ASSIGNMENT 2: Familiarization with basic Commands in Unix Operating System and Shell Programming

Objective of this Assignment:

- To learn basic concepts of shell programming
- To learn concept of command line argument in shell script

Q1. Write a shell script named as **prog** for merge for merge the content of files a.txt, b.txt and c.txt sort them and save the result in a file called **result** and display the sorted output on the screen.

(Note: a.txt, b.txt and c.txt file contain some numerical value. Mark the script an executable file and run it as a command using its name only.)

Commands:

```
cat > a.txt
        SWASTIK MULLICK
        2241013379
        CSE (Core)
        2241011
cat > b.txt
        8.45
        8.66
        8.71
        8.97
cat > c.txt
        SWASTIK MULLICK
        Kolkata, West Bengal
        700112
gedit prog
        cat a.txt b.txt c.txt >> d.txt
        sort d.txt >> result
        cat result
./prog
ls -l prog
chmod a+x prog
ls -l prog
./prog
```

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ ./prog
bash: ./prog: Permission denied
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ ls -l prog
-rw-rw-r-- 1 student student 63 Oct  5 08:35 prog
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ chmod a+x prog
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ ls -l prog
-rwxrwxr-x 1 student student 63 Oct  5 08:35 prog
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ ./prog
2241011
2241013379
700112
8.45
8.66
8.71
8.97
CSE (Core)
Kolkata, West Bengal
SWASTIK MULLICK
SWASTIK MULLICK
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$
```

Q2. Write a shell script named as **systeminfo** that will display the information about the login name of the user, name of the Unix system used by the user, type of the SHELL, Path of current working directory of the user and list of file contain in current working directory.
(Make the script an executable file and run it as a command using its name only.)

Commands:

gedit systeminfo

whoami

uname

echo $SHELL

pwd

ls

ls -l systeminfo

chmod a+x systeminfo

ls -l systeminfo

./systeminfo

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ gedit systeminfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ ls -l systeminfo
-rw-rw-r-- 1 student student 32 Oct  5 08:42 systeminfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ chmod a+x systeminfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ ls -l systeminfo
-rwxrwxr-x 1 student student 32 Oct  5 08:42 systeminfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ ./systeminfo
student
Linux
/bin/bash
/home/student/Desktop/2241013379/DOS/Lab_asgn_2
 a.txt   b.txt   c.txt   d.txt   LAB2.docx  'Lab Assignment-2_DOS(CSE3249)_240920_153042.pdf'   prog   Q1.png   result   systeminfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$
```

Q3. Write a shell script named as **dtcal** for displaying both the system and calendar for specific month, say march 2022, in the given format:-

Date : specific date

Calendar : current calendar

(Make the script an executable file and run it as a command using its name only.)

Commands:

gedit dtcal

echo “Date : ” `date`

echo “Calendar : ” `cal`

ls -l dtcal

chmod a+x dtcal

ls -l dtcal

./dtcal

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ gedit dtcal
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ ls -l dtcal
-rw-rw-r-- 1 student student 48 Oct  5 08:47 dtcal
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ chmod a+x dtcal
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ ls -l dtcal
-rwxrwxr-x 1 student student 48 Oct  5 08:47 dtcal
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ ./dtcal
Date :  Saturday 05 October 2024 08:49:00 AM IST
Calendar :  October 2024 Su Mo Tu We Th Fr Sa 1 2 3 4  5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$
```

Q4. Write a shell script named as **nvwc** which will display the filename and linecount, wordcount and char count of the file dtcal in the following format:

Filename: dtcal

Line count: -

Word count: -

Char count: -

(Make the script an executable file and run it as a command using its name only.)

Commands:

gedit nvwc &

echo “Filename : ” `dtcal`

echo “Linecount : ” `wc -l < dtcal`

echo “Wordcount : ” `wc -w < dtcal`

echo “Charcount : ” `wc -c < dtcal`

chmod a+x nvwc

./nvwc

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ gedit nvwc &
[1] 3395
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ chmod a+x nvwc
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ ./nvwc
Filename :  dtcal
Linecount :  3
Wordcount :  10
Charcount :  48
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$
```

Q5. Write a shell script named as **nvwc2** which will display the filename and linecount, word count and char count of **any file** given as argument to nvwc2 in the following format:

filename	linecount	wordcount	charcount
file 1	-	-	-

(Make the script an executable file and run it as a command using its name only.)

Commands:

gedit nvwc2 &

```
echo “filename        linecount              wordcount              charcount”
echo “$1              ” `wc -l < $1` “       ” `wc -w < $1` “       ” `wc -c < $1`
```

chmod a+x nvwc2

./nvwc2 dtcal

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ gedit nvwc2 &
[2] 3627
[1]   Done                    gedit nvwc
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ chmod a+x nvwc2
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ ./nvwc2
filename                linecount               wordcount               charcount
dtcal 3 dtcal 10 dtcal 48 dtcal
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ ./nvwc2 dtcal
filename                linecount               wordcount               charcount
dtcal                   3                       10                      48
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$
```

Q6. Write a shell script named as **darg** to display the total number of command line arguments along with the first two arguments.

-Modify the script to display all the arguments.

(Make the script an executable file and run it as a command using its name only.)

Commands:

gedit darg &

```
echo “Number of command line argument(s) provided: $#”
echo “Complete list of argument(s): $@”
```

chmod a+x darg

./darg dtcal systeminfo

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ gedit darg &
[3] 4108
[2]   Done                    gedit nvwc2
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ chmod a+x darg
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ ./darg dtcal systeminfo
Number of command line argument(s) provided: 2
Complete list of argument(s): dtcal systeminfo
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$
```

Q7. Write a shell script named as **ndisp** that will take three command line arguments specifying the value of n, m, and a filename and display the first n numbers of lines and last m number of lines of the file given as argument.

(Make the script an executable file and run it as a command using its name only.)

Commands:

cat > year

January

February

March

April

May

June

July

August

September

October

November

December

gedit ndisp

```
echo "The first $1 lines of the file $3"
head -$1 $3
echo "The last $2 lines of the file $3"
tail -$2 $3
```

chmod a+x ndisp

./ndisp 9 6 year

Output:

```
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ gedit ndisp
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ chmod a+x ndisp
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$ ./ndisp 9 6 year
The first 9 lines of the file year
January
February
March
April
May
June
July
August
September
The last 6 lines of the file year
July
August
September
October
November
December
student@iteradmin-Vostro-3268:~/Desktop/2241013379/DOS/Lab_asgn_2$
```