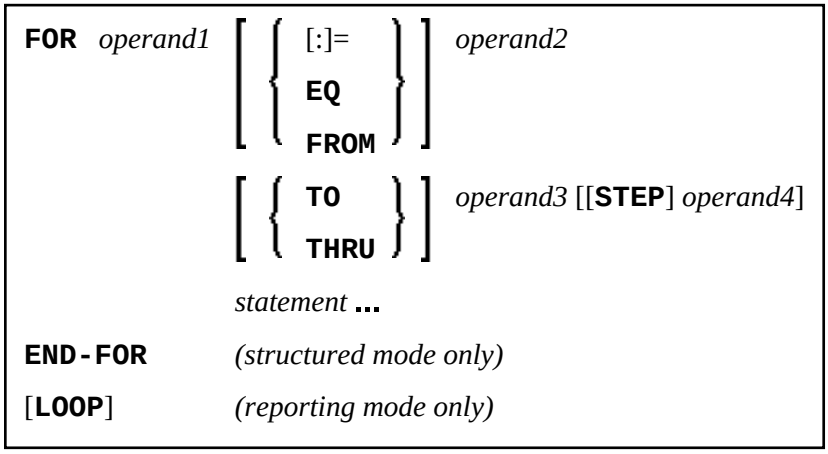
FOR



This chapter covers the following topics:

- Function
- Syntax Description
- Example

For an explanation of the symbols used in the syntax diagram, see *Syntax Symbols*.

Related Statements: REPEAT | ESCAPE

Belongs to Function Group: *Loop Execution*

Function

The FOR statement is used to initiate a processing loop and to control the number of times the loop is processed.

Consistency Check

Before the FOR loop is entered, the values of the operands are checked to ensure that they are consistent (that is, the value of *operand3* can be reached or exceeded by repeatedly adding *operand4* to *operand2*). If the values are not consistent, the FOR loop is not entered (however, no error message is output, except when the STEP value is zero).

Syntax Description

Operand Definition Table:

Operand	Possible Structure					Possible Formats											Referencing Permitted	Dynamic Definition
operand1		S					N	P	I	F							yes	yes
operand2	C	S			N		N	P	I	F							yes	no
operand3	C	S			N		N	P	I	F							yes	no
operand4	C	S			N		N	P	I	F							yes	no

Syntax Element Description:

operand1	**Loop Control Variable (*operand1*) and Initial Setting (*operand2*):** *operand1* is used to control the number of times the processing loop is to be executed. It may be a database field or a user-defined variable. The value specified after the keyword FROM (*operand2*) is assigned to the loop control variable field before the processing loop is entered for the first time. This value is incremented (or decremented if the STEP value is negative) using the value specified after the STEP keyword (*operand4*) each additional time the loop is processed. The loop control variable value may be referenced during the execution of the processing loop and will contain the current value of the loop control variable.
operand2	
operand3	**TO Value:** The processing loop is terminated when *operand1* is greater than (or less than if the initial value of the STEP value was negative) the value specified for *operand3*.
operand4	**STEP Value:** The STEP value may be positive or negative. If a STEP value is not specified, an increment of +1 is used. The compare operation will be adjusted to "less than" or "greater than" depending on the sign of the STEP value when the loop is entered for the first time. *operand4* must not be zero.
END-FOR	The Natural reserved word END-FOR must be used to end the FOR statement.

Example

```
** Example 'FOREX1S': FOR (structured mode)
************************************************************************
DEFINE DATA LOCAL
1 #INDEX (I1)
1 #ROOT  (N2.7)
END-DEFINE
*
FOR #INDEX 1 TO 5
  COMPUTE #ROOT = SQRT (#INDEX)
  WRITE NOTITLE '=' #INDEX 3X '=' #ROOT
END-FOR
*
SKIP 1
```

```
FOR #INDEX 1 TO 5 STEP 2
  COMPUTE #ROOT = SQRT (#INDEX)
  WRITE '=' #INDEX 3X '=' #ROOT
END-FOR
*
END
```

Output of Program FOREX1S:

```
#INDEX:    1   #ROOT:   1.0000000
#INDEX:    2   #ROOT:   1.4142135
#INDEX:    3   #ROOT:   1.7320508
#INDEX:    4   #ROOT:   2.0000000
#INDEX:    5   #ROOT:   2.2360679

#INDEX:    1   #ROOT:   1.0000000
#INDEX:    3   #ROOT:   1.7320508
#INDEX:    5   #ROOT:   2.2360679
```

Equivalent reporting-mode example: FOREX1R.