

# CSE 321 Operating Systems

## Lab Assignment 1

Name: Fathin Ishrak

ID: 20301027

Section: 05

### Task 01 (a):

```
> mkdir assignment1
> cd assignment1
> touch 20301027_1.txt 20301027_2.txt 20301027_3.txt
20301027_4.txt
> mkdir FathinIshrak1 FathinIshrak2
> mv 20301027_1.txt 20301027_2.txt 20301027_3.txt
FathinIshrak1/
> cp FathinIshrak1/20301027_1.txt
FathinIshrak1/20301027_2.txt FathinIshrak2/
> mkdir FathinIshrak3
> cp -r FathinIshrak1/ FathinIshrak3/
> cd FathinIshrak3
> ls -l
> chmod 755 *
> ls -l
> cd ..
> ls
> sudo mv FathinIshrak3 /
> rm -r *
```

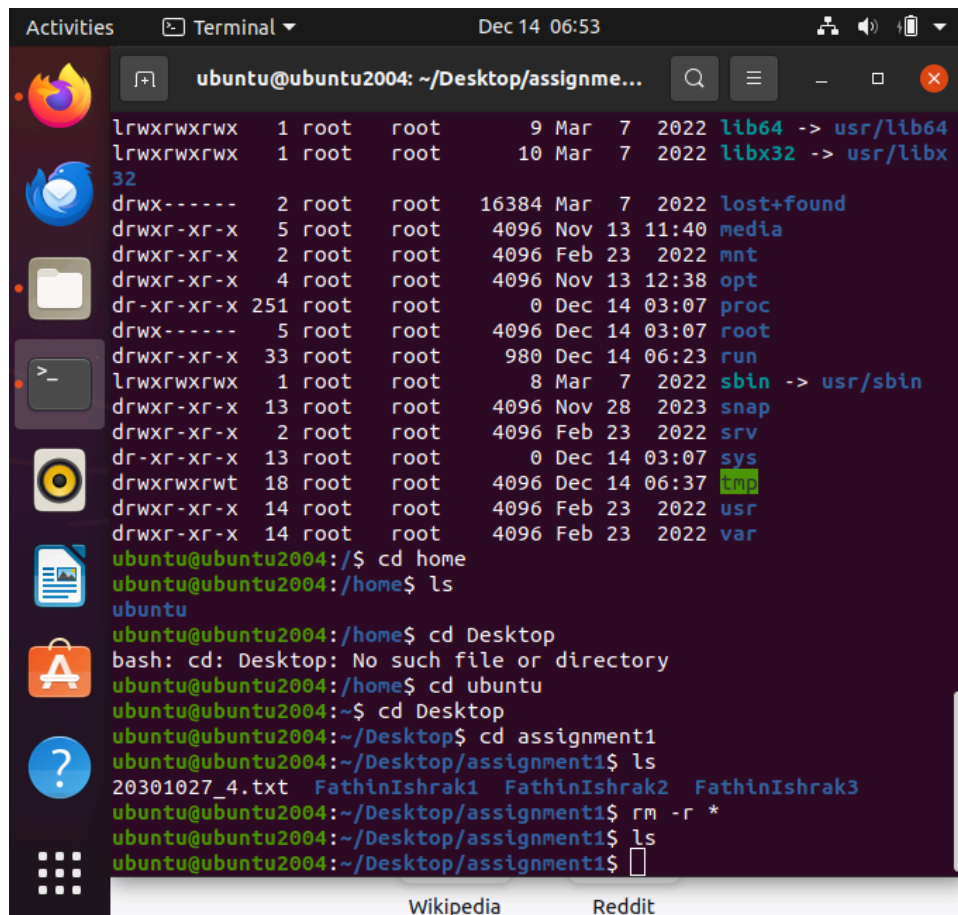
```
Activities Terminal Dec 14 06:52
ubuntu@ubuntu2004: ~/Desktop/assignme...
ubuntu@ubuntu2004:~/Desktop$ mkdir assignment1
ubuntu@ubuntu2004:~/Desktop$ cd assignment1
ubuntu@ubuntu2004:~/Desktop/assignment1$ touch 20301027_1.txt 2030
1027_2.txt 20301027_3.txt 20301027_4.txt
ubuntu@ubuntu2004:~/Desktop/assignment1$ mkdir FathinIshrak1 Fathi
nIshrak2
ubuntu@ubuntu2004:~/Desktop/assignment1$ mv 20301027_1.txt 2030102
7_2.txt 20301027_3.txt FathinIshrak1/
ubuntu@ubuntu2004:~/Desktop/assignment1$ cp FathinIshrak1/20301027
_1.txt
cp: missing destination file operand after 'FathinIshrak1/20301027
_1.txt'
Try 'cp --help' for more information.
ubuntu@ubuntu2004:~/Desktop/assignment1$ cp FathinIshrak1/20301027
_1.txt FathinIshrak1/20301027_2.txt FathinIshrak2/
ubuntu@ubuntu2004:~/Desktop/assignment1$ mkdir FathinIshrak3
ubuntu@ubuntu2004:~/Desktop/assignment1$ cp -r FathinIshrak1/ Fath
inIshrak3/
ubuntu@ubuntu2004:~/Desktop/assignment1$ cd FathinIshrak3
ubuntu@ubuntu2004:~/Desktop/assignment1/FathinIshrak3$ ls -l
total 4
drwxrwxr-x 2 ubuntu ubuntu 4096 Dec 14 06:41 FathinIshrak1
ubuntu@ubuntu2004:~/Desktop/assignment1/FathinIshrak3$ chmod 755 *
