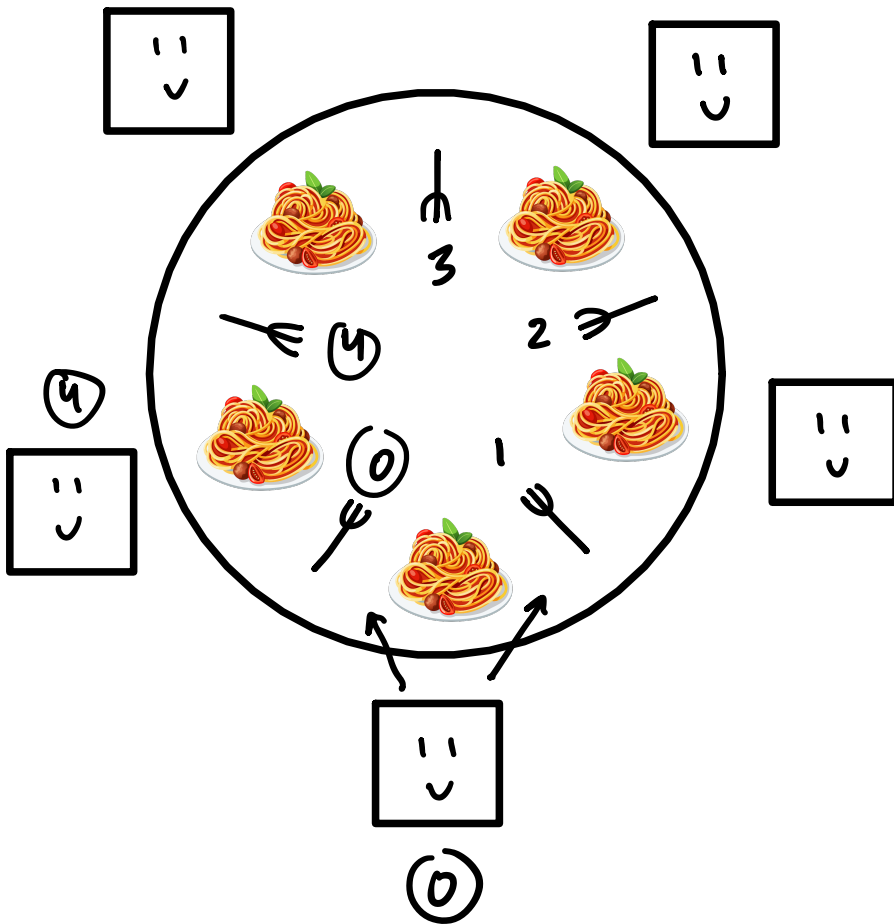


Lecture 11

Wednesday, July 28, 2021

2:43 AM

Dining Philosophers



$\left[\begin{array}{l} \text{think} \\ \text{eat} \end{array} \right] \times 3$

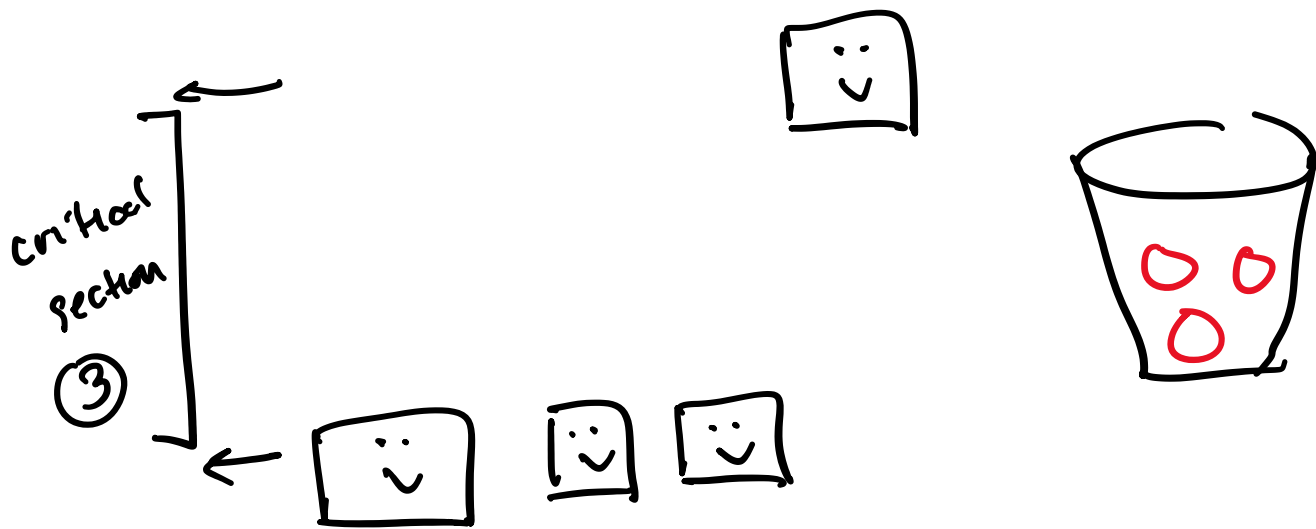
↳ pick left fork
right fork

↳ drop left fork
right fork

deadlock → all 5
