Logical Control conditional statement has the following syntax.

IF (L) <operator>

In this expression: IF - conditional logical operator; L - logical expression; <operator> - one (just one!) operator performed (excluding operator conditional statements and loop control).

Boolean expression L can be variables, constants, functions, brackets and signs of arithmetic, logical operations, logical relationship. There can be a sign (operator) =. The result of a logical expression L calculation can only be a Boolean value LOGICAL. Boolean data type supports only two possible values: .TRUE. or .FALSE., that "truth" or "lie."

If one expression common arithmetic operations, logical operations and relations, they run on the following priorities: logic operation - the lowest priority ratio - medium priority, arithmetic operations - the highest priority.

Logical relationships that are used in logical terms, shown in table. 2.3 Logical operations - in the table. 2.4.

Table 2.3. Logical relationship

Mathematical notation	$\leq$	$<=$	$\neq$	$>$	$\geq$
FORTRAN 90	$<=$	$<=$	$/=$	$>$	$>=$
FORTRAN 77	.LE.	.LT.	.EQ.	.NE.	.GT. .GE.

Record FORTRAN 77 logical relationship in logical terms L occupy four positions. FORTRAN 90 contains as a subset of FORTRAN 77, so to ensure enhanced compatibility code sometimes convenient to use FORTRAN 77 syntax.

Table 2.4. Logical operations

Operation	Operator	Note
Objections ("no»)	.NOT.	Maximum priority unary operation
Conjunctions ("and»)	.AND.	Medium priority
Disjunction ("or»)	.OR.	Medium priority

Equivalence .EQV. Minimum priority

Non-equivalence .NEQV. Minimum priority

Jobs conditional logical operator control is as follows. According priorities logical expression calculated L. The result is the value .TRUE. or .FALSE .. If L = .TRUE., it runs one operator <operator> is set after the IF. If L = .FALSE., Then the operator is not satisfied - work program continues with following the IF-Boolean.

Example.

C The next entry operator W = 16.3 * sin (x) - always performed

IF (.TRUE.) W = 16.3 * sin (x)

Example.

G = 17.3

T = 38.6

C The next entry operator GOTO 10 - performed

IF (G .LE. T) GOTO 10

C The next entry operator STOP - is not fulfilled

IF (G-1.22 .EQ. T) STOP

Example. Make fragment programs for calculating the expression:

Y = 1.7 * X + 3.5

IF (X .GT. 3.8) Y = 5.9 * X ** 2 + 8.3

Example.

C operator Y = 12.7 * sin (X) - is performed when 17,5> X> 0,3

IF ((X .GT. 0.3) .AND. (X .LT. 17.5)) Y = 12.7 * sin (X)

The structure of Conditional logical operator management can not be changed.