ubuntu@ubuntu2004:~/Desktop/assignment1/FathinIshrak3$ ls -l
total 4
drwxr-xr-x 2 ubuntu ubuntu 4096 Dec 14 06:41 FathinIshrak1
ubuntu@ubuntu2004:~/Desktop/assignment1/FathinIshrak3$ cd ..
ubuntu@ubuntu2004:~/Desktop/assignment1$ ls
20301027_4.txt FathinIshrak1 FathinIshrak2 FathinIshrak3
ubuntu@ubuntu2004:~/Desktop/assignment1$ sudo mv FathinIshrak3 /
```

```
Activities Terminal Dec 14 06:53
ubuntu@ubuntu2004: ~/Desktop/assignme...
ubuntu@ubuntu2004:~/Desktop/assignment1$ sudo mv FathinIshrak3 /
mv: cannot move 'FathinIshrak3' to '/FathinIshrak3': Directory not
empty
ubuntu@ubuntu2004:~/Desktop/assignment1$ cd ..
ubuntu@ubuntu2004:~/Desktop$ cd ..
ubuntu@ubuntu2004:~$ cd ..
ubuntu@ubuntu2004:/home$ ls
ubuntu
ubuntu@ubuntu2004:/home$ cd ..
ubuntu@ubuntu2004:/ $ ls
bin    etc      lib      lost+found  proc  snap  usr
boot  FathinIshrak1  lib32    media      root  srv   var
cdrom  FathinIshrak3  lib64    mnt        run   sys
dev    home     libx32   opt        sbin  tmp
ubuntu@ubuntu2004:/ $ rm -r FathinIshrak1
rm: cannot remove 'FathinIshrak1': Permission denied
ubuntu@ubuntu2004:/ $ rm -r FathinIshrak3
rm: cannot remove 'FathinIshrak3': Permission denied
ubuntu@ubuntu2004:/ $ ls -l
total 84
lrwxrwxrwx 1 root root 7 Mar 7 2022 bin -> usr/bin
drwxr-xr-x 4 root root 4096 Nov 13 12:39 boot
drwxrwxr-x 2 root root 4096 Mar 7 2022 cdrom
drwxr-xr-x 20 root root 4340 Dec 14 03:13 dev
drwxr-xr-x 140 root root 12288 Nov 13 13:04 etc
drwxrwxr-x 2 ubuntu ubuntu 4096 Dec 14 06:45 FathinIshrak1
drwxrwxr-x 2 ubuntu ubuntu 4096 Dec 14 06:46 FathinIshrak3
drwxr-xr-x 3 root root 4096 Mar 7 2022 home
lrwxrwxrwx 1 root root 7 Mar 7 2022 lib -> usr/lib
lrwxrwxrwx 1 root root 9 Mar 7 2022 lib32 -> usr/lib32
```

