```
//
// THIS IS PSEUDO-CODE
//

sem_init(sem_t *s, int initvalue) {
    s->value = initvalue;
}

sem_wait(sem_t *s) {
    while (s->value <= 0)
        put_self_to_sleep();         // put self to sleep
    s->value--;
}

sem_post(sem_t *s) {
    s->value++;
    wake_one_waiting_thread(); // if there is one
}

//
// IMPORTANT: each is done atomically
// (i.e., body of post() and wait() are critical sections)
//
```