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 "sugnal" operation for a pthread-semaphore for processes

     IV. pthread conditional variables

        (a) *pthread_cond_init*: initialize a condition-variable
        (b) **pthread_cond_wait**:
        (c) *pthared_cond_signal*:
        (d) *pthread_cond_destroy*: 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