CSE 4733/6733 Programming Assignment – Phase I

Fall 2016

Objective

Learn the concepts of the life-cycle of UNIX processes and inter-process communication.

Description

1) Write a basic UNIX shell in C that reads and processes commands. IE. `who`
`or ls -l`

`or ls -l > tempfile`

`sample commands: top,ls,w,top,uptime,cal,date,cp,gcc`

You will want to wait() for the command to finish before printing your prompt and accepting other UNIX commands and use MUST use execvp() which looks in your default PATH. 'Control-d' will exit your shell as the commands are read from standard input, use the % character as a prompt. Hint: Take a look at the strtok library function. Each C program has 3 file descriptors: standard input, standard output and standard error. Your program should be able to redirect standard output. You should have one "builtin" command, the "cd" command. It should work correctly with no argument, taking your to your home directory.

Look at the dup/dup2 system calls.

Report

Individual work only (no collaboration is allowed). Submit via myCourses. Along with the program source code, please also submit a short report (< 1 page) including the details of your implementation, such as on what platform (machine) did you develop and test your programs,

what compilers you use, and how you compiled your programs, etc. You may also include any other discussion that you think is relevant. Please do NOT submit compiled binary files. Code from non-class sources does must be cited.

Due: Sep 27th 2016

Grading

- Correct submission of code and report: 10%
- Correct functionality of the program: 70%
- Error checking: 10%
- Programming style and comments: 10%