

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.

Questions And Answers:

Q1) Write a shell script named as prog 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. Make the script an executable file and run it as a command using its name only.)

Ans :

gedit a.txt b.txt c.txt

ls

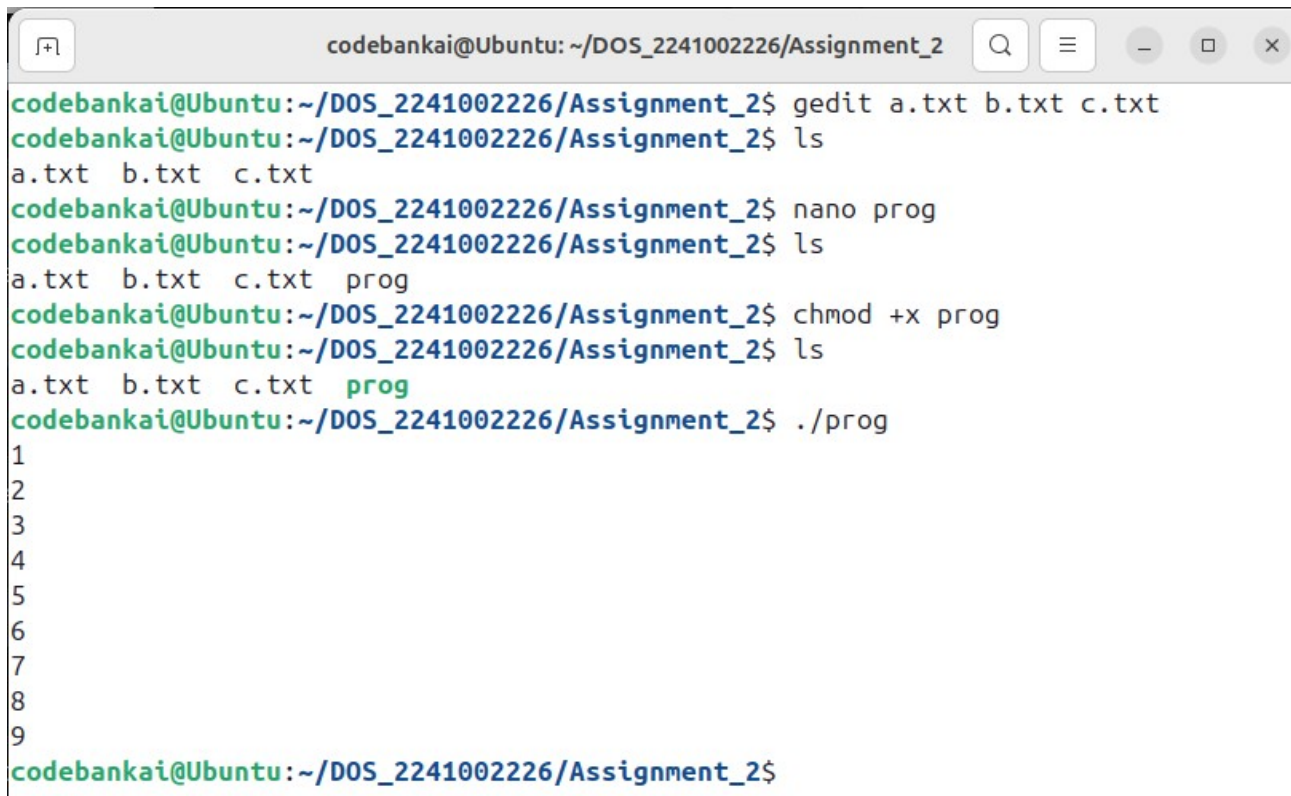
nano prog

ls

chmod +x prog

./prog

OUTPUT :



