

Laboratory Assignment 1

Subject: Design Principles of Operating Systems

Subject code: CSE- 3249

Assignment 1: Basic Commands in Unix Operating System.

Objective of this Assignment:

- To study the basic commands such as who, who am i, 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.

1) Write the commands to create the following directory hierarchy:

-> DOS_Regdno ->DOSass1->dir1

```
student@iteradmin-Vostro-3268:~$ cd Desktop
student@iteradmin-Vostro-3268:~/Desktop$ cd 2241011233_Surbhi
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi$ mkdir DOS_2241011233
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi$ cd DOS_2241011233
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233$ mkdir DOSass1
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233$ cd DOSass1
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1$ mkdir dir1
```

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

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1$ mkdir dir1
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1$ mkdir dir2
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1$ cd dir2
```

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

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1$ cd ..
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233$ cd DOSass1
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1$ rm -r dir2
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1$ ls
dir1
```

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.

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1$ cat > file1
Surbhi Kumari,
Registration No - 2241011233
Branch - CSE
Semester - 5th
Section - 2241028^C
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1$ cat file1
Surbhi Kumari,
Registration No - 2241011233
Branch - CSE
Semester - 5th
Section - 2241028student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1$ cd dir1
```

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

```
Section - 2241028student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1$ cd dir1
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ cat > file2
Sem 1 - 9.79
Sem 2 - 9.61
Sem 3 - 8.98
Sem 4 - 8.2
^C
```

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

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ cat file1 file2 > file3
```

7) Write the command to rename file2 as markinfo.

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ mv file2 markinfo
```

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

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ cat file1 > reginfo
```

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

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ ls -li file1 markinfo reginfo
27008378 file1 27008377 markinfo 27008383 reginfo
```

10) Write the command to delete file1.

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ rm file1
```

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

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ wc -l markinfo
wc: markinfo: No such file or directory
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ wc -l markinfo
4 markinfo
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ wc -w markinfo
16 markinfo
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ wc -m markinfo
51 markinfo
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ wc markinfo
4 16 51 markinfo
```

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

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ cat > Personalinfo
Name: Surbhi
Reg no - 2241011233
Address - Bhubaneshwar
^C
```

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

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ tac markinfo
Sem 4 - 8.2
Sem 3 - 8.98
Sem 2 - 9.61
Sem 1 - 9.79
```

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

```
cmp: personalinfo: No such file or directory
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ cmp reginfo Personalinfo
reginfo Personalinfo differ: byte 1, line 1
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ diff reginfo Personalinfo
1,5c1,3
< Surbhi Kumari,
< Registration No - 2241011233
< Branch - CSE
< Semester - 5th
< Section - 2241028
\ No newline at end of file
---
> Name: Surbhi
> Reg no - 2241011233
> Address - Bhubaneswar
```

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

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ ls -l | wc -l
4
```

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.

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ ls -l | grep -v 'filelist$' > filelist
```

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

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ chmod a+w reginfo
```

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

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ chmod a-w reginfo
```

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

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ chmod a+rwX reginfo
```

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

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ date; pwd
Friday 20 September 2024 03:22:56 PM IST
/home/student/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ date; pwd | wc -l
Friday 20 September 2024 03:23:13 PM IST
  1      1      68 -
wc: 1: No such file or directory
  1      1      68 total
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ (date; pwd) | wc -l
wc: 1: command not found
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ (date; pwd) | wc -l
  2      8     109 -
wc: 1: No such file or directory
  2      8     109 total
```

21) Interpret the output of the following commands:

`echo *`

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/D0Sass1/dir1$ echo *
file3 filelist marksinfo Personalinfo reginfo
```

echo ***

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1/dir1$ echo ***
file3 filelist marksinfo Personalinfo reginfo
```

echo '***'

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1/dir1$ echo '***'
***
```

echo ***

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1/dir1$ echo \***
***
```

echo ***

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1/dir1$ 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

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1/dir1$ echo */*
*/*
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1/dir1$ echo Don't do this
> ^C
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1/dir1$ echo "Don't do this" (Quotes of one
kind protect quotes of other kind)
bash: syntax error near unexpected token `('
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1/dir1$ echo Hello #world
Hello
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1/dir1$ echo "Hello #world"
Hello #world
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1/dir1$ echo 'Hello #world'
Hello #world
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1/dir1$ echo date
date
```

echo 'date'

echo "date"

echo `date`

```
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1/dir1$ echo 'date'
date
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1/dir1$ echo "date"
date
student@iteradmin-Vostro-3268:~/Desktop/2241011233_Surbhi/DOS_2241011233/DOSass1/dir1$ echo `date`
Friday 20 September 2024 03:28:18 PM IST
```