```
mutex_t   lock;   // declare a lock
cond_t    cv;     // declare a condition variable
```

a **condition variable** (CV) is:
- queue of waiting threads

a single **lock** is associated with each CV
- see below for usage

There are two main operations that are important for CVs:

wait (cond_t *cv, mutex_t *lock)
- assumes the lock is held when wait() is called
- puts caller to sleep + releases the lock (atomically)
- when awoken, reacquires lock before returning

signal (cond_t *cv)
- wake a single waiting thread (if >= 1 thread is waiting)
- if there is no waiting thread, just return w/o doing anything

A CV is usually **PAIRED** with some kind **state variable**
- e.g., integer (which indicates the state of the system
                 that we're interested in)

```
int       state; // related "state" variable (could be an int)
```