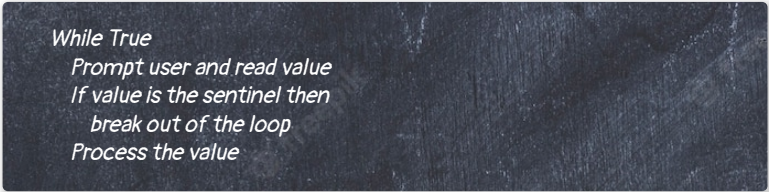


The Loop-and-a-half Pattern

The **loop-and-a-half** is a kind of loop that is available in some language (like Ada's **Exit When**), but which must be simulated in C and C++, by using **if** and **break**. This is another way to write a sentinel loop.

- Write an endless loop (or a **while** loop with a necessary condition).
- Add in **if** statement inside the loop which checks the **sentinel**.
- If you find the sentinel, use **break**, which has the effect of immediately terminating the nearest enclosing loop.

The loop-and-a-half pattern has the advantage that it **follows the natural structure**: the **read-until-sentinel** pattern:



*While True
Prompt user and read value
If value is the sentinel then
break out of the loop
Process the value*

Note that this is an endless loop, where the only way to exit is by executing the **break** statement. Here's the same problem as on the previous page, using the **loop-an-a-half pattern**. You may want to look back and compare them.

```
while (true)                // Endless loop
{
    cout << "> ";           // Prompt and read item
    cin >> value;
    if (value == 0) { break; } // Sentinel? Leave loop
    total += value;           // No sentinel? Process
}
```



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