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```
Activities Terminal Dec 14 06:53
ubuntu@ubuntu2004: ~/Desktop/assignme...
lrwxrwxrwx 1 root root 9 Mar 7 2022 lib32 -> usr/lib32
lrwxrwxrwx 1 root root 9 Mar 7 2022 lib64 -> usr/lib64
lrwxrwxrwx 1 root root 10 Mar 7 2022 libx32 -> usr/libx
32
drwx----- 2 root root 16384 Mar 7 2022 lost+found
drwxr-xr-x 5 root root 4096 Nov 13 11:40 media
drwxr-xr-x 2 root root 4096 Feb 23 2022 mnt
drwxr-xr-x 4 root root 4096 Nov 13 12:38 opt
dr-xr-xr-x 251 root root 0 Dec 14 03:07 proc
drwx----- 5 root root 4096 Dec 14 03:07 root
drwxr-xr-x 33 root root 980 Dec 14 06:23 run
lrwxrwxrwx 1 root root 8 Mar 7 2022 sbin -> usr/sbin
drwxr-xr-x 13 root root 4096 Nov 28 2023 snap
drwxr-xr-x 2 root root 4096 Feb 23 2022 srv
dr-xr-xr-x 13 root root 0 Dec 14 03:07 sys
drwxrwxrwt 18 root root 4096 Dec 14 06:37 tmp
drwxr-xr-x 14 root root 4096 Feb 23 2022 usr
drwxr-xr-x 14 root root 4096 Feb 23 2022 var
ubuntu@ubuntu2004:/$ chmod 777 FathinIshrak3
ubuntu@ubuntu2004:/$ rm -r FathinIshrak3
rm: cannot remove 'FathinIshrak3': Permission denied
ubuntu@ubuntu2004:/$ ls -l
total 84
lrwxrwxrwx 1 root root 7 Mar 7 2022 bin -> usr/bin
drwxr-xr-x 4 root root 4096 Nov 13 12:39 boot
drwxrwxr-x 2 root root 4096 Mar 7 2022 cdrom
drwxr-xr-x 20 root root 4340 Dec 14 03:13 dev
drwxr-xr-x 140 root root 12288 Nov 13 13:04 etc
drwxrwxr-x 2 ubuntu ubuntu 4096 Dec 14 06:45 FathinIshrak1
drwxrwxrwx 2 ubuntu ubuntu 4096 Dec 14 06:46 FathinIshrak3
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```

```
Activities Terminal Dec 14 06:53
ubuntu@ubuntu2004: ~/Desktop/assignme...
drwxrwxr-x 2 ubuntu ubuntu 4096 Dec 14 06:45 FathinIshrak1
drwxrwxrwx 2 ubuntu ubuntu 4096 Dec 14 06:46 FathinIshrak3
drwxr-xr-x 3 root root 4096 Mar 7 2022 home
lrwxrwxrwx 1 root root 7 Mar 7 2022 lib -> usr/lib
lrwxrwxrwx 1 root root 9 Mar 7 2022 lib32 -> usr/lib32
lrwxrwxrwx 1 root root 9 Mar 7 2022 lib64 -> usr/lib64
lrwxrwxrwx 1 root root 10 Mar 7 2022 libx32 -> usr/libx
32
drwx----- 2 root root 16384 Mar 7 2022 lost+found
drwxr-xr-x 5 root root 4096 Nov 13 11:40 media
drwxr-xr-x 2 root root 4096 Feb 23 2022 mnt
drwxr-xr-x 4 root root 4096 Nov 13 12:38 opt
dr-xr-xr-x 251 root root 0 Dec 14 03:07 proc
drwx----- 5 root root 4096 Dec 14 03:07 root
drwxr-xr-x 33 root root 980 Dec 14 06:23 run
lrwxrwxrwx 1 root root 8 Mar 7 2022 sbin -> usr/sbin
drwxr-xr-x 13 root root 4096 Nov 28 2023 snap
drwxr-xr-x 2 root root 4096 Feb 23 2022 srv
dr-xr-xr-x 13 root root 0 Dec 14 03:07 sys
drwxrwxrwt 18 root root 4096 Dec 14 06:37 tmp
drwxr-xr-x 14 root root 4096 Feb 23 2022 usr
drwxr-xr-x 14 root root 4096 Feb 23 2022 var
ubuntu@ubuntu2004:/$ cd home
ubuntu@ubuntu2004:/home$ ls
ubuntu
ubuntu@ubuntu2004:/home$ cd Desktop
bash: cd: Desktop: No such file or directory
ubuntu@ubuntu2004:/home$ cd ubuntu
ubuntu@ubuntu2004:~/ubuntu$ cd Desktop
ubuntu@ubuntu2004:~/Desktop$ cd assignment1
ubuntu@ubuntu2004:~/Desktop/assignment1$ ls
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```



The screenshot shows a terminal window titled "Terminal" with the date "Dec 14 06:53". The terminal displays the output of the `ls -ld /` command, listing the root directory's contents. The output is as follows:

Permissions	Link Count	Owner	Group	Size	Month	Day	Year	Directory Name	Notes	
lrwxrwxrwx	1	root	root		9	Mar	7	2022	lib64	-> usr/lib64
lrwxrwxrwx	1	root	root		10	Mar	7	2022	libx32	-> usr/libx32
drwx-----	2	root	root	16384	Mar	7	2022	lost+found		
drwxr-xr-x	5	root	root	4096	Nov	13	11:40	media		
drwxr-xr-x	2	root	root	4096	Feb	23	2022	mnt		
drwxr-xr-x	4	root	root	4096	Nov	13	12:38	opt		
dr-xr-xr-x	251	root	root	0	Dec	14	03:07	proc		
drwx-----	5	root	root	4096	Dec	14	03:07	root		
drwxr-xr-x	33	root	root	980	Dec	14	06:23	run		
lrwxrwxrwx	1	root	root	8	Mar	7	2022	sbin	-> usr/sbin	
drwxr-xr-x	13	root	root	4096	Nov	28	2023	snap		
drwxr-xr-x	2	root	root	4096	Feb	23	2022	srv		
dr-xr-xr-x	13	root	root	0	Dec	14	03:07	sys		
drwxrwxrwt	18	root	root	4096	Dec	14	06:37	tmp		
drwxr-xr-x	14	root	root	4096	Feb	23	2022	usr		
drwxr-xr-x	14	root	root	4096	Feb	23	2022	var		

Following the directory listing, the user performs several navigation commands:

