chan in1(int), in2(int), out(int);

process Merge {
    int v1, v2;
    receive in1(v1);  # get first two input values
    receive in2(v2);
    # send smaller value to output channel and repeat
    while (v1 != EOS and v2 != EOS) {
        if (v1 <= v2)
            { send out(v1); receive in1(v1); }  
        else  # (v2 < v1)
            { send out(v2); receive in2(v2); }  
    }
    # consume the rest of the non-empty input channel
    if (v1 == EOS)
        while (v2 != EOS)
            { send out(v2); receive in2(v2); }
    else  # (v2 == EOS)
        while (v1 != EOS)
            { send out(v1); receive in1(v1); }
    # append a sentinel to the output channel
    send out(EOS);
}

Figure 7.2  A filter process that merges two input streams.

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