threads pick up
left fork

Semaphores → bucket of balls

Mutexes → lock

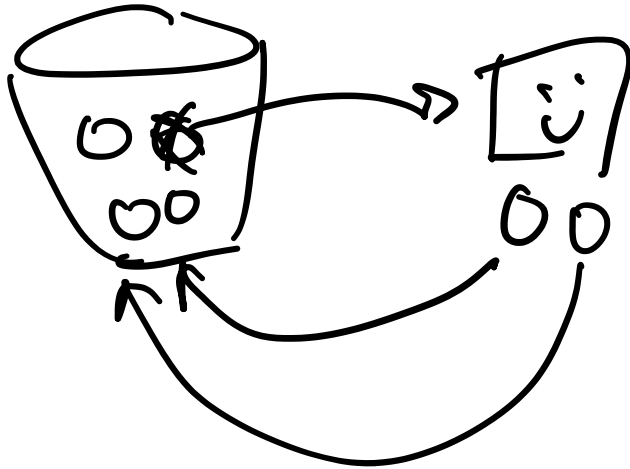


wait()

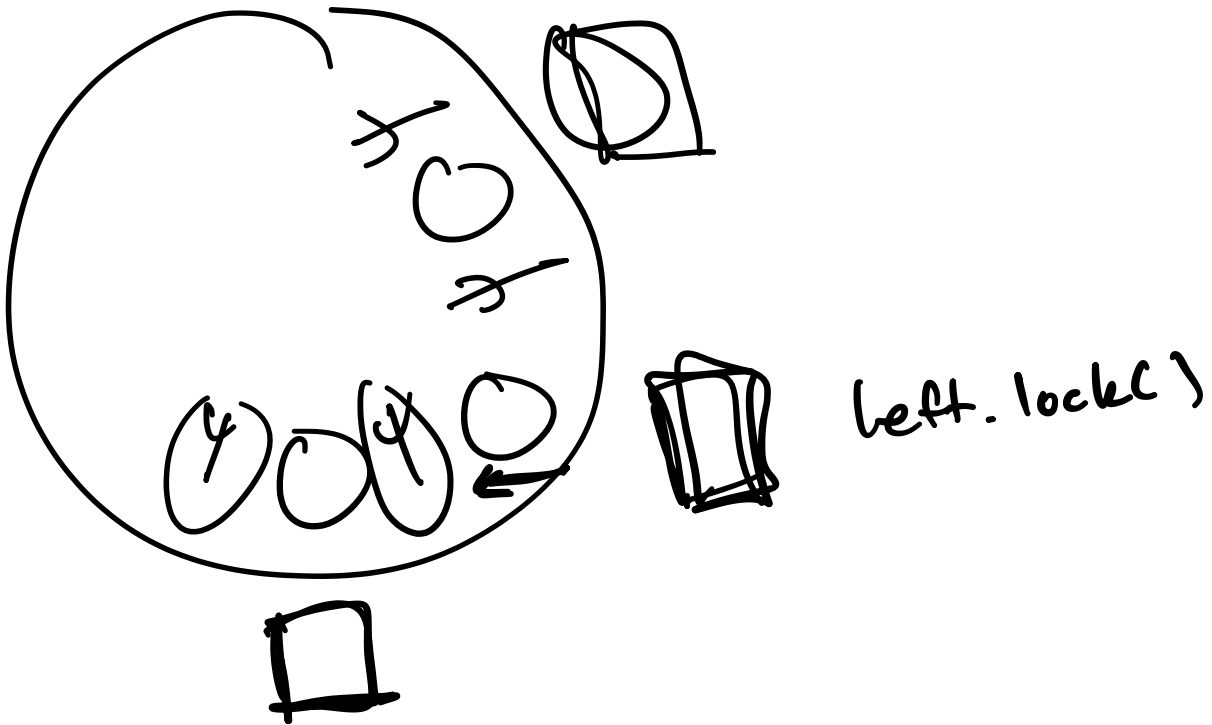
- if already in bucket
 - ↳ take a ball, immediately move on
- if no balls in bucket
 - ↳ wait until ball becomes available, take ball, move on

