

Iteration

Count-controlled (FOR) loops (8.1.4 (c))

Count-controlled loops are written as follows:

```
FOR <identifier> ← <value1> TO <value2>
    <statements>
NEXT <identifier>
```

The identifier must be a variable of data type `INTEGER`, and the values should be expressions that evaluate to integers.

The variable is assigned each of the integer values from `value1` to `value2`, inclusive, running the statements inside the `FOR` loop after each assignment. If `value1 = value2`, the statements will be executed once, and if `value1 > value2`, the statements will not be executed.

An increment can be specified as follows:

```
FOR <identifier> ← <value1> TO <value2> STEP <increment>
    <statements>
NEXT <identifier>
```

The increment must be an expression that evaluates to an integer. In this case the `identifier` will be assigned the values from `value1` in successive increments of `increment` until it reaches `value2`. If it goes past `value2`, the loop terminates. The increment can be negative.

Example – nested FOR loops

```
Total ← 0
FOR Row ← 1 TO MaxRow
    RowTotal ← 0
    FOR Column ← 1 TO 10
        RowTotal ← RowTotal + Amount[Row, Column]
    NEXT Column
    OUTPUT "Total for Row ", Row, " is ", RowTotal
    Total ← Total + RowTotal
NEXT Row
OUTPUT "The grand total is ", Total
```