

# 15-410

*“...misbehave(7)...”*

Project 2  
Feb. 4, 2004

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# Synchronization

## P2 (et seq.) partners

- “Partner Registration Page” on web site
- 17 groups have already registered - Thanks!
- If you know, *please register today*
  - This will help people still looking for partners

## Good things to talk about

- How many late days?
- Project *schedule* in other classes
  - *Write down* a joint project schedule
- Auditing or pass/fail? Target 410 grade?
- Prior experience

# Outline

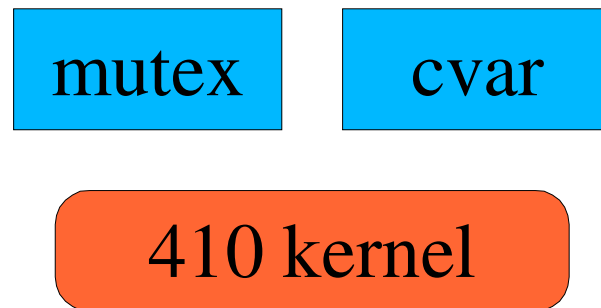
## What you'll build

- Mutex, condition variable
- Thread library
- Supplemental library routines
- Tests

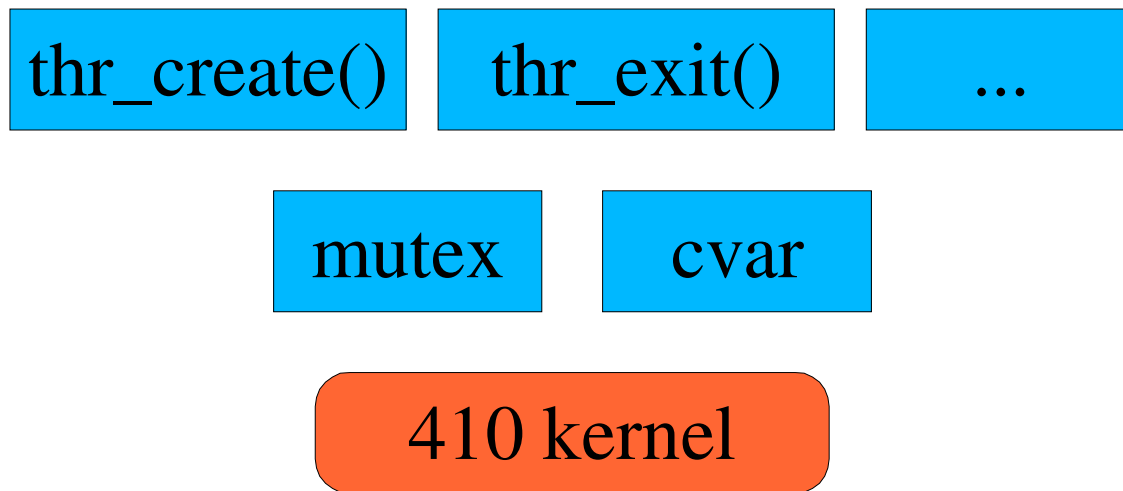
## How the pieces fit together

- A picture is worth 1000 words
- You'll need to read the handouts too
  - (two, each >1000 words)
  - kspec – specifies our kernel for P2, your kernel for P3
  - thr\_lib – specifies thread library

