

Laboratory Assignment 1

Subject: Design Principles of Operating Systems

1) Write the commands to create the following directory hierarchy: -> DOS_Regdno ->DOSass1->dir1

Commands:

```
mkdir DOS_reg2241018161
```

```
cd DOS_reg2241018161
```

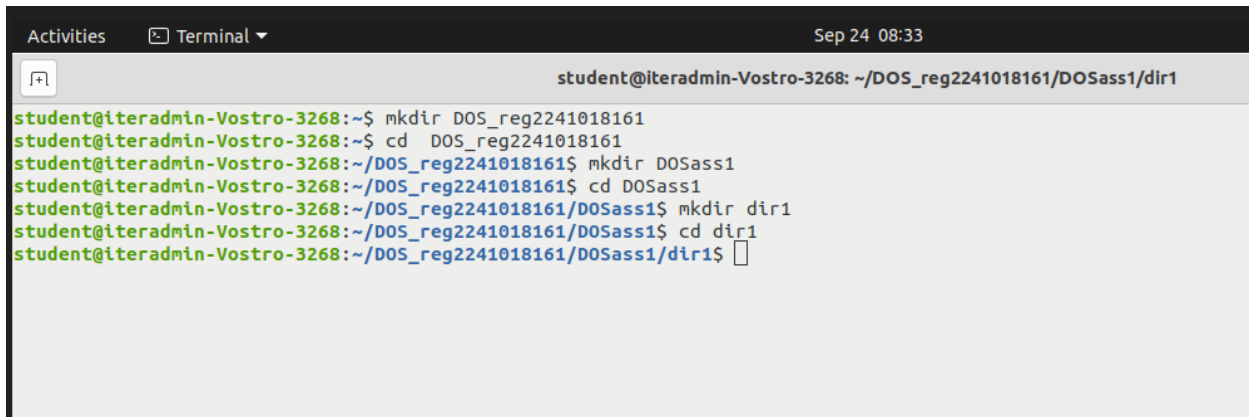
```
mkdir DOSass1
```

```
cd DOSass1
```

```
mkdir dir1
```

```
cd dir1
```

Output:

A terminal window titled 'Terminal' with a timestamp 'Sep 24 08:33'. The terminal shows a series of commands and their outputs. The user is 'student@iteradmin-Vostro-3268'. The commands are: 'mkdir DOS_reg2241018161', 'cd DOS_reg2241018161', 'mkdir DOSass1', 'cd DOSass1', 'mkdir dir1', and 'cd dir1'. The final prompt is '~ /DOS_reg2241018161/DOSass1/dir1\$'.

```
student@iteradmin-Vostro-3268:~$ mkdir DOS_reg2241018161
student@iteradmin-Vostro-3268:~$ cd DOS_reg2241018161
student@iteradmin-Vostro-3268:~/DOS_reg2241018161$ mkdir DOSass1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161$ cd DOSass1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/DOSass1$ mkdir dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/DOSass1$ cd dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/DOSass1/dir1$
```

2) Write the commands to create another directory with name dir2 in directory DOSass1 and make dir2 as the current working directory.

Commands:

```
cd ..
```

```
mkdir dir2
```

```
cd dir2
```

OUTPUT:

```
Activities Terminal Sep 24 08:41
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/DOSass1/dir2

student@iteradmin-Vostro-3268:~/DOS_reg2241018161/DOSass1/dir1$ mkdir DOS_reg2241018161/DOSass1/dir2
mkdir: cannot create directory 'DOS_reg2241018161/DOSass1/dir2': No such file or directory
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/DOSass1/dir1$ cd ..
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/DOSass1$ mkdir dir2
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/DOSass1$ mkdir DOS_reg2241018161/DOSass1/dir2
mkdir: cannot create directory 'DOS_reg2241018161/DOSass1/dir2': No such file or directory
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/DOSass1$ mkdir dir2
mkdir: cannot create directory 'dir2': File exists
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/DOSass1$ cd dir2
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/DOSass1/dir2$
```

3) Write the command to delete the directory dir2 , when DOS_Regdno will be the current working directory.

Commands:

```
cd ..
cd ..
rmdir dir2
```

OUTPUT:

```
Activities Terminal Sep 24 08:41
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161

student@iteradmin-Vostro-3268:~/DOS_reg2241018161/DOSass1/dir2$ cd ..
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/DOSass1$ cd ..
student@iteradmin-Vostro-3268:~/DOS_reg2241018161$ rmdir dir2
rmdir: failed to remove 'dir2': No such file or directory
student@iteradmin-Vostro-3268:~/DOS_reg2241018161$
```

4) Write the command to create a file named as file1 using cat command inside dir1. Write your name, regdno, branch, semester and section in file1. Then display the content of the file.

