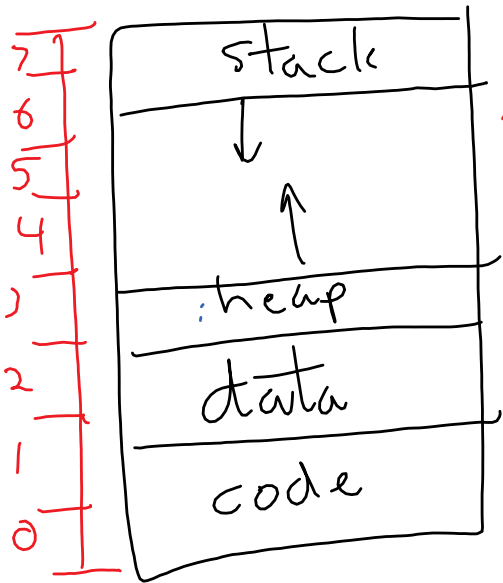
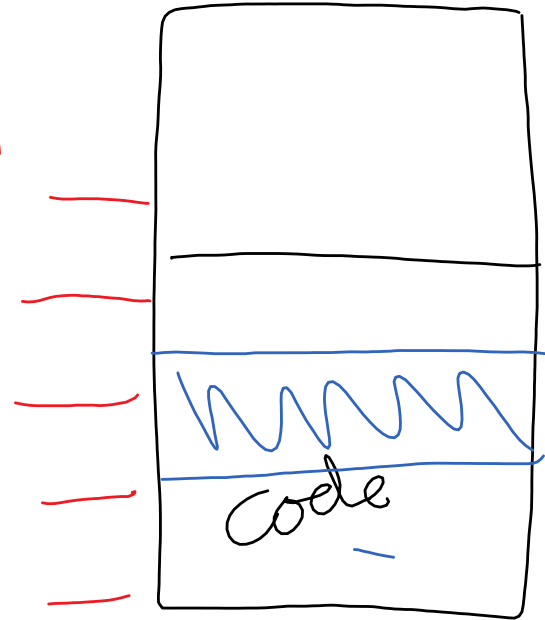


# Virtual Memory



no physical  
addr. until  
needed

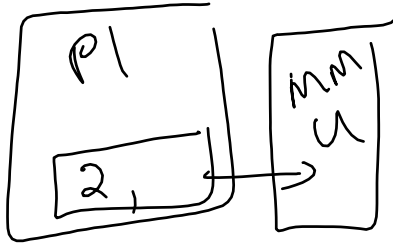


# Demand Paging

Backing Store  
(swap space)

