

CSCI2467: Systems Programming Concepts

1st shell lab demo: Friday March 13

Spring 2020



THE UNIVERSITY *of*
NEW ORLEANS

DEPARTMENT OF
COMPUTER SCIENCE

- Two due dates! Two!
- First due date is Friday March 13
- First due date only requires bare minimum of functionality
- . . . described on next slide



Your demo: Friday March 13

- Show `eval()` **working** on the four simple commands below (however this will not be your final version)
- Can your shell run simple programs?

tsh> ./nonexistent

(`execve` returns negative value, must be caught and print appropriate error message)

tsh> /bin/ls

(list directory content)

tsh> /bin/ps

(ps output)

tsh> /bin/ls -l

(long ls output)



- Start `eval()` with:

```
bg = parseline(cmdline, argv);
```

- but before that, must declare variable names:

```
int bg; and char *argv[MAXARGS];
```

- No need to `strcpy()` in `eval`

- In lieu of `Fork()` (capital F):

See slide "System call error handling" (45) for example of calling `fork()` which checks for error (-1)

- After checking `fork()` for error case (< 0), do the parent/child split

(result of `fork` was saved in `pid`)

Use `if(pid == 0)` to begin child's code

What to expect at the demo

- We have many students, so we need to do this quickly
Let us know now if you have schedule issues for March 13
- Does your shell actually **run** other programs?
- Rough sketch of steps:
 - `parseline(cmdline, argv)`
 - `fork()` and check for error (< 0)
 - `if (pid == 0)` to begin child-only code
 - `execve(argv[0], argv, environ)`
(either executes, or prints “not found” error message)

Bottom line

not so bad!

- On or before Thursday 3:30pm: submit your `tsh.c` to Autolab under **Shell Lab demo**
- How does this work? Autolab runs the four commands on your shell, and also on `tshref`. If output matches, you're ok. (This is similar to how the final tests work)
- Take this seriously! 10 points is a lot (if autolab says 0 points, this is **good**. -10 is **bad**.)

The good news:

- Can be done in 10-20 lines of code, all in `eval()` function
- Correctness tests (make `test05` and `checktsh.pl`) will come later, these are used to determine the remaining points (second deadline)

- Starting March 15, we will have our classes online.
- Follow this link to watch/participate live
<http://2467.cs.uno.edu/remote.html>