CSCE 3600: Systems Programming
Minor Assignment 6 – Implementing Command Line Pipe
Due: 11:59 PM on Monday, March 28, 2016

PROGRAM DESCRIPTION:

In this assignment, you will write a complete C program that will launch two applications given as command line arguments using `execvp()`, so that the standard output of the first argument (not the executable itself) is piped into the standard input of the second argument. Note that this means you will have to create two child processes, where the output of one will be piped as the input of the other, while the parent should wait for both child processes to terminate before it prints out a meaningful message and exits. For the purposes of this minor assignment, you do not have to support any flag options for any of the applications (i.e., UNIX/Linux commands), but be sure to handle error cases as applicable.

SAMPLE OUTPUT (user input shown in **bold green**):

```
mat0299@faculty:~/csce3600$ ./minor6
error: too few or too many arguments: 1
mat0299@faculty:~/csce3600$ ./minor6 ls
error: too few or too many arguments: 2
mat0299@faculty:~/csce3600$ ./minor6 ls ps wc
error: too few or too many arguments: 4
mat0299@faculty:~/csce3600$ ./minor6 ls wc
executing: ls | wc
    101     101     984
command line pipe completed
mat0299@faculty:~/csce3600$ ./minor6 du wc
executing: du | wc
     25      50     415
command line pipe completed
mat0299@faculty:~/csce3600$ ./minor6 du tail
executing: du | tail
24   ./isolate
4    ./sec021/test
132 ./sec021
4    ./sp16/sec001
76   ./sp16/major1Dir
316 ./sp16/test/ch4_unix_io
4    ./sp16/test/ch01
1304./sp16/test
1576./sp16
3600.
command line pipe completed
mat0299@faculty:~/csce3600$ ./minor6 ps sort
executing: ps | sort
```

```
29646 pts/1    00:00:00 bash
31127 pts/1    00:00:00 minor6
31128 pts/1    00:00:00 ps
31129 pts/1    00:00:00 sort
  PID TTY          TIME CMD
command line pipe completed
mat0299@faculty:~/csce3600$ ./minor6 ps wc
executing: ps | wc
      5      20     142
command line pipe completed
```

REQUIREMENTS:

- Your code should be well documented in terms of comments. For example, good comments in general consist of a header (with your name, course section, date, and brief description), comments for each variable, and commented blocks of code.

- Your program should be named "`minor6.c`", without the quotes.

- Your program will be graded based largely on whether it works correctly on the CSE machines (e.g., cse01, cse02, ..., cse06), so you should make sure that your program compiles and runs on a CSE machine.

- Please pay attention to the **SAMPLE OUTPUT** for how this program is expected to work. If you have any questions about this, please contact your instructor, TAs, or IA assigned to this course to ensure you understand these directions.

- This is an individual programming assignment that must be the sole work of the individual student.

SUBMISSION:

- You will electronically submit your bash program to the **Minor Assignment 6** dropbox in Blackboard by the due date.