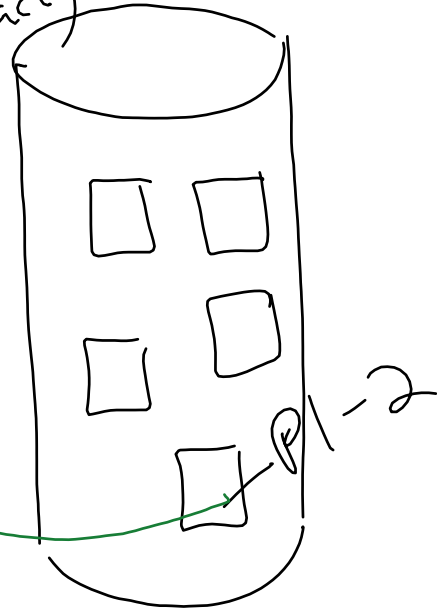
Main Mem

CPU



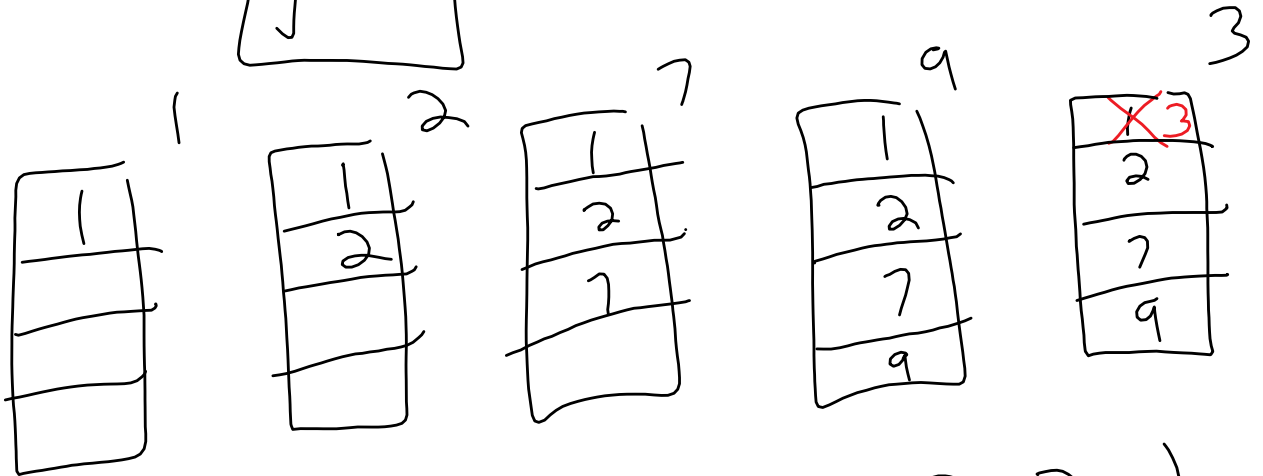
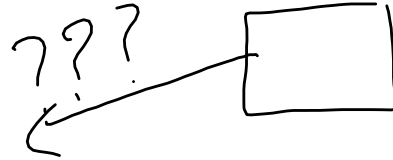
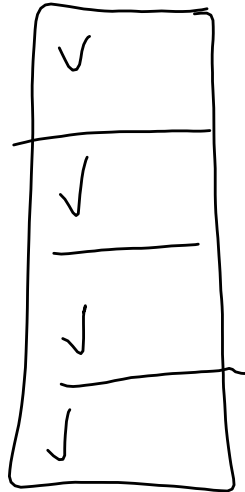
P0-0
P1-0
P1-2
P0-1
P0-3
P2-0
P0-2
P1-1

page fault



# Page Replacement

F.I.F.O.



ref: 1 1 1 2 7 1 9 2 1 3

next?  
4  
7  
1

# Review: no Ch 9

## Semaphore

wait  
signal

} atomic

## Monitors

Java synchronize.

