

Rutgers Learning Centers

At Camden Campus

PROGRAMMING: COMMON LANGUAGE STRUCTURES I

```
FOR x =1 to N
    do_some_processing
NEXT x
statement_executed_when_loop_is_finished
```

◇ The *iterative loop* (a FOR/NEXT loop is an example of an iterative loop) is executed a specific number of times, namely N times. N is an *integer*, which basically means a number without something after the decimal point. An example of an integer is 5; 5.89 is NOT an integer because of the "89" after the decimal point.

◇ Initially, the *loop counter variable*, x, is initialized to the first value after the equals (=) sign, which is not always one.

1. Each time through the loop, the loop counter variable is *incremented* (increased by one) after processing has been completed (at the "NEXT x" statement.)
2. A comparison is made between the value of x and the upper limit defined by N.
3. If the value of x is less than the value of N, the loop processing statements are executed.
4. When the value of x is greater than the value of N, the FOR/NEXT loop is no longer executed and control is transferred to the statement directly after the loop.

```
DO WHILE this_condition_is_true
    do_something
END DO
statement_executed_when_loop_is_complete
```

◇ This loop executes while the *condition* is true.

◇ This means that it is **possible that the statement will not execute at all**.

◇ The condition is tested first.

1. After each execution of the loop, the condition is tested.
2. Execution ends when the condition becomes false.
3. At the point, control is transferred to the statement directly following the loop.

```
DO
    do_something
UNTIL this_condition_is_true
statement_executed_when_loop_is_complete
```

◇ This loop executes **until** the given condition **becomes** true.

◇ This means that a DO/UNTIL loop will **always execute at least once**.

◇ The loop is always executed the first time.

1. The condition is tested at the bottom of the loop.
2. If it is still false, the loop is executed again.
3. If the condition is true, the loop is not executed again and control passes to the statement following the loop.

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