

```

typeT buf;      /* a buffer of some type T */
sem empty = 1, full = 0;
process Producer[i = 1 to M] {
    while (true) {
        ...
        /* produce data, then deposit it in the buffer */
        P(empty);
        buf = data;
        V(full);
    }
}
process Consumer[j = 1 to N] {
    while (true) {
        /* fetch result, then consume it */
        P(full);
        result = buf;
        V(empty);
        ...
    }
}

```

Figure 4.3 Producers and consumers using semaphores.