COMMANDS:

```
cat>file1
Name: Prasanna Kumar Rout
```

Reg.no: 2241018161

Section: 2241006

Sem: 5th

ctrl+d

OUTPUT:

```
Activities Terminal Sep 24 08:53
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ cat>file1
Name:Prasanna Kumar Rout
Reg.no:2241018161
Branch:CSE
Sem:5th
Section:2241006
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ cat file1
Name:Prasanna Kumar Rout
Reg.no:2241018161
Branch:CSE
Sem:5th
Section:2241006
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

5) Write the command to create a file named as file2 using cat command inside dir1.
Write your semester wise SGPA in file2.

COMMANDS:

cat>file2

Semester wise CGPA

Sem1: 7.75

Sem2: 7.76

Sem3: 7.78

Sem4: 7.98

Ctrl+d

OUTPUT:

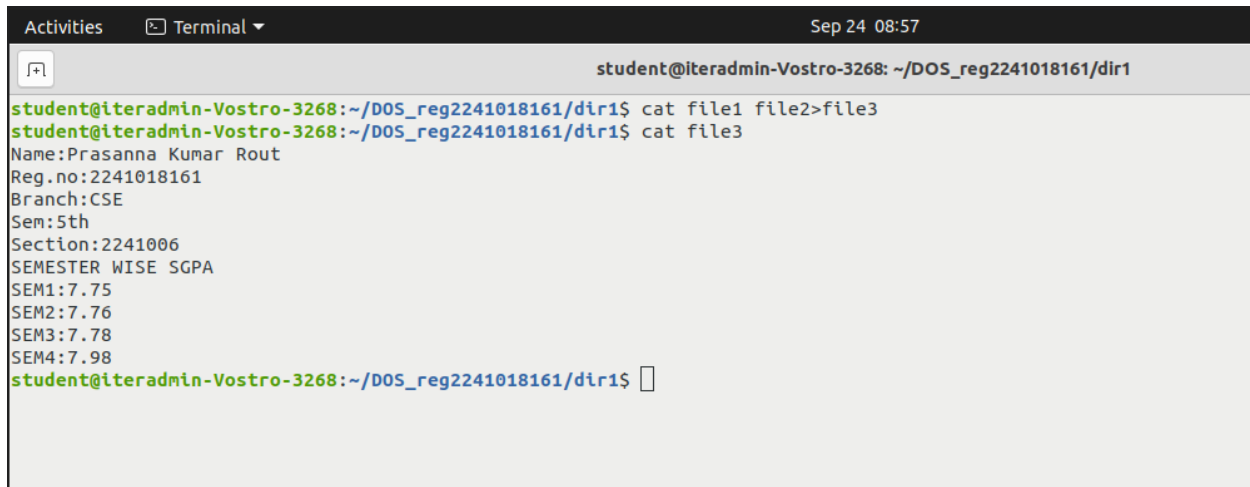
```
Activities Terminal Sep 24 08:55
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ cat>file2
SEMESTER WISE SGPA
SEM1:7.75
SEM2:7.76
SEM3:7.78
SEM4:7.98
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

6) Create a file named as file3 storing content of file1 merged with content of file2

COMMANDS:

`cat file1 file2>file3`

Output:



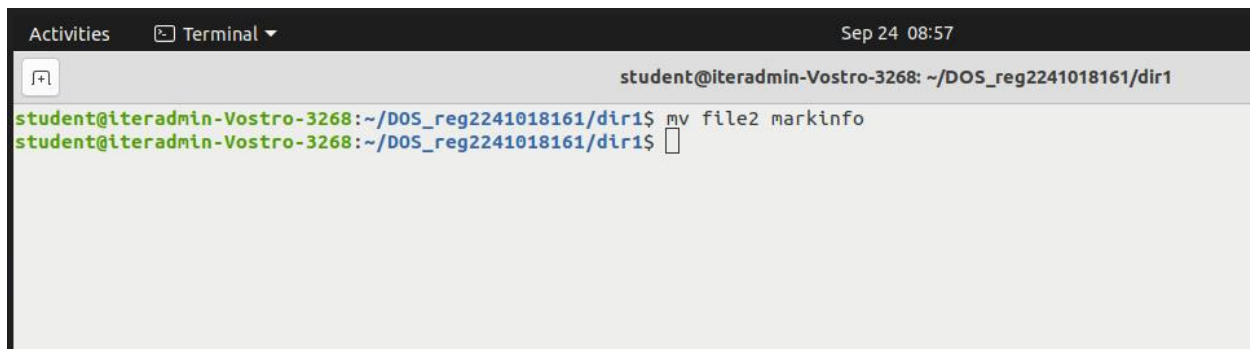
```
Activities Terminal Sep 24 08:57
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ cat file1 file2>file3
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ cat file3
Name:Prasanna Kumar Rout
Reg.no:2241018161
Branch:CSE
Sem:5th
Section:2241006
SEMESTER WISE SGPA
SEM1:7.75
SEM2:7.76
SEM3:7.78
SEM4:7.98
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

7) Write the command to rename file2 as markinfo.

COMMANDS:

`mv file2 markinfo`

OUTPUT:



```
Activities Terminal Sep 24 08:57
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ mv file2 markinfo
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

8) Write the command to copy the content of file1 to reginfo.