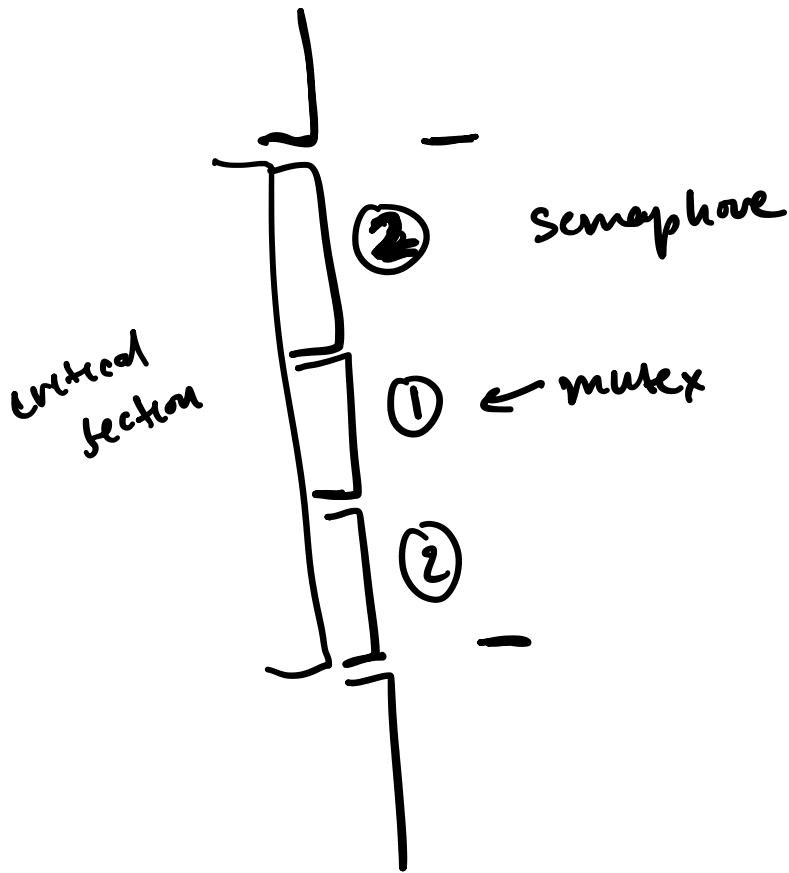
Signal()

- adding ball to bucket
- never blocking
- automatically wakes up all threads on wait()

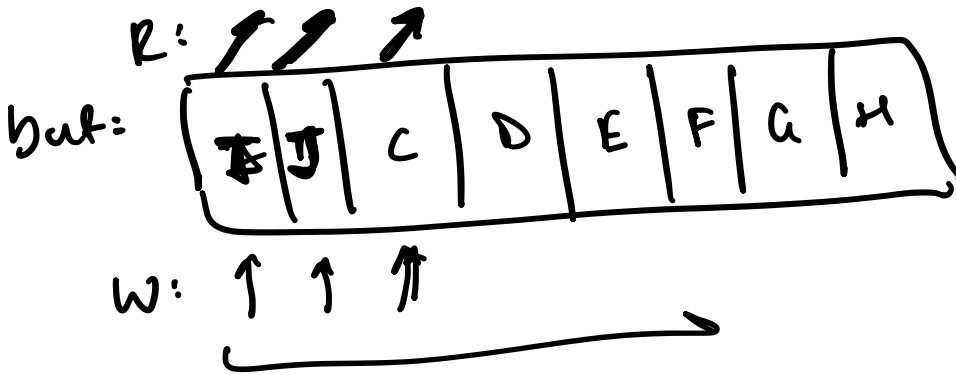


Dining Philosophers (w/ Semaphores)





Producer - Consumer



- ✓ W overwrites bytes that R hasn't read → empty Bytes
- ✓ R reading garbage bytes → full Bytes