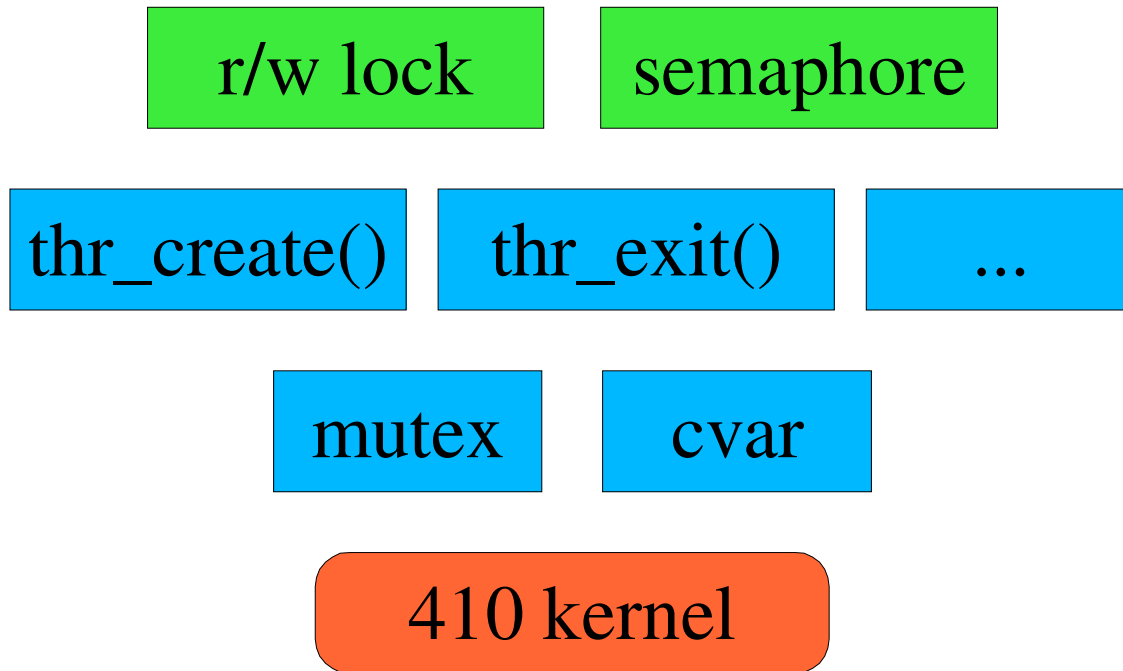
# Mutex & Condition Variable



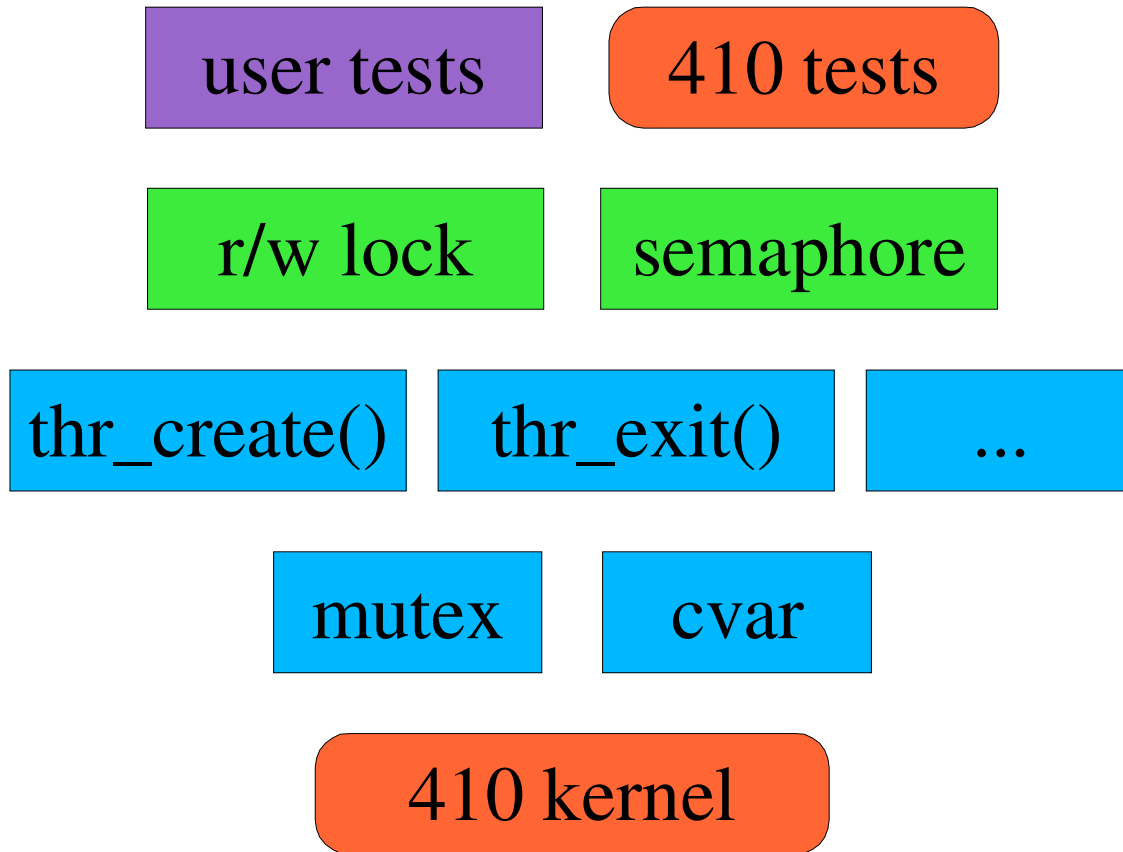
# Remainder of Thread Library



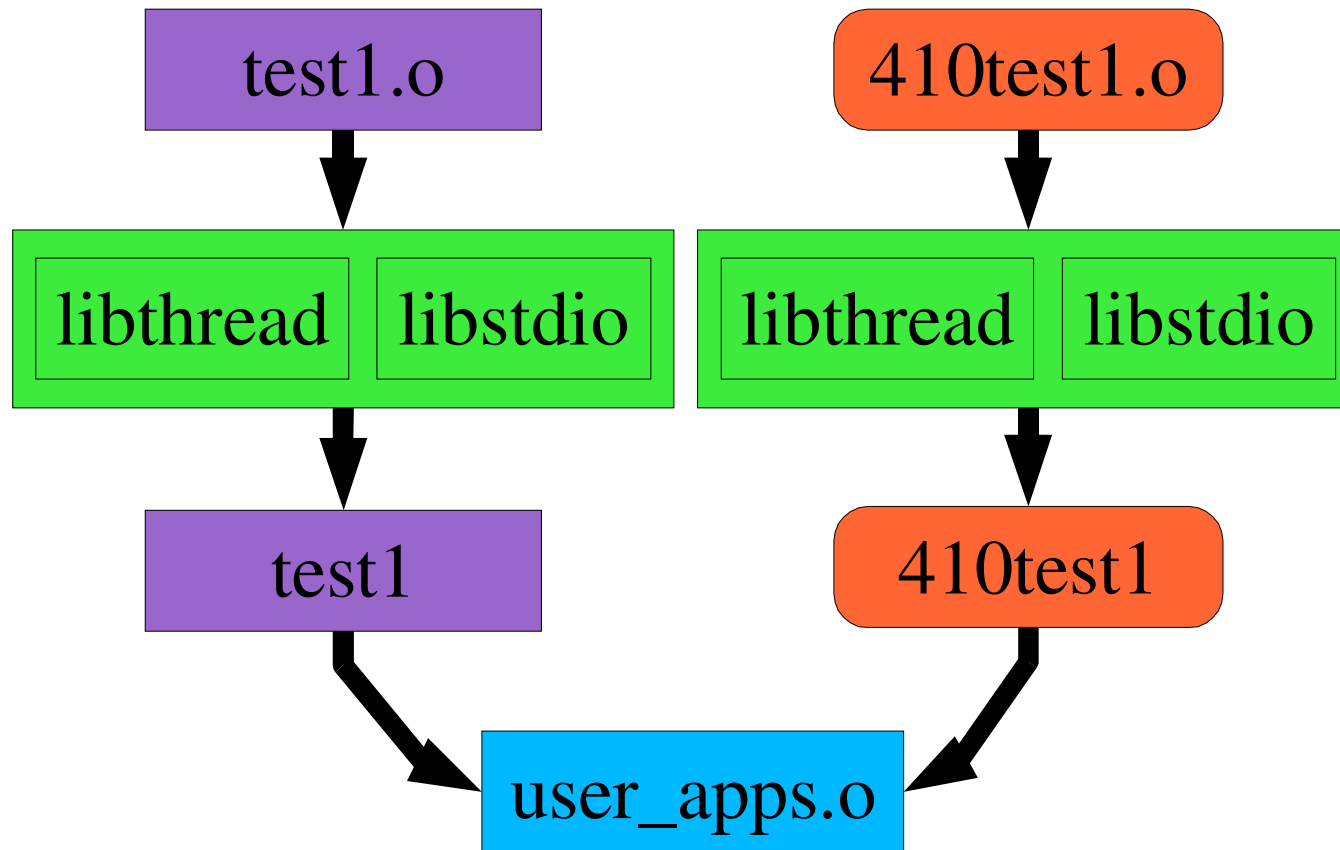
# Supplemental Library Routines



# Tests (Yours & Ours)

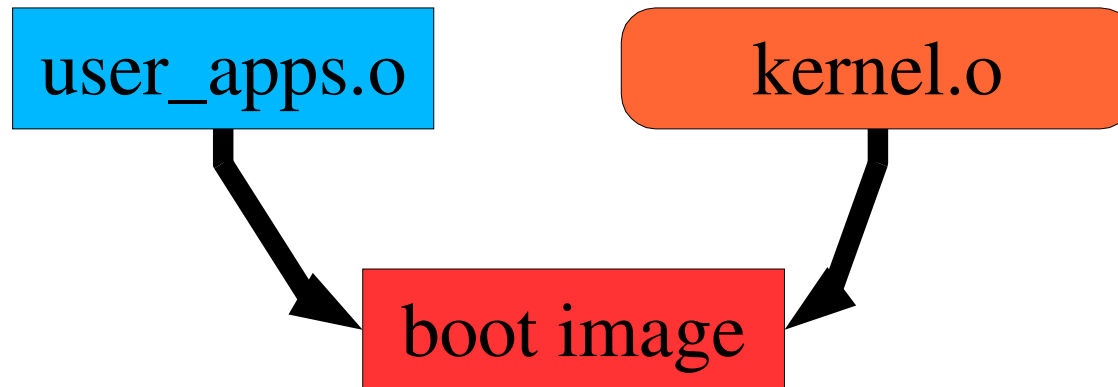


# Building a “RAM disk” image





# Linking “RAM disk” to kernel



# The “Misbehave” System Call

## **misbehave(int mode)**

- Special debugging-support system call in our 410 kernel
- Adjusts behavior of system
  - Multiple legal behaviors (you will feel this during P3)
  - Each mode selects a particular mix
    - We will not document these
    - We expect you to not document them either
- Debug your thread library with one mode, then the next...
  - A dazzling array of flavors
    - 0...15
    - -1
- You will not be required to implement misbehave() in P3

# Plea

**This code is *tricky***

- Most of you have already written multi-threaded code
  - That can be tricky enough
- Writing the internals is harder
  - Get a part 99% done
  - Discover a bug
  - *Totally new design* to fix it

**The first 90% will take the first 90% of the time**

- The last 10% will take the *second 90% of the time*