ECE 391 Discussion Week 12

Announcements & Reminders

- MP3.4 due the **Tuesday** after break (November 27) at 6pm
- 4 weeks left (including break)
- CP4 and CP5 Gradesheets and Final Demo Gradesheet will be posted today
- Extra Credit Demo/Final Competition is on reading day

MP3.4: Finish Syscall Implementation

1. Halt
2. Execute
3. Read
4. Write
5. Open
6. Close

Done/fix bugs

7. Getargs
8. Vidmap

To do

9. Set_handler
10. Sigreturn

Optional (for signals)

MP3.4: New Syscalls Quiz

```
int32_t getargs ( ?? );
```

- What is buf?
- What is nbytes?
- What does getargs do?

```
int32_t vidmap ( ?? );
```

- What is screen_start?
- What does vidmap do?

MP3.4: Tips

- Fix all bugs you might have
  - Small bugs will cause you big trouble in MP3.5
- Make sure all the user level programs listed below works
  - testprint/hello/counter – terminal read/write
  - syserr – bad system calls
  - ls – open directory
  - cat – open/read files and also use get_args()
  - grep – open/close all files
  - pingpong –RTC
  - fish – vidmap, RTC, open/read files

MP3.4: given executables

- Read the source! You must understand how each works for efficient testing/debugging
- Summary:
  - testprint/hello/counter – all print to the terminal
    - Hello also does a read, counter runs for a long time
  - syserr – series of malformed system calls
    - Your kernel should handle these “gracefully” and pass the tests
  - ls, cat, grep – do what they do in Linux, minus the bells and whistles
  - pingpong – runs forever (might want to have a ctrl-c functionality)
  - fish – animated fish (only executable using vidmap)
    - Multi-block executable..

Task State Segment (TSS) and Halt

- One TSS per CPU
- GDT stores a pointer to the TSS
- TSS contains all task-specific information (ss0/esp0)
  - ss0 and esp0 are used when moving from user to kernel space
  - ss0 = KERNEL_DS
  - esp0 = Start of this process's kernel stack
  - Save original value in PCB
- Find TSS details in Intel manual Vol.3
- In the halt system call, remember to close/cleanup open file descriptors

Have a nice break!