lock an object

critical section - all synch.  
methods

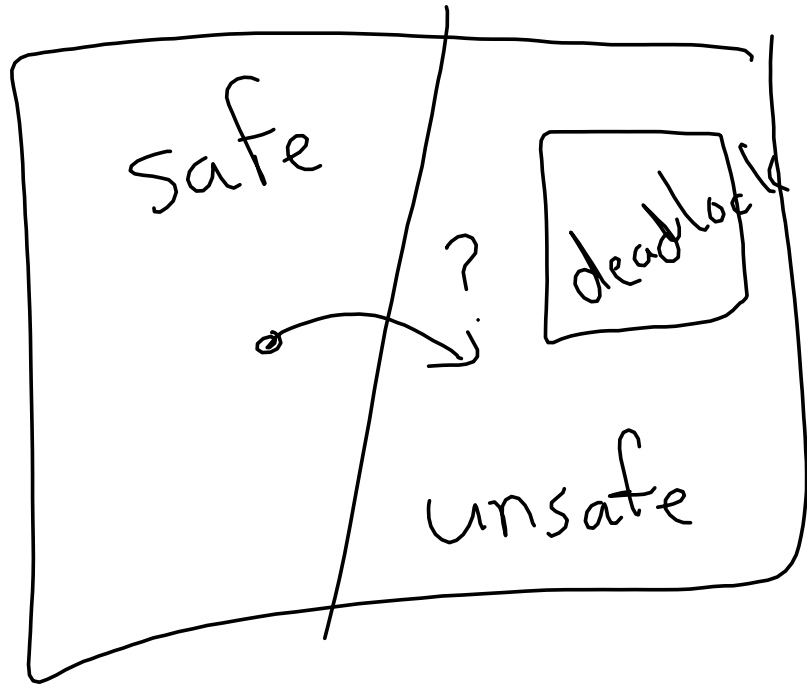
## Hardware

Test and set

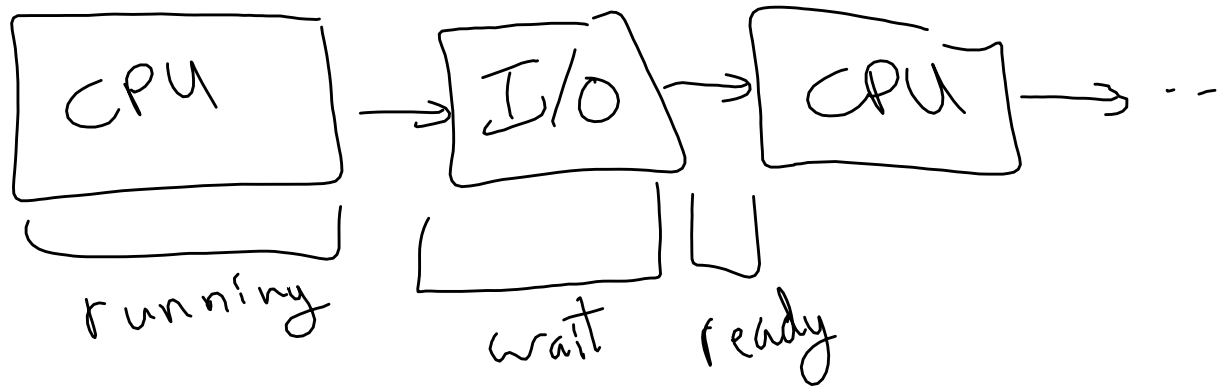
Compare and swap

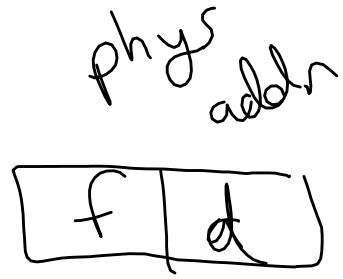
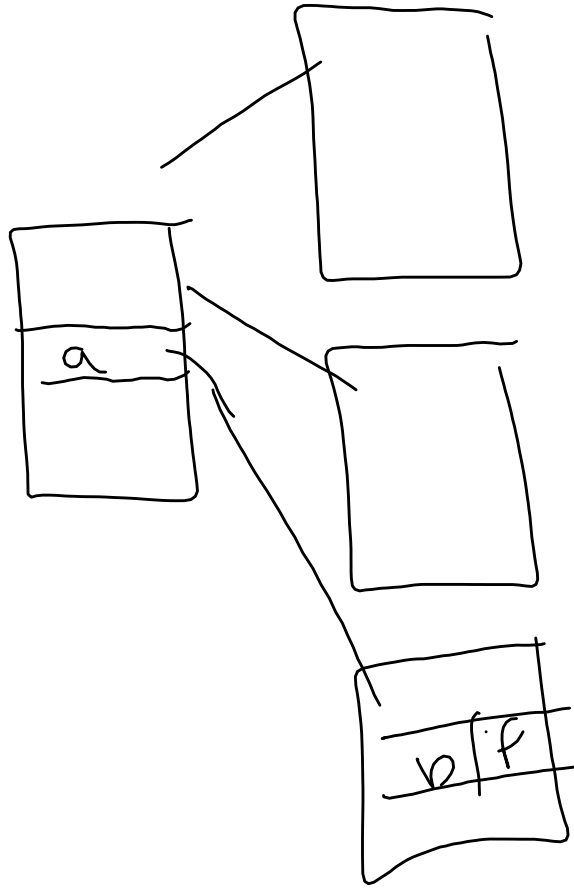
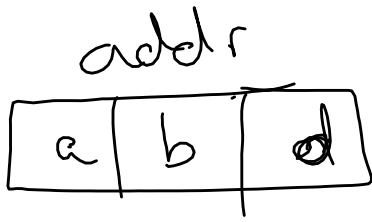
} atomic  
CPU instruct.

# Deadlock - safe states



# CPU Bursts





Tuesday, March 29, 2016  
2:14 PM

