

# CS230, Spring 2018

## Project#1: Writing Your Own Linux Shell

For the questions, use Q&A in KLMS.

Due date: Sunday, May 13

### Introduction

The purpose of this assignment is to become more familiar with the C language and Linux. You will do this by writing a simple Linux shell program that supports directory creation and deletion.

### Logistics

You should solve the problem for this assignment individually. Any clarifications and revisions to the assignment will be posted on the course web page (KLMS).

### Project Specification

Your shell program should have the following features:

- The prompt should be the string "StudentID>"
  - The command line typed by the user should consist of a command name and zero or more arguments, all separated by one or more spaces.
  - Your shell program should support the following commands:
    - ✓ The *ls* command lists directory contents
    - ✓ The *mkdir* command creates directory
    - ✓ The *rmdir* command deletes directory
    - ✓ The *cd* command changes the current directory to target directory ✓
- The *cd ..* command changes the current directory to upper directory ✓
- The *exit* command terminates shell program

## Output Example

```
root@taejoon-XPS-8700:/home/taejoon# ./Shell
20151234> ls
examples.desktop  Shell  Pictures  Downloads  Public
shell  Videos Music  Templates  Documents
Desktop Workspace
20151234> mkdir test
20151234> ls
examples.desktop  Shell  Pictures  Downloads  Public
shell  Videos Music  Templates  Documents
Desktop Workspace
test
20151234> cd test
20151234> ls
20151234> mkdir test1234
20151234> ls
test1234
20151234> rmdir test1234
20151234> ls
20151234> cd ..
20151234> ls
examples.desktop  Shell  Pictures  Downloads  Public
shell  Videos Music  Templates  Documents
Desktop Workspace
test
20151234> exit
root@taejoon-XPS-8700:/home/taejoon#
```

Start your shell program with [./Shell]  
Check your current directory with [ls]  
Create directory "test" with [mkdir test]  
Check your directory "test" is created with [ls]  
Change current directory to directory "test" with [cd test]  
Check directory "test" is empty with [ls]  
Create directory "test1234" with [mkdir test1234]  
Check directory "test1234" is created with [ls]  
Remove directory "test1234" with [rmdir test1234]  
Check directory "test1234" is deleted with [ls]  
Change current directory to upper directory with [cd ..]  
Check your current directory with [ls]  
Exit Shell program with [exit]

## Evaluation

Your score will be computed out of a maximum of 100 points based on following distribution:

- 20 Basic marks: If you upload anything in the KLMS, you will get 20 points.
- 60 Correctness: 10 points for each commands(ls mkdir rmdir cd cd .. exit)
- 20 Comments: Good comments on code will get maximum 20 points.

☒ If you copy codes from internet or from other students, you will get 0 point.

☒ 1 day delay = - 20 points

## Hand In Instructions

- Compress every files in your working directory with "tar -cvf Student\_ID \*" command
- Upload "Student\_ID.tar" in the KLMS

```
root@taejoon-XPS-8700:/home/taejoon/test# ls
executablefile  objectfile.o  sourcecode.c
root@taejoon-XPS-8700:/home/taejoon/test# tar -cvf Student_ID.tar *
executablefile
objectfile.o
sourcecode.c
root@taejoon-XPS-8700:/home/taejoon/test# ls
executablefile  objectfile.o  sourcecode.c  Student_ID.tar
```