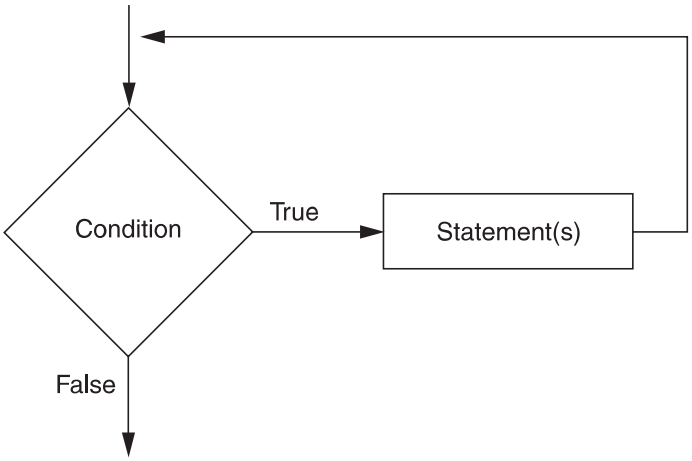
The While Loop

The While loop gets its name from the way it works: *While a condition is true, do some task*. The loop has two parts: (1) a condition that is tested for a true or false value, and (2) a statement or set of statements that is repeated as long as the condition is true. Figure 5-1 shows the logic of a While loop.

Figure 5-1 The logic of a While loop



VideoNote
The While Loop

The diamond symbol represents the condition that is tested. Notice what happens if the condition is true: one or more statements are executed and the program's execution flows back to the point just above the diamond symbol. The condition is tested again, and if it is true, the process repeats. If the condition is false, the program exits the loop. In a flowchart, you will always recognize a loop when you see a flow line going back to a previous part of the flowchart.

Writing a While Loop in Pseudocode

In pseudocode, we will use the While statement to write a While loop. Here is the general format of the While statement:

```
While condition
    statement
    statement
    etc.
End While
```

These statements are the body of the loop. They are repeated while the condition is true.

In the general format, the *condition* is a Boolean expression, and the statements that appear on the lines between the While and the End While clauses are called the *body of the loop*. When the loop executes, the *condition* is tested. If it is true, the statements that appear in the body of the loop are executed, and then the loop starts over. If the *condition* is false, the program exits the loop.

As shown in the general format, you should use the following conventions when you write a While statement:

- Make sure the While clause and the End While clause are aligned.
- Indent the statements in the body of the loop.