROBLEMS

MONDAY, MAY 15TH, OUR UNIVAC 1100/21 WENT DOWN
TO A MEMORY FAILURE. THIS WAS DUE TO
INADEQUATE COMPUTER ROOM AIR CONDITIONING WHEN THE
OUTSIDE TEMPERATURE WAS IN THE HIGH 80'S. TO TRY
AND ALLEVIATE THE LOAD ON THE PRESENT AIR
CONDITIONING SYSTEM, EDP SHUT DOWN THE DRUM
STORAGE DEVICE. THE NET EFFECT TO THE USER IS

DEGRADED RESPONSE ON THE SCOPES AND SOME PRINTOUT
DELAY. PLANS ARE TO HAVE MORE AIR CONDITIONING IN
AS SOON AS IT IS RECEIVED AND INSTALLED. YOUR
COOPERATION AND TOLERANCE UNTIL THE DEFICIENCIES
CAN BE CORRECTED IS APPRECIATED.

UPDATED SIR

WHEN AN @PRT,S IS ATTEMPTED FOR AN OLD ELEMENT,
YOU MAY ENCOUNTER THE FOLLOWING MESSAGE:

ELEMENT IS NOT SIR TYPE SDF.

THIS IS BECAUSE THAT ELEMENT WAS CREATED BY AN OLD
VERSION OF SIR. SIR STANDS FOR "SOURCE INPUT
ROUTINE" AND IS USED BY OUR UNIVAC SYSTEM FOR DATA
INPUTS. WE HAVE A NEW VERSION OF SIR ON THE
SYSTEM. ALTHOUGH THE ABOVE PROBLEM IS NOT
PRESENTLY FATAL, IT IS BEST TO CORRECT THE PROBLEM
NOW. IF THE MESSAGE IS ENCOUNTERED, CALL KENT OR
TIM TO FIND OUT HOW TO CORRECT THE PROBLEM.

SCIENTIFIC CONSULTING QUESTIONNAIRE

THE RESULTS OF THE "SCIENTIFIC CONSULTING
QUESTIONNAIRE" ARE IN. THERE IS A GOOD INTEREST
IN THE INTRODUCTORY TRAINING CLASSES FROM FALL
1976 ("INTRODUCTION TO THE WATER DEPARTMENT
COMPUTER SYSTEM" THROUGH "FLOWCHARTING"), THE
FORTRAN COURSES, AND A CLASS ON THE LATEST EDITOR
COMMANDS AND TECHNIQUES. THEREFORE, PLANS ARE
BEING MADE TO START THE INTRODUCTORY CLASSES THIS
FALL.

THERE WAS SOME FEEDBACK THAT SCUG MEETINGS WERE
TOO FREQUENT, SO THE MEETINGS ARE BEING HELD
BI-MONTHLY. IN ADDITION, THIS NEWSLETTER WILL
PROBABLY ONLY BE PUBLISHED BI-MONTHLY. HOWEVER,
THERE MAY BE SPECIAL SCUG MEETINGS AND SPECIAL
ISSUES OF SPARKS.

SCUG MEETING

THE JUNE SCUG MEETING WAS HELD AT MOFFAT TREATMENT
PLANT. PAT SPARKS MADE A PRESENTATION ON MOFFAT'S
PDP 11/45 PROCESS CONTROL COMPUTER. ITS
RELATIONSHIP TO MOFFAT, AND ITS ROLE AT FOOTHILLS.
THE PDP 11/45 NOW OPERATES THE NEW EDITION
TREATMENT FILTERS AND ALL THE CHEMICAL FEEDERS.
THE SYSTEM IS NOT AUTOMATIC-- IT IS UNDER OPERATOR
CONTROL. THE OLD TREATMENT FILTERS ARE NOT UNDER
COMPUTER CONTROL. AT FOOTHILLS, A SIMILAR
COMPUTER WILL CONTROL ALL FILTERS, CHEMICALS, LINE
VALVES, AND SETTLING BASIN CLEANERS. THE
DEVELOPMENT WORK FOR FOOTHILLS IS BEING DONE ON
THE COMPUTER AT MOFFAT. PAT FOLLOWED THE
PRESENTATION WITH A TOUR. THE NEXT SCUG MEETING
WILL BE AUGUST 10TH.