

@ENTER UCB2.
 PASSWØRD- ØK
 04/05/73 1641:55
 ()/MAIL NØT ØN DRUM
 @CØPY FILE SAPL TØ '/SAPL' (NEW FILE).

Return to Greiner

@CØPY FILE MACAPL TØ '/MACAPL' (NEW FILE). DRUM SPACE EXHAUSTED ?
 @CHANGE DRUM ASG TØ 511.
 NEW D. A. = 144 ØUT ØF 264
 @CØPY FILE MACAPL TØ '/MACAPL' (NEW FILE).

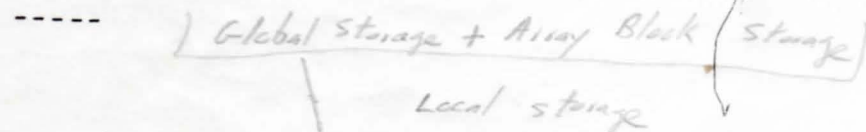
4/5/73

@CØPY FILE APL/EL TØ '/APL/EL' (NEW FILE).

@QED.
 *READ FRØM /APL/EL.
 485 WØRDS.
 *PRINT.
 DØUBLE? NØ

Verification Program #1

Forward to Chuck



PROGRAM 200,40 # of lines

X GLVAR
 Y GLVAR
 Z GLVAR
 P FCN
 EL FCN
 P FUNCTION 0,3,0,0 # results (our 2) # of Parameters in argument list # of local variables

*X-2 PRØDUCT Y- 2 3 4 RESHAPE INDEXGEN 24
 STATEMENT 1
 SHØRTC 24
 ETC INDEXGEN
 ETC CØNVEC,3,((INTTYP,2))
 GCØNSC INTTYP,3
 GCØNSC INTTYP,4
 ETC RESHAPE
 MEMREF ASSIGN; LØNGGL Y
 SHØRTC 2
 GENSCA PRØDUCT
 MEMREF ASNØRE; LØNGGL X
 * SETØRIGIN 1
 STATEMENT 2
 SHØRTCØNST 1
 ETC SETØRIGIN
 ETC EAT1

Parameter variables are not
 Local variables.
 Return variable is
 a Local variable.

ASSIGN - NO - RESULT

```

*Z-X EL Y
    STATEMENT 3
    LONGGL Y
    LONGGL X
    ETC      CALLFCN,2,EL
    MEMREF   ASNØRE; LONGGL Z
    ETC      ATTNTRAP

```

```

*DEL

```

```

    ENDFUNCTION

```

```

*A-B EL C,,D,,I

```

```

EL      FUNCTION 1,3,2,3
        LOCAL A,D,I,B,C

```

```

*A-(SHAPE B) RESHAPE I-0

```

```

    STATEMENT 1

```

```

    SHØRTC 0

```

```

    MEMREF  ASSIGN; SHØRTL I

```

```

    SHØRTLØCAL B

```

```

    ETC     SHAPE

```

```

    ETC     RESHAPE

```

```

    MEMREF  ASNØRE; SHØRTLØCAL A

```

```

*BRANCH 3 SUM 0 EQUAL D-SHAPE C-RAVEL C

```

```

    STATEMENT 2

```

```

    SHØRTLØCAL C

```

```

    ETC     RAVEL

```

```

    MEMREF  ASSIGN; SHØRTLØCAL C

```

```

    ETC     SHAPE

```

```

    MEMREF  ASSIGN; SHØRTLØCAL D

```

```

    SHØRTCØNST 0

```

```

    GENSCALAR EQUAL

```

```

    SHØRTCØNST 3

```

Definition ; not executed or put on stack

```

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```

