

CSC415 HW3

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Host OS: Windows 7

Guest OS: Linux (Ubuntu 14) on VirtualBox

1. Programming in Linux (in VirtualBox)

Requirement:

- A simple shell program that can accept the user input and execute the corresponding build-in program
- **Input requirement**
 - Maximum length of input is 1024 bytes. Extra input beyond that will be omit, only the truncated input will be used.
 - Maximum arguments accepted is 5 (in the program it is set to be modifiable)
 - Empty input (return or space) is acceptable.

Code structure:

- The `lcsh` include 3 funcs, `prompt_and_read`, `parse`, and `lcsh`
- `prompt_and_read` prompts and read the user input,
- `parse` parses the input
- `lcsh` do the fork, `execvp` and wait work

Compile and run:

```
cheng@cheng-VirtualBox: ~/CSC415/HW3
cheng@cheng-VirtualBox:~$ cd CSC415/HW3
cheng@cheng-VirtualBox:~/CSC415/HW3$ ls
lcsh.c
cheng@cheng-VirtualBox:~/CSC415/HW3$ cc -Wall -std=c99 lcsh.c -o lcsh
cheng@cheng-VirtualBox:~/CSC415/HW3$ ./lcsh
lcsh>> ls
lcsh  lcsh.c
lcsh>> ll
Exec Failed: No such file or directory
lcsh>> ls -l
total 12
-rwxrwxr-x 1 cheng cheng 8072 Mar  3 11:20 lcsh
-rw-rw-r-- 1 cheng cheng 2570 Mar  3 11:19 lcsh.c
lcsh>> ps
  PID TTY          TIME CMD
 3051 pts/0      00:00:00 bash
 3072 pts/0      00:00:00 lcsh
 3074 pts/0      00:00:00 lcsh
 3076 pts/0      00:00:00 ps
lcsh>> 
```

Compile and run:

```
cheng@cheng-VirtualBox: ~/CSC415/HW3
cheng@cheng-VirtualBox:~/CSC415/HW3$ cc -Wall -std=c99 lcsh.c -o lcsh
cheng@cheng-VirtualBox:~/CSC415/HW3$ ./lcsh
lcsh>> ls
lcsh  lcsh.c
lcsh>> ls -a
.  ..  lcsh  lcsh.c
lcsh>> ps
  PID TTY          TIME CMD
 3051 pts/0      00:00:00 bash
 3093 pts/0      00:00:00 lcsh
 3096 pts/0      00:00:00 ps
lcsh>> pwd
/home/cheng/CSC415/HW3
lcsh>> exit
Shell teminated!
cheng@cheng-VirtualBox:~/CSC415/HW3$ 
```

Error Handling:

