516-44
HL
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FSNAP - Floating Point Time Sharing Calculator

This is a preliminary document on the floating-point calculator program implemented for the DDP-516 multi-programming operating system. It is an expanded version of SNAP (see Doc. #40) with a language structure resembling BASIC. The program file is created under control of the Text EDITOR and the FSNAP program can subsequently be entered as:

PROGRAM? FSNAP,PRGFIL

FSNAP -

in response to which the user may type:

C - enter variables

D - print out data values

E - go to TEXT EDITOR

G - go execute program

N - get new program file

P - print values of variables

R - reset variable file

X - return to executive

The FSNAP command list consists of:

A=B+C	addition
A=B-C	subtraction
A=B*C	multiplication
A=B/C	division
A=B↑C	exponentation

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A=SR(B)     square root of B
A=NE(B)     negative value of B
A=AB(B)     absolute value of B
A=SN(B)     sine of B (angle in radians)
A=CS(B)     cosine of B
A=TN(B)     tangent of B
A=CT(B)     cotangent of B
A=AT(B)     arctangent of B
A=EX(B)     exponential function of B (e^B)
A=LG(B)     log10 of B
A=LN(B)     loge of B
A=IP(B)     integer part of B
A=SG(B)     sign of B  = -1  negative
                         0  zero
                        +1  positive
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READ  A,B,C       read values of A, B and C from data file
                  set up by corresponding DATA statement

DATA 25,3.6, etc.  put data in data file

GØTØ 10           unconditional transfer to statement number 10

GØSUB 20          execute subroutine starting at statement
                  number 20

RETN              return from a subroutine

STØP              stop program execution

IF(A)1,2,3        three-way IF statement
                  go to   1  if  A < 0
                          2  if  A = 0
                          3  if A > 0
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IF(A<B)GØTØ 5          IF A less than B
IF(A=B)A=B+C              A equal B
IF(A>B)GØSUB 30           A greater than B
IF(A<=B)C=B↑3             A less than or equal B
IF(A>=B)D=B/A             A greater than or equal B
IF(A<>B)RETN              A not equal B
```

if condition true, execute subsequent statement
if not true, execute next line of code.

FØR I=A,B,C NEXT I	execute lines of code from here to NEXT I instruction for values of I from I=A to I=B in increments of C. Default value of C is 1.
ASK A	requires input of value of A by the user. Input terminated by typing of a space.
TYPE A	type out value of A at user terminal.

Other possible arguments in ASK and TYPE statements are:

"TEXT"	type out text data
!	type carriage return, line feed combination
#	type carriage return only
$	type a space
%	format delimiter

e.g., TYPE ! "VALUE = " %8.2, A
results in:

VALUE = 65236.13