Home Work 2

Page Table Entry

- Page #
- Present Bit

You just need 20 bits to get the start of the page table.

Struct Pde

- bool present
- int page no.

3 pd[1024]

Struct Pdt

- bool present
- int page no.

3 pt[1024]

root = CR3
Midterm:

Hardware:
- Memory maps
- OS interfaces
  - User supervisor mode - no tampering of the OS files [operations]
  - I/O devices
    - Keyboard & Screen - I/O
  - Context switching

Synchronization:
- Mutexes
- Semaphores
- Monitors - each process locks & waits on mutex

Classic problems:
- Bounded buffer
- Pthread & Java monitors

\[
\text{mutex-lock}(m) \rightarrow \ \text{mutex-unlock}(m)
\]

Monitors
- User-defined object
- Fields - normal condition
- Methods
  - Condition ops: wait, signal, broadcast
enter: calling method
   return from wait

leave: return from method
call wait

HW 2

Virtual Memory
- page tables - address translations
- TLB
- page faults - options
  - Kill process
  - Demand allocate
  - Demand fault
  - Copy-on-write

Shared Memory
- Fragmentation

No virtual machine

4 problems in mid-term

1 from section & 1 a mix