```

    GENSCALAR SUM

```

```

    ETC     BRANCH

```

```

*BRANCH 3 SUM D EQUAL I // A-A ØR B EQUAL C[I-I SUM 1]

```

```

    STATEMENT 3

```

```

    SHØRTCØNST 1

```

```

    SHØRTLØCAL I

```

```

    GENSCALAR SUM

```

```

    MEMREF  ASSIGN; SHØRTLØCAL I

```

```

    SHØRTLØCAL C

```

```

    INDEX   1

```

```

    SHØRTLØCAL B

```

```

    GENSCALAR EQUAL

```

```

    SHØRTLØCAL A

```

```

    GENSCALAR ØR

```

```

    MEMREF  ASNØRE; SHØRTLØCAL A

```

```

    SHØRTLØCAL I

```

```

    SHØRTLØCAL D

```

C[11,12,13]

GENSCALAR EQUAL
SHORTCONST 3
GENSCALAR SUM
ETC BRANCH

*DEL

ETC RETURNF
ENDFUNCTION
ENDPROGRAM

*FINISHED.
WRITE OUT!
@DRUM BLOCKS LEFT = 130 OUT OF 264
@CHANGE DRUM ASG TO 160.
NEW D. A. = 26 OUT OF 160
@CONTINUE QED.
*8/
*X←2 PRODUCT Y← 2 3 4 RESHAPE INDEXGEN 24
*8MODIFY.
*X←2 PRODUCT Y← 2 3 1 RESHAPE INDEXGEN 24
*14EDIT.
GCNSC ~INTTYP,4
GCNSC INTTYP,1

*85 WORDS. /APL/EL.
*WRITE ON APL/EL.
485 WORDS.
*FINISHED.

@NARP.
SOURCE FILE: /APL/EL.
OBJECT FILE: '/CORE' (NEW FILE).

00006(P) P FUNCTION 0,3,0,0
P REDEFINED
BAD TERMINATION
00012(P+4) ETC CONVEC,3,((INTTYP,2))
BAD TERMINATION
00033(P+25) ETC CALLFCN,
@
@NARP.
SOURCE FILE: /MACAPL.
OBJECT FILE:

@NARP.
SOURCE FILE: /MACAPL.
OBJECT FILE: '/CORE' (OLD FILE).

2 SEC 0 ERR 0 (0) WRD (S:49,0:0,L:0,M:960,U:0)

@CONTINUE NARP.
SOURCE FILE: /APL/EL.
OBJECT FILE: /CORE.

user macro calls

X:G=8 → Global variable X is @ offset +8 from Data Segment
Y:G=9
Z:G=10 → "
P:N=0 → program P is the 0th function in the Procedure Segment
EL:N=1 → program EL is the 1st
P:B=4 → base offset of program P is 4
P1=8 → P[1]
P2=38 → P[2]
P3=42 → P[3]
P:L=12 → length of P is 12
EL:B=20 → base offset of program EL is 20
ELA=4095
ELD=4094
ELI=4093 } Local variables (A, D, I, B, C) = (-1, -2, +3, -4, -5)
ELB=4092
ELC=4091
EL1=8 → EL[1]
EL2=17
EL3=31 → EL[3]

EL:L=12 - *length (EL)=12*
GFIRST=308
FREEBLOCK=11
GLEN=200
LFIRST=508
LLEN=40
PFIRST=548
POLEN=36

10 SEC 0 ERR 1062 (562) WRD (S:89,0:0,L:0,M:1314,U:0)

@DDT.
0;T(U)
0;T /CORE.
IDENT. 02X

it types

now type

1062

Much Bigger than it used to be!!

%F

@SAVE CORE FROM 0 TO 1063 ON /CORE.

~~@ME ?~~

~~@(UCB1) / ?~~

@(UCB1)META4.

DAS;

SOURCE FILE: /SAPL.

END AT FRALLY+16B

OL0 FRALLY+16B; 7312B

OSB IDLE;

OCL 457B;

INPUT FILE: /CORE.

OG0 START: <

IDLE

QCE/APLDSEGW;

461B: 464B 360B

~~QCE 464B, 464B+7;~~

464B: 310B 1B

465B: 1B 0B

466B: 4B 0B

467B: 0B 0B

470B: 0B 0B

471B: 0B 0B

472B: 13B 217B

473B: 245B 1B

QCE 464B+310B, 464B+310B+11B;

774B: 177777B 0B

775B: 0B 64B

776B: 4000B 260B

777B: 4000B 273B

1000B: 60000B 202B

1001B: 4000B 254B

1002B: 4000B 260B

1003B: 0B 0B

1004B: 1B 0B

1005B: 40000B 202B

execution starts here

A (Processor State Area)

*CE means
Core Examine*

ICE 464B, 464B+12;

464B: 310B 1B

465B: 1B 0B

466B: 4B 0B

467B: 0B 0B

470B: 0B 0B

471B: 0B 0B

472B: 13B 217B

473B: 245B 1B

474B: 4000B 273B

475B: 4000B 232B

476B: 4000B 260B

477B: 100000B 217B

500B: 245B 306B

ICE 464B+260B, 464B+260B+20;

NOT A COMMAND

ICE 464B+260B, 464B+260B+20;

744B: 40003B 13B

745B: 1B 0B

746B: 20000B 2B

747B: 20000B 3B

750B: 20000B 1B

751B: 20000B 1B

752B: 20000B 1B

753B: 20000B 1B

754B: 20000B 0B

755B: 20000B 0B

756B: 20000B 0B

757B: 3B 13B

760B: 1B 6B

761B: 20000B 2B

762B: 20000B 3B

763B: 20000B 1B

764B: 20000B 0B

765B: 40000B 201B

766B: 40000B

0FI;

@LOGOUT UCB2.

TIME USED 0:6:14 IN 0:47:22

04/05/73 1729:05

Processor State Area
Contents

reference count

Number of elements

APL P

Variable Z is an array

Data Checks Out - Program Works