

Assignment Report

On

Design of Operating System (CSE 4049)

Submitted by

Name : Aman Kumar Singh

Reg. No. : 2141019334

Branch : CSE

Semester : 5th Sem

Section : 2141009(CSE-I)

Session : 2023-2024

Admission Batch : 2021



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CONTENT

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Laboratory Assignment #No. 1
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Question 1:

Write the commands to create the following directory hierarchy:

-> DOS_Regdno →DOSass1→dir1

Solution :

Command :

```
mkdir DOS_2141019334
```

```
cd DOS_2141019334
```

```
mkdir DOSass1
```

```
cd DOSass1
```

```
mkdir dir1
```

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1$ mkdir DOS_2141019334
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1$ cd DOS_2141019334
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334$ mkdir DOSass1
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334$ cd DOSass1
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1$ mkdir dir1
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1$
```

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

Solution :

Command :

```
mkdir dir2
```

```
cd dir2
```

```
pwd
```

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1$ mkdir dir2
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1$ cd dir2
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir2$ pwd
/home/aks_1299/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir2
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir2$
```

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

Solution :

Command :

cd ..

cd ..

rmdir DOSass1/dir2

cd DOSass1

ls

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir2$ cd ..
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1$ cd ..
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334$ rmdir DOSass1/dir2
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334$ cd DOSass1
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1$ ls
dir1
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1$
```

Question 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.

Solution :

Command :

cd dir1

cat > file1

Name : Aman Kumar Singh

Regd No.: 2141019334

Branch : CSE

Semester : 5th

Section : I

cat file 1

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1$ cd dir1
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ cat > file1
Name : Aman Kumar Singh
Regd No.: 2141019334
Branch : CSE
Semster : 5th
Section : I
cat file 1

^C
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ cat file1
Name : Aman Kumar Singh
Regd No.: 2141019334
Branch : CSE
Semster : 5th
Section : I
cat file 1
```

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

Solution :

Command :

cat >file2

SGPA:

7.13

8.13

8.92

8.82

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ cat > file2
SGPA:
7.13
8.13
8.92
8.82
^C
```

Question 6: Create a file named as file3 storing content of file1 merged with content of file2.

Solution :

Command :

cat > file1 file2 >> file3

cat file3

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ cat > file1 file2 >> file3
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ cat file3
SGPA:
7.13
8.13
8.92
8.82
```

Question 7: Write the command to rename file2 as markinfo.

Solution :

Command :

mv file2 markinfo

ls

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ mv file2 markinfo
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ ls
file1  file3  markinfo
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$
```

Question 8: Write the command to copy the content of file1 to reginfo.

Solution :

Command :

cp file1 reginfo

ls

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ cp file1 reginfo
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ ls
file1  file3  markinfo  reginfo
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$
```

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

Solution :

Command :

ls -li file1

ls

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ ls -li file1
2379469 file1
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ ls
file1 file3 markinfo reginfo
```

Question 10: Write the command to delete file1.

Solution :

Command :

rm file1

ls

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ rm file1
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ ls
file3 markinfo reginfo
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$
```

Question 11: Write the command to count the number of lines, words, characters in markinfo.

Solution :

Command :

wc markinfo

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ wc markinfo
 5  5 26 markinfo
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$
```


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

Solution :

Command :

cat > personalinfo

Name: Aman Kumar Singh

Redgno:2141019334

Address: JSR

Branch: CSE

JSR

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ cat > personalinfo
Name : Aman Kumar Singh
Regd No.: 2141019334
Address: JSR
```

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

Solution :

Command :

sort -r markinfo

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ sort -r markinfo
SGPA:
8.92
8.82
8.13
7.13
```

Question 14: Check the output of the following command:

cmp reginfo personalinfo

diff reginfo personalinfo

Solution :

Command :

cmp reginfo personalinfo

diff reginfo personalinfo

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ cmp reginfo personalinfo
cmp: EOF on reginfo which is empty
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ diff reginfo personalinfo
0a1,3
> Name : Aman Kumar Singh
> Regd No.: 2141019334
> Address: JSR
```

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

Solution :

Command :

ls | wc -l

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ ls | wc -l
4
```

Question 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.

Solution :

Command :

ls > filelist

cat filelist

ls | grep -v filelist > filelist

cat filelist

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ ls > filelist
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ cat filelist
file3
filelist
markinfo
personalinfo
reginfo
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ ls | grep -v filelist > filelist
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ cat filelist
file3
markinfo
personalinfo
reginfo
```

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

Solution :

Command :

chmod a+w reginfo

ls -l reginfo

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ chmod a+w reginfo
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ ls -l reginfo
-rw-rw-rw- 1 aks_1299 aks_1299 0 Nov  7 23:49 reginfo
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$
```

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

Solution :

Command :

chmod g-w reginfo

ls -l reginfo

Output :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ chmod g-w reginfo
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ ls -l reginfo
-rw-r--rw- 1 aks_1299 aks_1299 0 Nov  7 23:49 reginfo
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$
```

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

Solution :

Command :

chmod a+rw reginfo

ls -l reginfo

Output :

```
aks_1299@Ghost: ~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ chmod a+rw reginfo
aks_1299@Ghost: ~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ ls -l reginfo
-rwxrwxrwx 1 aks_1299 aks_1299 0 Nov  7 23:49 reginfo
aks_1299@Ghost: ~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$
```

Question 20: Differentiate between following commands:

date; pwd

date; pwd | wc -l

(date; pwd) | wc -l

Solution :**Command :**

date; pwd

date; pwd | wc -l

(date; pwd) | wc -l

Output :

```
aks_1299@Ghost: ~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ date; pwd
Wednesday 08 November 2023 12:32:25 AM IST
/home/aks_1299/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1
aks_1299@Ghost: ~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ date; pwd | wc -l
Wednesday 08 November 2023 12:32:32 AM IST
1
aks_1299@Ghost: ~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/DOSass1/dir1$ (date; pwd) | wc -l
2
```

Question 21: Interpret the output of the following 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`
```

Solution :

Command :

```
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 :

```
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ echo *
file3 filelist markinfo personalinfo reginfo
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ echo ***
file3 filelist markinfo personalinfo reginfo
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ echo '***'
***
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ echo \***
***
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ echo \*\*\*
***
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ echo */*
*/
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ echo Dont do this
Dont do this
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ echo "Dont do this"
Dont do this
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ echo Hello # world
Hello
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ echo "Hello # world"
Hello # world
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ echo 'Hello # world'
Hello # world
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ echo date
date
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ echo 'date'
date
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ echo "date"
date
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ echo `date`
Wednesday 08 November 2023 12:35:35 AM IST
aks_1299@Ghost:~/2141019334/DOS_2141019334/DOS_Assignment1/DOS_2141019334/D0Sass1/dir1$ █
```