ASSIGNMENT 1: Basic Commands in Unix Operating System

Objective of this Assignment: To study the basic commands such as who, whoami, date, cal, pwd, man, mkdir, cd, rmdir, cat, mv, cp, rm, wc, sort, head, tail, cmp, diff, ls, chmod, grep, echo for accessing files and directories.

Q1. Write the commands to create the following directory hierarchy:

→ DOS_Regdno → DOSass1 → dir1

Commands:

mkdir DOS_2241013379

cd DOS_2241013379/

mkdir DOSass1

cd DOSass1/

mkdir dir1

cd dir1/

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS$ mkdir DOS_2241013379
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS$ cd DOS_2241013379/
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379$ mkdir DOSass1
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379$ cd DOSass1/
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1$ mkdir dir1
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1$ cd dir1/
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ █
```

Q2. Write the commands to create another directory with name dir2 in directory DOSass1 and make dir2 as the current working directory.

Commands:

mkdir dir2

ls -a

cd ..

cd DOSass1/dir2

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1$ mkdir dir2
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1$ ls -a
.  ..  dir1  dir2
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1$ cd ..
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379$ cd DOSass1/dir2
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir2$ █
```

Q3. Write the command to delete the directory dir2, when DOS_Regdno will be the current working directory.

Commands:

cd ../..

rmdir dir2

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir2$ cd ../..
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379$ rmdir dir2
rmdir: failed to remove 'dir2': No such file or directory
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379$ ▮
```

Q4. 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:

cd DOSass1/

cd dir1/

cat > file1

       Name: SWASTIK MULLICK

       Regd. No.: 2241013379

       Branch: CSE (Core)

       Semester: 5th

       Section: 2241011

cat file1

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379$ cd DOSass1/
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1$ cd dir1/
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ cat > file1
Name: SWASTIK MULLICK
Regd. No.: 2241013379
Branch: CSE (Core)
Semester: 5th
Section: 2241011
^C
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ cat file1
Name: SWASTIK MULLICK
Regd. No.: 2241013379
Branch: CSE (Core)
Semester: 5th
Section: 2241011
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ▮
```

Q5. 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: SGPA

1st: 8.45

2nd: 8.66

3rd: 8.71

4th: 8.97

cat file2

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ cat > file2
Semester: SGPA
1st: 8.45
2nd: 8.66
3rd: 8.71
4th: 8.97
^C
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ cat file2
Semester: SGPA
1st: 8.45
2nd: 8.66
3rd: 8.71
4th: 8.97
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ▊
```

Q6. Create a file named as file3 storing content of file1 merged with content of file2.

Commands:

cat file1 >> file3

cat file2 >> file3

cat file3

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ cat file1 >> file3
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ cat file2 >> file3
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ cat file3
Name: SWASTIK MULLICK
Regd. No.: 2241013379
Branch: CSE (Core)
Semester: 5th
Section: 2241011
Semester: SGPA
1st: 8.45
2nd: 8.66
3rd: 8.71
4th: 8.97
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ▊
```

Q7. Write the command to rename file2 as markinfo.

Commands:

mv file2 markinfo

ls -a

cat markinfo

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ mv file2 markinfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls -a
.  ..  file1  file3  markinfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ cat markinfo
Semester: SGPA
1st: 8.45
2nd: 8.66
3rd: 8.71
4th: 8.97
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$
```

Q8. Write the command to copy the content of file1 to reginfo.

Commands:

cp file1 reginfo

cat reginfo

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ cp file1 reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ cat reginfo
Name: SWASTIK MULLICK
Regd. No.: 2241013379
Branch: CSE (Core)
Semester: 5th
Section: 2241011
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$
```

Q9. Write the command to display the inode values of file1, markinfo, reginfo.

Commands:

ls -i file1

ls -i markinfo

ls -i reginfo

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls -i file1
26875966 file1
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls -i markinfo
26875969 markinfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls -i reginfo
26875982 reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$
```

Q10. Write the command to delete file1.

Commands:

ls -a

rm -v file1

ls -a

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls -a
.  ..  file1  file3  markinfo  reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ rm -v file1
removed 'file1'
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls -a
.  ..  file3  markinfo  reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$
```

Q11. Write the command to count the number of lines, words, characters in markinfo.

Commands:

wc -l markinfo

wc -w markinfo

wc -c markinfo

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ wc -l markinfo
5 markinfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ wc -w markinfo
10 markinfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ wc -c markinfo
55 markinfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$
```

Q12. Write the command to create a file named as Personalinfo inside dir1. Write your name, regdno, address in the file.

Commands:

cat > Personalinfo

     Name: SWASTIK MULLICK

     Regd. No.: 2241013379

     Address: Kolkata, West Bengal

cat Personalinfo

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ cat > Personalinfo
Name: SWASTIK MULLICK
Regd. No.: 2241013379
Address: Kolkata, West Bengal
^C
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ cat Personalinfo
Name: SWASTIK MULLICK
Regd. No.: 2241013379
Address: Kolkata, West Bengal
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$
```

Q13. Write the command to display the content of markinfo in reverse order.