Commands:

`cp file1 reginfo`

OUTPUT:

```
Activities Terminal Sep 24 08:59
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ cp file1 reginfo
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ cat reginfo
Name:Prasanna Kumar Rout
Reg.no:2241018161
Branch:CSE
Sem:5th
Section:2241006
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

9) Write the command to display the inode values of file1,markinfo, reginfo.

COMMANDS:

ls -li file1 markinfo reginfo

OUTPUT:

```
Activities Terminal Sep 24 09:01
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ ls -li file1 markinfo reginfo
27265772 file1 27265773 markinfo 27265775 reginfo
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

10) Write the command to delete file1.

COMMANDS:

rm file1

Output:

```
Activities Terminal Sep 24 09:02
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ rm file1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ cat file1
cat: file1: No such file or directory
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

11) Write the command to count the number of lines, words, characters in markinfo

COMMANDS:

wc markinfo

OUTPUT:

```
Activities Terminal Sep 24 09:02
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ wc markinfo
5 7 60 markinfo
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

12) Write the command to create a file named as Personalinfo inside dir1. Write your name, regdno, address in the file.

COMMANDS:

cat>Personalinfo

Name: Prasanna Kumar Rout

Reg.no: 2241018161

Address: L-430, Bramunda Housing Board Colony , BBSR.

Ctrl+d

Output:

```
Activities Terminal Sep 24 09:05
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ cat>Personalinfo
NAME:Prasanna Kumar Rout
Reg.no:2241018161
Address:L-430,Baramunda Housing Board,BBSR
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

13) Write the command to display the content of markinfo in reverse order.

COMMANDS:

tac markinfo

OUTPUT:

```
Activities Terminal Sep 24 09:06
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ tac markinfo
SEM4:7.98
SEM3:7.78
SEM2:7.76
SEM1:7.75
SEMESTER WISE SGPA
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

14) Check the output of the following command: cmp reginfo personalinfo diff reginfo personalinfo

COMMANDS:

cmp reginfo personalinfo

diff reginfo personalinfo

OUTPUT:

```
Activities Terminal Sep 24 09:10
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ cmp reginfo Personalinfo
reginfo Personalinfo differ: byte 2, line 1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ diff reginfo Personalinfo
1c1
< Name:Prasanna Kumar Rout
---
> NAME:Prasanna Kumar Rout
3,5c3
< Branch:CSE
< Sem:5th
< Section:2241006
---
> Address:L-430,Baramunda Housing Board,BBSR
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

15) Write a command to count the number of files in the current working directory and display that number.

Commands:

`ls | wc -l`

Outputs:

```
Activities Terminal Sep 24 09:11
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ ls | wc -l
5
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

16) Write a command to include all the file names present in a current working directory in a file named as filelist without causing filelist to be included in the names.

COMMANDS:

`ls | grep -vx filelist`

Output:


```
Activities Terminal Sep 24 09:32
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ ls | grep -vx filelist
file1
file3
markinfo
Personalinfo
reginfo
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

17) Write a command to give write permission to all the users of file reginfo.

COMMANDS :

chmod a+w reginfo

OUTPUT:

```
Activities Terminal Sep 24 09:14
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ chmod a+w reginfo
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

18) Write a command to discard write permission from group users group users of file reginfo.

COMMANDS:

Chmod g-w reginfo

OUTPUT:

```
Activities Terminal Sep 24 09:17
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ chmod g-w reginfo
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ ls -l reginfo
-rw-r--rw- 1 student student 78 Sep 24 08:59 reginfo
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

19) Write the command to set rwx permissions for all the users of file reginfo.

Commands:

Chmod 777 reginfo

OUTPUT:

```
Activities Terminal Sep 24 09:21
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ chmod 777 reginfo
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ ls -l reginfo
-rwxrwxrwx 1 student student 78 Sep 24 08:59 reginfo
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

20) Differentiate between following commands: date; pwd | wc -l (date; pwd) | wc -l.

Commands:

date;pwd

date;pwd | wc-l

(date; pwd) | wc -l.

