```
monitor Bounded_Buffer {
  typeT buf[n];       # an array of some type T
  int front = 0,      # index of first full slot
      rear = 0;       # index of first empty slot
      count = 0;      # number of full slots
  ## rear == (front + count) % n
  cond not_full,      # signaled when count < n
       not_empty;     # signaled when count > 0

  procedure deposit(typeT data) {
    while (count == n) wait(not_full);
    buf[rear] = data; rear = (rear+1) % n; count++;
    signal(not_empty);
  }

  procedure fetch(typeT &result) {
    while (count == 0) wait(not_empty);
    result = buf[front]; front = (front+1) % n; count--;
    signal(not_full);
  }
}
```

Figure 5.4 Monitor implementation of a bounded buffer.

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