CS314: Lecture Note (Lecture #17, March 15, 2024)

1. Ask students to come forward and pick up:
   - Attendance card

2. Announcements:
   - Quiz #7 is scheduled on March 14th (Thursday) after the spring break

3. Quiz #7 Preview

4. Project #2
   - thread synchronization
   - interrupt and interrupt handler
   - The essential system/library calls for Project #2:
     I. Thread (pthread)
        (a) `pthread_create`: create a new thread
     II. Interrupt handler (for your user-defined thread scheduler)
        (a) `signal` (for “SIGALRM” interrupt code)
        (b) `alarm`
     III. pthread mutex variables
        (a) `pthread_mutex_init`: initialize a pthread-semaphore
        (b) `pthread_mutex_lock`: the “wait” operation for a pthread-semaphore for processes
        (c) `pthread_mutex_unlock`: the “signal” operation for a pthread-semaphore for processes
     IV. pthread conditional variables
        (a) `pthread_cond_init`: initialize a condition-variable
        (b) `pthread_cond_wait`:
        (c) `pthreadCondSignal`:
        (d) `pthreadCondDestroy`: delete a condition-variable
   - Suggested references
     - https://www.cs.cmu.edu/afs/cs/academic/class/15492-f07/www/pthreads.html
     - https://docs.oracle.com/cd/E19455-01/806-5257/6je9h032r/index.html