OUTPUT:

```
Activities Terminal Sep 24 09:48
student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ date;pwd
Tuesday 24 September 2024 09:47:33 AM IST
/home/student/DOS_reg2241018161/dir1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ date;pwd | wc -l
Tuesday 24 September 2024 09:47:49 AM IST
1
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ (date;pwd) | wc -l
2
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```

21) Interpret the output of the following commmands:

echo *

echo ***

echo '*'**

echo ***

echo ***

echo */*

echo Don't do this

echo “Don't do this” (Quotes of one kind protect quotes of other kind)

echo Hello # world

echo “ Hello # world”

echo ' Hello # world'

echo date

echo 'date'

echo “date”

echo `date

COMMANDS:

echo *

echo ***

echo '*'**

echo ***

echo ***

echo */*

echo Don't do this

echo “Don't do this” (Quotes of one kind protect quotes of other kind)

echo Hello # world

echo "Hello # world"

echo 'Hello # world'

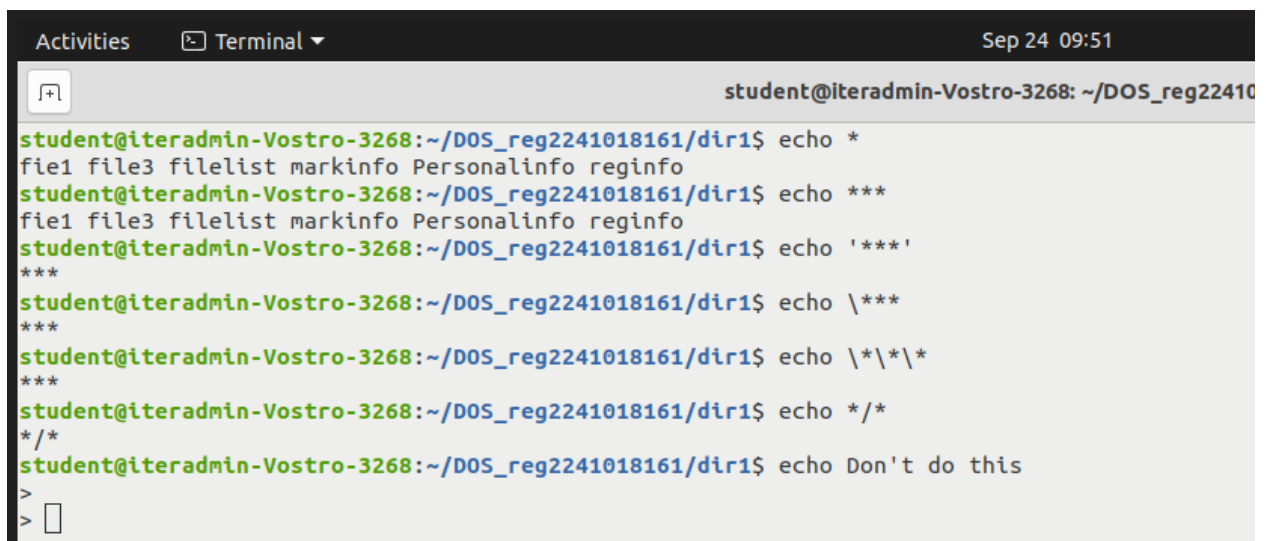
echo date

echo 'date'

echo "date"

echo `date`

OUTPUT:



```
Activities  Terminal  Sep 24 09:51
student@iteradmin-Vostro-3268: ~/DOS_reg22410
student@iteradmin-Vostro-3268:~/DOS_reg22410/dir1$ echo *
fie1 file3 filelist markinfo Personalinfo reginfo
student@iteradmin-Vostro-3268:~/DOS_reg22410/dir1$ echo ***
fie1 file3 filelist markinfo Personalinfo reginfo
student@iteradmin-Vostro-3268:~/DOS_reg22410/dir1$ echo '***'
***
student@iteradmin-Vostro-3268:~/DOS_reg22410/dir1$ echo \***
***
student@iteradmin-Vostro-3268:~/DOS_reg22410/dir1$ echo \*\**
***
student@iteradmin-Vostro-3268:~/DOS_reg22410/dir1$ echo */*
*/
student@iteradmin-Vostro-3268:~/DOS_reg22410/dir1$ echo Don't do this
>
>
```



student@iteradmin-Vostro-3268: ~/DOS_reg2241018161/dir1

```
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ echo "Don't do this"
Don't do this
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ echo Hello # world
Hello
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ echo Hello#world
Hello#world
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ echo"Hello # world"
echoHello # world: command not found
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ echo "Hello # world"
Hello # world
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ echo 'Hello # world'
Hello # world
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ echo date
date
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ echo 'date'
date
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ echo "date"
date
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$ echo `date`
Tuesday 24 September 2024 09:55:08 AM IST
student@iteradmin-Vostro-3268:~/DOS_reg2241018161/dir1$
```