CS 170 Week 3

Winter 2026

https://sites.cs.ucsb.edu/~rich/class/cs170/

Agenda

1. Lab1 README Announcement
2. Semaphores
3. KOS kthreads library
4. KOS overview
    a. How it all fits together (kthreads + semaphores)
    b. Exception/interrupt mechanism
    c. KOS execution flow (kernel/OS space vs Userspace)
    d. KOS main_memory layout (loading user processes quirks)
5. Building KOS and xcompile MIP R3000 programs

Hopefully the last update for future submissions...

For Lab 1 onwards, we would like all submissions to have a README.

In the README, write:

- The names of your group members
- A link to your repository with a commit hash of the code for your submission.

Example:
https://github.com/ucsb/cs170-fun-project/commit/e941184d2071265b3567ac79a79b51115d9763b7

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For submission: upload files as normal: Direct upload / GitHub upload

Recommend direct upload so the autograder can find your submission files.

Relevant course webpages

KOS Overview:
https://sites.cs.ucsb.edu/~rich/class/cs170/notes/IntroKOS/index.html

Some tools in your toolkit:

Semaphores:
https://sites.cs.ucsb.edu/~rich/class/cs170/notes/Semaphores/index.html

Kthreads: https://sites.cs.ucsb.edu/~rich/class/cs170/notes/Kthreads/index.html

Review....

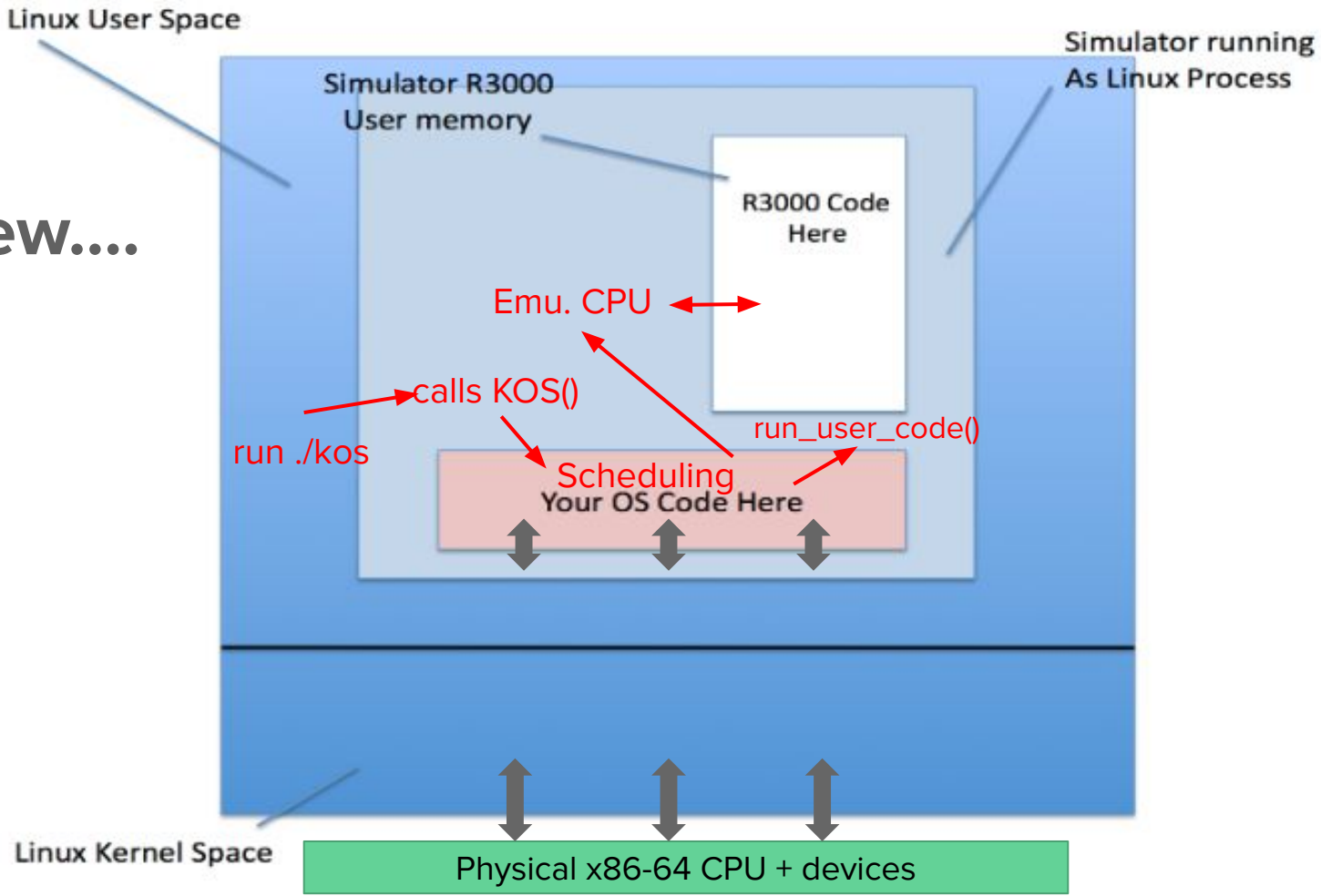

Image: https://sites.cs.ucsb.edu/~rich/class/cs170/notes/IntroKOS/index.html

Questions and debug time!