ECE 391 Discussion Week 13

Announcements & Reminders

- MP3.5 demo is on Monday (Dec 10th) at 5pm

  - Note the time change!

- Final demo will start after MP 3.5 demo

  - Time slots (30 min) will be posted on Piazza by the end of this week

  - Duplicate signups will be deleted

- Final exam on Friday (Dec 14th) at 8-11am

  - No conflict exam

MP3.5 Multiple Terminals

- u Support 3 terminals (ALT+F# to switch between)
  - u Initial bootup method: have all 3 terminals running shell
  - u After bootup method: first time you press ALT+F2/ALT+F3, boot up terminal 2/3
  - u Should be able to switch as fast as possible – no crashing!
- u Support at least 6 processes total
  - u How to manage 6 processes? Up to you…
  - u Don't crash or page fault on the 7th

MP3.5 Multiple Terminals

u Separate input buffer per terminal, save current text screen/cursor position/anything relevant to your OS

u Exiting any shell does not exit other shells

u Exiting last shell: re-launch shell or prevent last one from being halted

MP3.5 Scheduling

- Fixed/equal time slices with round-robin

- Use PIT (not RTC…why?)

- When typing, the characters should appear on the visible terminal (not the scheduled terminal)

- Test with counter, pingpong, fish

- Be mindful of timing/synchronization issues

MP3.5 Scheduling

- u Utilize the kernel stack (think about what you did for HALT
  - u Again you will be using assembly to do the context switch
  - u Switch ESP/EBP to next process' kernel stack
  - u Restore next process' TSS
  - u Flush TLB on process switch

kernel stack:

ESP →

sched()'s
stack frame

EBP →

general
registers

interrupt
context
(will be used
by IRET)