The Primed Loop Pattern

The **primed-loop pattern** is named after the old-west water pump which required users to pour water down the well to establish suction, before pumping began.

Here's what that looks like in pseudocode:

> *Prompt user and read in a value*
> *While the value is not the sentinel*
> *   Process the data value*
> *   Prompt user and read next value*

This is the **classic way** to process sentinel data. The code used to read each data value is **duplicated, before the loop and at the end of the loop**.

Here's a **primed-sentinel-loop** that sums a sequence, using **0** as the sentinel:

```cpp
cout << "Add integers. Enter 0 when done." << endl;

int total = 0, value = -1;
cout << "> ";
cin >> value;              // Read before the Loop
while (value != 0)         // Check for the sentinel
{
    total += value;        // No sentinel? Process
    cout << "> ";          // Prompt and read next item
    cin >> value;
}
cout << "Total: " << total << endl;
```