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CSC 415 (1)
Prof. Baldwin

Homework 3

Overview: This program functions as a basic shell that runs on top of the command line interpreter for LINUX/UNIX. It prompts the user for input with the ">" symbol, and then takes in up to 5 arguments, the first being the command or utility, and the other 4 being arguments or options. I use fgets() to read the input string into a buffer of 1024 bytes, then parse it into substrings with strtok(), and save those into an array. The program then uses fork() to start a new process, and execvp() used with the input buffer to find and run the appropriate command as directed. Input of "exit" ends execution and returns to normal command-line shell.

Testing: Testing was done with presenting a series of inputs that explore possible edge cases. Input larger than 1024 will be truncated to 1024. A user input that is empty, too many arguments, not a valid command, will all return an error, and re-assert the prompt.

```
[Tristans-MacBook-Pro:homework3 arjuna$ /bin/ls -l /dev/null
crw-rw-rw-  1 root  wheel    3,   2 Mar  2 11:54 /dev/null
[Tristans-MacBook-Pro:homework3 arjuna$ pwd
/Users/arjuna/school/spring2018/csc415/csc415/homework3/homework3/homework3
[Tristans-MacBook-Pro:homework3 arjuna$ cc -Wall homework3.c -o homework3
[Tristans-MacBook-Pro:homework3 arjuna$ ./homework3
> pwd
/Users/arjuna/school/spring2018/csc415/csc415/homework3/homework3/homework3
> /bin/ls -l /dev/null
crw-rw-rw-  1 root  wheel    3,   2 Mar  2 11:56 /dev/null
> echo these are some args
these are some args
> echo these are some more args
Error: too many arguments given. Ex: <command> <arg1> <arg2> <arg3> <arg4>
>
Error: No input. Command structure: <command> <arg1> <arg2> <arg3> <arg4>
> aasfkljasldfkj
Error: exec failed. Ex: <command> <arg1> <arg2> <arg3> <arg4>
: No such file or directory
> exit
Tristans-MacBook-Pro:homework3 arjuna$
```