

# Implementing synchronization constructs

Two approaches :

- Either implement locks first (Linux approach)  
and build semaphores and condition variable on the top
  - ➡ Linux has two versions
    - Spinlock (non-blocking)
    - Mutex (blocking)
- Or implement semaphores first (Pintos approach)  
and build locks and condition variable on top
  - ➡ Pintos approach

## (bad) implementation of a spin lock

```
struct lock {  
    int held = 0;  
}  
  
void acquire (lock) {  
    while (lock->held);  
    lock->held = 1;  
}  
  
void release (lock) {  
    lock->held = 0;  
}
```