

# CS527: Computer Systems

## Assignment

**Submission Deadline: 23rd December, 2020 6 PM**

**Marks: Q1 carries 3 marks and Q2 carries 7 marks.**

**Q1.** Write a C program to simulate a bash shell of your own say “**myshell**” which consists of Linux commands:

**myshell** must look exactly like your terminal.

**myshell** should also show correct usage of any command. Hence implement help command for your linux commands.

**myshell** should look exactly like the one in your Linux terminal: user@hostname:path to current dir. For example: **shirshendu@mylaptop :~/Assignment1\$**

Any illegal command, unrecognized arguments should throw a meaningful error to the user and the shell should not crash or be killed.

**myshell** should also support the exit command so that the process is not killed or forcefully exited and print a meaningful exit message.

**myshell** should also remember the recently used commands. The recently used commands must be available when using UP and DOWN arrows.

**myshell** should be capable of executing any linux command using **system()**.

**Q2.** In myshel simulate the functionality of the following unix commands:

ls  
ps  
cp  
mv  
grep

The commands are to be implemented explicitly using C and should be executed via **myshell** process. Use of an already existing implementation of these commands in bash or any other shell is strictly prohibited. You should implement at least 4 to 5 options for each command.

**Implementing grep with at least 4 options has 3 marks.**

\*\*\* Hint: Use readline and getopt functions. A short video will be uploaded by tonight to explain the assignment.

\*\*\*The submission procedure will be informed later.

**\*\*\*All the submissions will be tested together to find the copy cases. Strict action will be taken in such cases. You may get negative marks also.**