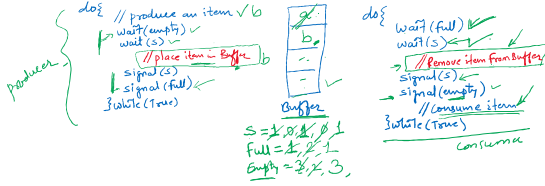


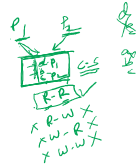
Solution to produce-consumer problem

Initialization of Semaphores

- ✓  $S = 1$  // Binary semaphore
- ✓  $full = 0$  // Initially all slots in empty. Thus full slots is 0.
- ✓  $empty = N$  // Initially all slots is empty

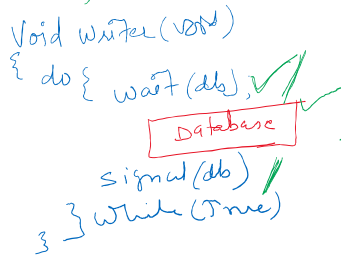
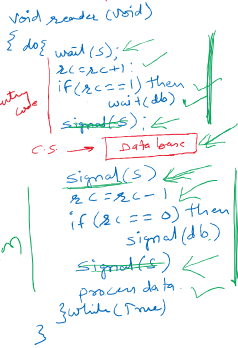


Reader-Writer Problem



Initialization

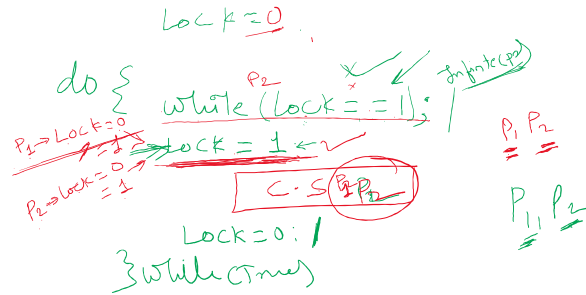
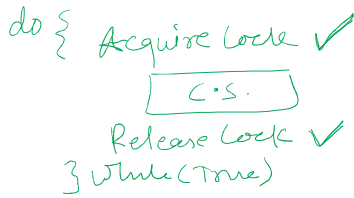
- ✓  $rc = 0$
- ✓ Semaphore  $S = 1$
- ✓ Semaphore  $db = 1$



- ✓  $rc = 0, 1, 2$
- ✓  $S = 1, 0, 1$
- ✓  $db = 1, 0, 1$

- ✓ R-W 1
- ✓ W-R 1
- ✓ W-W 1
- ✓ R-R 2

Lock Variables



Does not ensure Mutual Exclusion

User mode