

13016209: Object-oriented Concepts and Programming

Second Semester, 2017

Project Proposal

1. Project developer

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2. Project title

Linux Command Line Prompt

3. Project description and requirements

Project description:

This project is a simplified version of the linux bash shell. It will only have some capabilities of the real linux bash shell. This is an attempt to create my own operating system. This linux bash shell will only support some of the linux commands, and it will not support all the options of the commands. It will have a limited supply of memory and you will not be able to freely create files in the shell. The main capabilities that it will have is creating folders, traversing folders, deleting files, creating files, and running files.

Examples:

```
Nipat Liampisan
/\_/\
( o.o )
> - <
user@meow ~$ mkdir music
user@meow ~$ mkdir documents
user@meow ~$ mkdir downloads
user@meow ~$ cd music
user@meow ~$ mkdir m1
user@meow ~$ mkdir m2
user@meow ~$ pwd
/music
user@meow ~$ ls
m1 m2
```

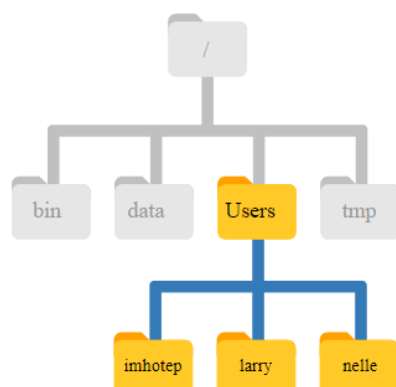
Project requirements:

The data structure that will be used to create a directory is the n-ary tree. Each node can have n number of children and it contains a file pointer. The file pointer can either point to NULL or to an actual file. If it points to NULL, this means that the file is a directory that can be traversed to. If the file pointer is not NULL, it can point to 3 types of files: text file, timer file, or music file.

Commands Supported:

Command	Description
cd	Change the shell working directory Options: cd .. (go back to the parent directory) cd filename (go to the specified directory that is one level down)
ls	List the names of all the files in the current directory
recur_ls	List all the directories in the tree using preorder traversal
mkdir	Create a directory if it doesn't currently exists
Meow_txt	Create a text file using character ' ' as a delimiter when inputting data
Meow_music	Create a music file using the number as musical notes
Meow_time	Create a timer by letting the user enter the amount of seconds to count down from
run	run the process of a file
pwd	Print the current working directory
rm	Recursively remove a directory or delete a file

Tree Structure:



```
user@meow ~$ recur_ls
music
    m1
    m2
documents
downloads
```

Non-standard C++ functions:

```
#include <Windows.h>
```

```
Beep(int freq, int duration); // duration is in milliseconds
```

Used in myMusicFile to create sounds

```
System("color xx") //text color and console background changes according to value in xx
```

Used in myTimerFile to signal end of time

```
#include <ctime>
```

```
Clock()
```

Used in myTimerFile to keep track of how much time has passed