## A very bad implementation of a lock

```
struct lock {
}

void acquire (lock) {
    disable_interrupts();
}

void release (lock) {
    enable_interrupts();
}
```

- → Disabling interrupts blocks notification of external events that could trigger a context switch
- Can miss or delay important events
- The thread is no longer preemptive

```
struct lock {
    int held = 0;
    queue Q;
void acquire (lock) {
     disable interrupts();
     while (lock->held) {
         enqueue (lock->Q, current thread);
         thread block (current thread);
     lock->held = 1;
     enable interrupts();
void release (lock) {
    disable interrupts();
    if (!isEmpty(lock->Q)) {
       thread unblock (dequeue (lock->Q));
    lock->held = 0;
    enable interrupts();
```

## Native Lock Implementation