Commands:

sort -r markinfo

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ sort -r markinfo
Semester: SGPA
4th: 8.97
3rd: 8.71
2nd: 8.66
1st: 8.45
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$
```

Q14. Check the output of the following command:

cmp reginfo personalinfo

diff reginfo personalinfo

Commands:

cmp reginfo personalinfo

diff reginfo personalinfo

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ cmp reginfo Personalinfo
reginfo Personalinfo differ: byte 45, line 3
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ diff reginfo Personalinfo
3,5c3
< Branch: CSE (Core)
< Semester: 5th
< Section: 2241011
---
> Address: Kolkata, West Bengal
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$
```

Q15. Write a command to count the number of files in the current working directory and display that number.

Commands:

ls

ls | wc -w

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls
file3   markinfo   Personalinfo   reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls|wc -w
4
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$
```

Q16. 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 > filelist

ls

cat filelist

ls | grep –vx filelist filelist

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls > filelist
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls
file3  filelist  markinfo  Personalinfo  reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ cat filelist
file3
filelist
markinfo
Personalinfo
reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls | grep -vx filelist filelist
file3
markinfo
Personalinfo
reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ▐
```

Q17. Write a command to give write permission to all the users of file reginfo.

Commands:

ls -l

chmod a+w reginfo

ls -l

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls -l
total 20
-rw-rw-r-- 1 student student 149 Sep 28 08:35 file3
-rw-rw-r-- 1 student student  45 Sep 28 09:18 filelist
-rw-rw-r-- 1 student student  55 Sep 28 08:33 markinfo
-rw-rw-r-- 1 student student  74 Sep 28 09:04 Personalinfo
-rw-rw-r-- 1 student student  94 Sep 28 08:50 reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ chmod a+w reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls -l
total 20
-rw-rw-r-- 1 student student 149 Sep 28 08:35 file3
-rw-rw-r-- 1 student student  45 Sep 28 09:18 filelist
-rw-rw-r-- 1 student student  55 Sep 28 08:33 markinfo
-rw-rw-r-- 1 student student  74 Sep 28 09:04 Personalinfo
-rw-rw-rw- 1 student student  94 Sep 28 08:50 reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ▐
```

Q18. Write a command to discard write permission from group users of file reginfo.

Commands:

chmod g-w reginfo

ls -l reginfo

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls -l
total 20
-rw-rw-r-- 1 student student 149 Sep 28 08:35 file3
-rw-rw-r-- 1 student student  45 Sep 28 09:18 filelist
-rw-rw-r-- 1 student student  55 Sep 28 08:33 markinfo
-rw-rw-r-- 1 student student  74 Sep 28 09:04 Personalinfo
-rw-rw-rw- 1 student student  94 Sep 28 08:50 reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ chmod g-w reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls -l
total 20
-rw-rw-r-- 1 student student 149 Sep 28 08:35 file3
-rw-rw-r-- 1 student student  45 Sep 28 09:18 filelist
-rw-rw-r-- 1 student student  55 Sep 28 08:33 markinfo
-rw-rw-r-- 1 student student  74 Sep 28 09:04 Personalinfo
-rw-r--rw- 1 student student  94 Sep 28 08:50 reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls -l reginfo
-rw-r--rw- 1 student student 94 Sep 28 08:50 reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ▮
```

Q19. Write the command to set rwx permissions for all the users of file reginfo.

Commands:

chmod a+rwx reginfo

ls -l reginfo

Output:

```
-rw-r--rw- 1 student student  94 Sep 28 08:50 reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls -l reginfo
-rw-r--rw- 1 student student 94 Sep 28 08:50 reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ chmod a+rwx reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ls -l reginfo
-rwxrwxrwx 1 student student 94 Sep 28 08:50 reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ ▮
```

Q20. Differentiate between following commands:

      date; pwd

      date; pwd | wc -l

      (date; pwd) | wc -l

Commands:

date; pwd

date; pwd | wc -l

(date; pwd) | wc -l

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ date; pwd
Saturday 28 September 2024 09:35:24 AM IST
/home/student/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ date; pwd|wc -l
Saturday 28 September 2024 09:35:32 AM IST
1
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ (date; pwd)|wc -l
2
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ █
```

Q21. 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`

Commands:

echo *
echo ***
echo '***'
echo ***
echo ***
echo */*
echo Don't do this
echo "Don't do this"
echo Hello # world
echo " Hello # world"
echo ' Hello # world'
echo date
echo 'date'
echo "date"

echo `date`

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ echo *
file3 filelist markinfo Personalinfo reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ echo ***
file3 filelist markinfo Personalinfo reginfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ echo '***'
***
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ echo \***
***
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ echo \*\*\*
***
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ echo */*
*/*
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ echo Don't do this
> ^C
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ echo "Don't do this"
Don't do this
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ echo Hello # world
Hello
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ echo "Hello # world"
Hello # world
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ echo 'Hello # world'
Hello # world
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ echo date
date
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ echo 'date'
date
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ echo "date"
date
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ echo `date`
Saturday 28 September 2024 09:40:25 AM IST
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/DOS_2241013379/DOSass1/dir1$ 
```