IF

PURPOSE
Define the start of a conditional block.

DESCRIPTION
If the condition is true, the following commands are executed until an END OF IF is reached. If the condition is false, these commands are skipped.

The following logical operators are recognized:

=	-	equal to
>	-	greater than
<	-	less than
<>	-	not equal to
>=	-	greater than or equal to
<=	-	less than or equal to
NOT EXIST	-	check if the parameter exists

SYNTAX
IF <exp1> <log> <exp2>

where <exp1> is a number or parameter;

<log> is a logical operator that is evaluated as being true or false;

and   <exp2> is a number or parameter.

EXAMPLES
IF A = B
IF A > 2
IF A < 2
IF A <> 2
IF A NOT EXIST
IF A >= 2
IF A <= 2

NOTE 1
IF commands can be nested to a level of 10 deep (this capability was added 92/11 so earlier versions do not work properly).

NOTE 2
IF blocks can be imbedded within LOOP blocks and LOOP blocks can be imbedded within IF blocks.

NOTE 3
The IF command has the following limitations.

1. There is no ELSE clause with this IF command.

2. Expressions are not allowed on the IF. The following code

IF A+B < 10

should be written as

LET C = A+B
IF C < 10

3. There is no way to branch out of an IF block from within the block. This is typically only an issue when IF and LOOP blocks are nested.

DEFAULT
None

SYNONYMS
None

RELATED COMMANDS

END OF IF	=	Terminate an IF block.
LOOP	=	Initiate a loop.

APPLICATIONS

Program control structure

IMPLEMENTATION DATE

Pre-1987

PROGRAM

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. Perform a non-parametric sign test for a paired sample.
. This test can be easily adapted to a one-sample hypothesis test
. that the mean (or median) is equal to a given value.
. Data from "Probability and Statistics for Engineers and
. Scientists" by Walpole and Myers (example 13.3 on page 483).
.
LET X1 = DATA 4.2 4.7 6.6 7.0 6.7 4.5 5.7 6.0 7.4 4.9 6.1 5.2
LET X2 = DATA 4.1 4.9 6.2 6.9 6.8 4.4 5.7 5.8 6.9 4.7 6.0 4.9
.
. Set D0 to constant you want to test against.
. That is D0 = 0 Tests U1 = U2 (or U1 - U2 = 0)
. while D0 = 5 tests U1 - U2 =5.
LET D0 = 0
.
LET DIFF = X1 - X2 - D0
LET N = SIZE DIFF SUBSET DIFF <> 0
LET RPLUS = SIZE DIFF SUBSET DIFF > 0
LET RMINUS = SIZE DIFF SUBSET DIFF < 0
LET R = MIN(RPLUS,RMINUS)
LET P =0.5
.
FEEDBACK OFF
LET ALPHA = 0.05
LET CRITICAL = BINPPF(ALPHA,0.5,N)
PRINT " "
PRINT "H0: U1 - U2 = ^D0"
PRINT "HA: U1 - U2 <> ^D0"
PRINT "SIGN STATISTIC = ^R"
PRINT "BINOMIAL CRITICAL VALUE = ^CRITICAL"
IF R >= CRITICAL
     PRINT "ACCEPT NULL HYPOTHESIS AT THE ^ALPHA SIGNIFICANCE LEVEL"
END OF IF
IF R < CRITICAL
      PRINT "REJECT NULL HYPOTHESIS AT THE ^ALPHA SIGNIFICANCE LEVEL"
END OF IF
```