```
ubuntu@ubuntu2004:/$ cd home
ubuntu@ubuntu2004:/home$ ls
ubuntu
ubuntu@ubuntu2004:/home$ cd Desktop
bash: cd: Desktop: No such file or directory
ubuntu@ubuntu2004:/home$ cd ubuntu
ubuntu@ubuntu2004:~$ cd Desktop
ubuntu@ubuntu2004:~/Desktop$ cd assignment1
ubuntu@ubuntu2004:~/Desktop/assignment1$ ls
20301027_4.txt FathinIshrak1 FathinIshrak2 FathinIshrak3
ubuntu@ubuntu2004:~/Desktop/assignment1$ rm -r *
ubuntu@ubuntu2004:~/Desktop/assignment1$ ls
ubuntu@ubuntu2004:~/Desktop/assignment1$
```

## Task 01 (b):

- > touch course.txt
- > cat > course.txt
- > cat course.txt
- > grep -c "CSE" course.txt

```
Activities Terminal Dec 14 07:33
ubuntu@ubuntu2004: ~/Desktop
ubuntu@ubuntu2004:~/Desktop$ touch course.txt
ubuntu@ubuntu2004:~/Desktop$ cat > course.txt
Course ID: CSE321
Course Name: Operation System
Section: 05
Faculty Initial: BDH
LAB/No LAB: LAB

Course ID: CSE341
Course Name: Microprocessor
Section: 03
Faculty Initial: RRH
LAB/No LAB: LAB

Course ID: CSE470
Course Name: Software Engineering
Section: 02
Faculty Initial: FZN
LAB/No LAB: No LAB

Course ID: CSE471
Course Name: System Analysis & Design
Section: 01
Faculty Initial: MIH
LAB/No LAB: LAB
ubuntu@ubuntu2004:~/Desktop$ cat course.txt
Course ID: CSE321
Course Name: Operation System
Section: 05
Faculty Initial: BDH
```

```
Activities Terminal Dec 14 07:35
ubuntu@ubuntu2004: ~/Desktop
Course Name: System Analysis & Design
Section: 01
Faculty Initial: MIH
LAB/No LAB: LAB
ubuntu@ubuntu2004:~/Desktop$ cat course.txt
Course ID: CSE321
Course Name: Operation System
Section: 05
Faculty Initial: BDH
LAB/No LAB: LAB

