```c
#define N 100  /* number of slots in the buffer */
void producer(void)
{
    int item;
    message m;                      /* message buffer */
    while (TRUE) {
        item = produce_item();      /* generate something to put in buffer */
        receive(consumer, &m);      /* wait for an empty to arrive */
        build_message(&m, item);    /* construct a message to send */
        send(consumer, &m);         /* send item to consumer */
    }
}

void consumer(void)
{
    int item, i;
    message m;
    for (i=0; i<N; i++) send(producer, &m);  /* send N empties */
    while (TRUE) {
        receive(producer, &m);      /* get message containing item */
        item = extract_item(&m);    /* extract item from message */
        send(producer, &m);         /* send back empty reply */
        consume_item(item);         /* do something with the item */
    }
}
```