Assignment 0320

Now that you’ve gone past the major “baptism of fire” that is building and modifying an operating system kernel, we move on with some programming in the process and threads realm.

Outcomes

This assignment will affect your proficiency measures for outcomes 1c, 2e, 3c, 3d, and 4a–4f.

Not for Submission

SGG Chapters 3 and 4 constitute the supplementary reading that will be covered next.

For Submission

A Shell of Your Own

Implement your own command-line operating system shell. You may extend the fork-exec sample program or start from scratch.

In addition to the basic command prompt loop for entering a command then executing it (including its arguments), implement the following two features:

• Let a command ending with & run concurrently with the shell (i.e., just like bash).

• Make sure that the cd command works correctly.

• Add an “easter egg” to your shell so that, if the user types secret-system-call, it invokes the system call that you added to the kernel in Assignment 0308.

Commit and push your code to your git repository under homework/myshell.

Your Shell as Default

Look up/figure out how to make your new shell the default shell of your Ubuntu virtual machine. Create a my.cs.lmu.edu web page that documents, in step-by-step, how-to fashion, the process for installing and setting your new shell.

Points to Ponder

Answer the following questions:

1. Why did the cd command get special mention in this assignment?

2. Can your shell run scripts? Why or why not?

3. Does Ctrl-D exit your shell? Why or why not?

Commit and push your answers to your git repository as a file in some widely-readable document format within the homework/myshell directory.