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 hirarchy: -> DOS_Regdno ->DOSass1-

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop (main)
$ mkdir DOS_2341004117

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop (main)
$ cd DOS_2341004117

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117 (main)
$ pwd
/c/Users/asus/OneDrive/Desktop/DOS_2341004117

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117 (main)
$ mkdir DOSass1

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117 (main)
$ cd DOSass1

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1 (main)
$ pwd
/c/Users/asus/OneDrive/Desktop/DOS_2341004117/DOSass1

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1 (main)
$ mkdir dir1

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1 (main)
$ cd dir1

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (mai
n)
$ pwd
/c/Users/asus/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1
```

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

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (mai
n)
$ cd ..

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1 (main)
$ pwd
/c/Users/asus/OneDrive/Desktop/DOS_2341004117/DOSass1

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1 (main)
$ mkdir dir2

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1 (main)
$ cd dir2

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir2 (mai
n)
$ pwd
/c/Users/asus/OneDrive/Desktop/DOS_2341004117/DOSass1/dir2
```

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

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir2 (main)
$ cd ..

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1 (main)
$ ls
dir1/  dir2/

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1 (main)
$ cd ..

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117 (main)
$ ls
DOSass1/

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117 (main)
$ pwd
/c/Users/asus/OneDrive/Desktop/DOS_2341004117

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117 (main)
$ rmdir DOSass1/dir2

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117 (main)
$ pwd
/c/Users/asus/OneDrive/Desktop/DOS_2341004117

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117 (main)
$ cd DOSass1

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1 (main)
$ 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.

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1 (main)
$ cd dir1

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ pwd
/c/Users/asus/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ cat > file1
Name :- Koushik Das
Regd. No. :- 2341004117
Branch :- CSIT
Semester :- 5th
Section :- 23413B2

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ cat file1
Name :- Koushik Das
Regd. No. :- 2341004117
Branch :- CSIT
Semester :- 5th
Section :- 23413B2
```

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

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ cat > file2
1st Semester : 7.5 SGPA
2nd Semester : 7.4 SGPA
3rd Semester : 7.7 SGPA
4th Semester : 7.8 SGPA

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ cat file2
1st Semester : 7.5 SGPA
2nd Semester : 7.4 SGPA
3rd Semester : 7.7 SGPA
4th Semester : 7.8 SGPA
```

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

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ cat file1 file2 > file3

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ cat file3
Name :- Koushik Das
Regd. No. :- 2341004117
Branch :- CSIT
Semester :- 5th
Section :- 23413B2
1st Semester : 7.5 SGPA
2nd Semester : 7.4 SGPA
3rd Semester : 7.7 SGPA
4th Semester : 7.8 SGPA
```

7) Write the command to rename file2 as markinfo.

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ mv file2 markinfo

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ ls
file1  file3  markinfo
```

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

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ cp file1 reginfo

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ cat reginfo
Name :- Koushik Das
Regd. No. :- 2341004117
Branch :- CSIT
Semester :- 5th
Section :- 23413B2
```

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

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ ls -i file1 markinfo reginfo
41376821576569455 file1   19140298416514604 markinfo   21392098230243403 reginfo
```

10) Write the command to delete file1.

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ rm file1

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ ls
file3   markinfo   reginfo
```

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

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ wc markinfo
 4 20 96 markinfo
```

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

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ cat > Personalinfo
Name :- Koushik Das
Regd. No. :- 2341004117
Address :- Jagamara , BBSR , Odisha

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ cat Personalinfo
Name :- Koushik Das
Regd. No. :- 2341004117
Address :- Jagamara , BBSR , Odisha
```

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

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ tac markinfo
4th Semester : 7.8 SGPA
3rd Semester : 7.7 SGPA
2nd Semester : 7.4 SGPA
1st Semester : 7.5 SGPA
```

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

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ cmp reginfo Personalinfo
reginfo Personalinfo differ: char 45, line 3

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ diff reginfo Personalinfo
3,5c3
< Branch :- CSIT
< Semester :- 5th
< Section :- 23413B2
---
> Address :- Jagamara , BBSR , Odisha
```

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

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ ls -1 | wc -l
5
```

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.

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (mai
n)
$ ls -1 | grep -v '^filelist$' > filelist

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (mai
n)
$ cat filelist
Personalinfo
file3
markinfo
reginfo
```

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

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (mai
n)
$ chmod a+w reginfo

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ ls -l reginfo
-rw-r--r-- 1 asus 197121 94 Oct  8 21:20 reginfo
```

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

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ chmod g-w reginfo

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ ls -l reginfo
-rw-r--r-- 1 asus 197121 94 Oct  8 21:20 reginfo
```

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

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ chmod a+rwx reginfo

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ ls -l reginfo
-rw-r--r-- 1 asus 197121 94 Oct  8 21:20 reginfo
```

20) Differentiate between following commands:
    date; pwd

date; pwd | wc -l

(date; pwd) | wc -l

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ date; pwd
Thu Oct  9 00:13:05 IST 2025
/c/Users/asus/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ date; pwd | wc -l
Thu Oct  9 00:14:19 IST 2025
1

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ (date;pwd) | wc -l
2
```

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`

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ echo *
Personalinfo file3 filelist markinfo reginfo

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ echo ***
Personalinfo file3 filelist markinfo reginfo

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ echo '***'
***

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ echo \***
***

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ echo \*\*\*
***

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ echo */*
*/*
```

```
asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ echo Don't do this
> echo "Don't do this"
> echo Hello # World
> echo "Hello # World"
Dont do this
echo "Dont do this
echo Hello # World
echo Hello

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ echo Don't do this
> Don't do this
Dont do this
Dont do this

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ echo Hello # world
Hello

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ echo "Hello # world"
Hello # world

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ echo 'Hello # world'
Hello # world

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ echo date
date

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ echo 'date'
date

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ echo "date"
date

asus@LAPTOP-BIHGEI3G MINGW64 ~/OneDrive/Desktop/DOS_2341004117/DOSass1/dir1 (main)
$ echo `date`
Thu Oct 9 00:31:27 IST 2025
```