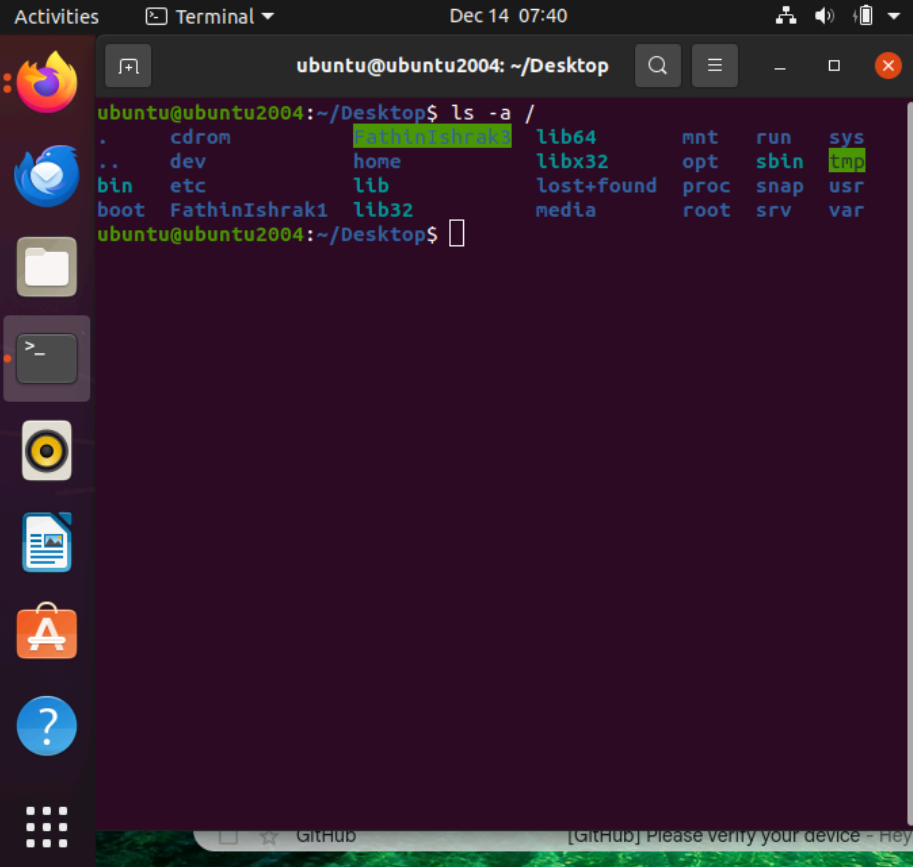
Course ID: CSE341
Course Name: Microprocessor
Section: 03
Faculty Initial: RRH
LAB/No LAB: LAB

Course ID: CSE470
Course Name: Software Engineering
Section: 02
Faculty Initial: FZN
LAB/No LAB: No LAB

Course ID: CSE471
Course Name: System Analysis & Design
Section: 01
Faculty Initial: MIH
LAB/No LAB: LAB
ubuntu@ubuntu2004:~/Desktop$ grep -c "CSE" course.txt
4
```

### Task 01 (c):

```
> ls -a /
```



The screenshot shows a terminal window titled 'Terminal' with the date and time 'Dec 14 07:40'. The user is logged in as 'ubuntu@ubuntu2004' and is in the directory '~/Desktop'. The command 'ls -a /' has been executed, displaying the following output:

```
ubuntu@ubuntu2004:~/Desktop$ ls -a /  
.  
..  
bin  
boot  
cdrom  
dev  
etc  
FathinIshrak1  
lib  
lib32  
lib64  
libx32  
lost+found  
media  
mnt  
opt  
proc  
root  
run  
sbin  
snap  
srv  
sys  
tmp  
usr  
var
```

The terminal window also shows a sidebar with various application icons and a status bar at the bottom with a GitHub notification.

### Task 01 (d):

```
> head -n 17 task1d.txt | tail -n 13
```

Activities Terminal Dec 14 07:35

ubuntu@ubuntu2004: ~/Desktop

```
LAB/No LAB: LAB

Course ID: CSE470
Course Name: Software Engineering
Section: 02
Faculty Initial: FZN
LAB/No LAB: No LAB

Course ID: CSE471
Course Name: System Analysis & Design
Section: 01
Faculty Initial: MIH
LAB/No LAB: LAB

ubuntu@ubuntu2004:~/Desktop$ grep -c "CSE" course.txt
4
ubuntu@ubuntu2004:~/Desktop$ head -n 17 course.txt | tail -n 13
LAB/No LAB: LAB

Course ID: CSE341
Course Name: Microprocessor
Section: 03
Faculty Initial: RRH
LAB/No LAB: LAB

Course ID: CSE470
Course Name: Software Engineering
Section: 02
Faculty Initial: FZN
LAB/No LAB: No LAB
ubuntu@ubuntu2004:~/Desktop$
```