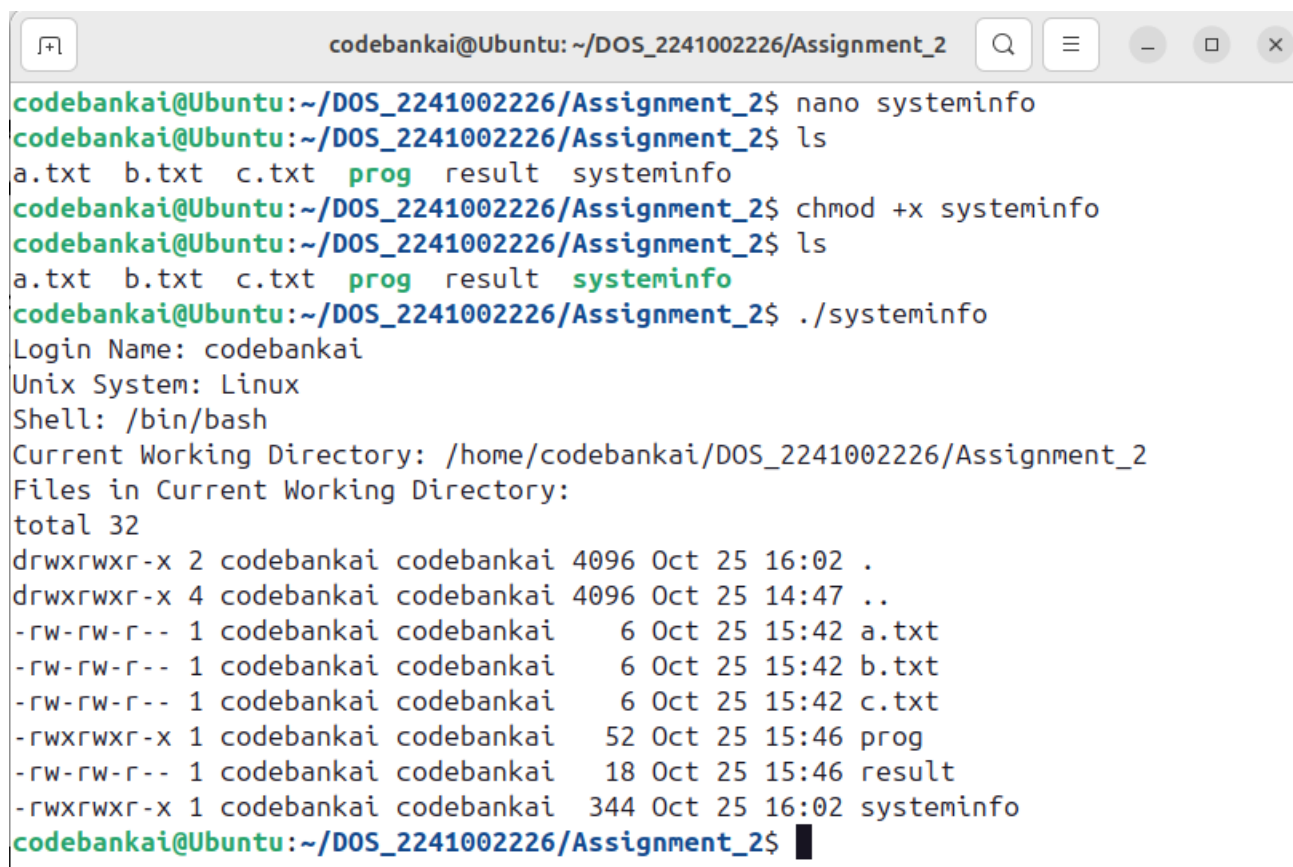
```
codebankai@Ubuntu: ~/DOS_2241002226/Assignment_2
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ gedit a.txt b.txt c.txt
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ls
a.txt b.txt c.txt
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ nano prog
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ls
a.txt b.txt c.txt prog
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ chmod +x prog
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ls
a.txt b.txt c.txt prog
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ./prog
1
2
3
4
5
6
7
8
9
codebankai@Ubuntu:~/DOS_2241002226/Assignment_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.)

Ans)

```
nano systeminfo
echo "Login name of the user: $USER"
echo "Name of the Unix system: $(uname)"
echo "Type of shell: $SHELL"
echo "Path of current working directory: $(pwd)"
echo "List of files in current working directory:"
ls
```

OUTPUT :



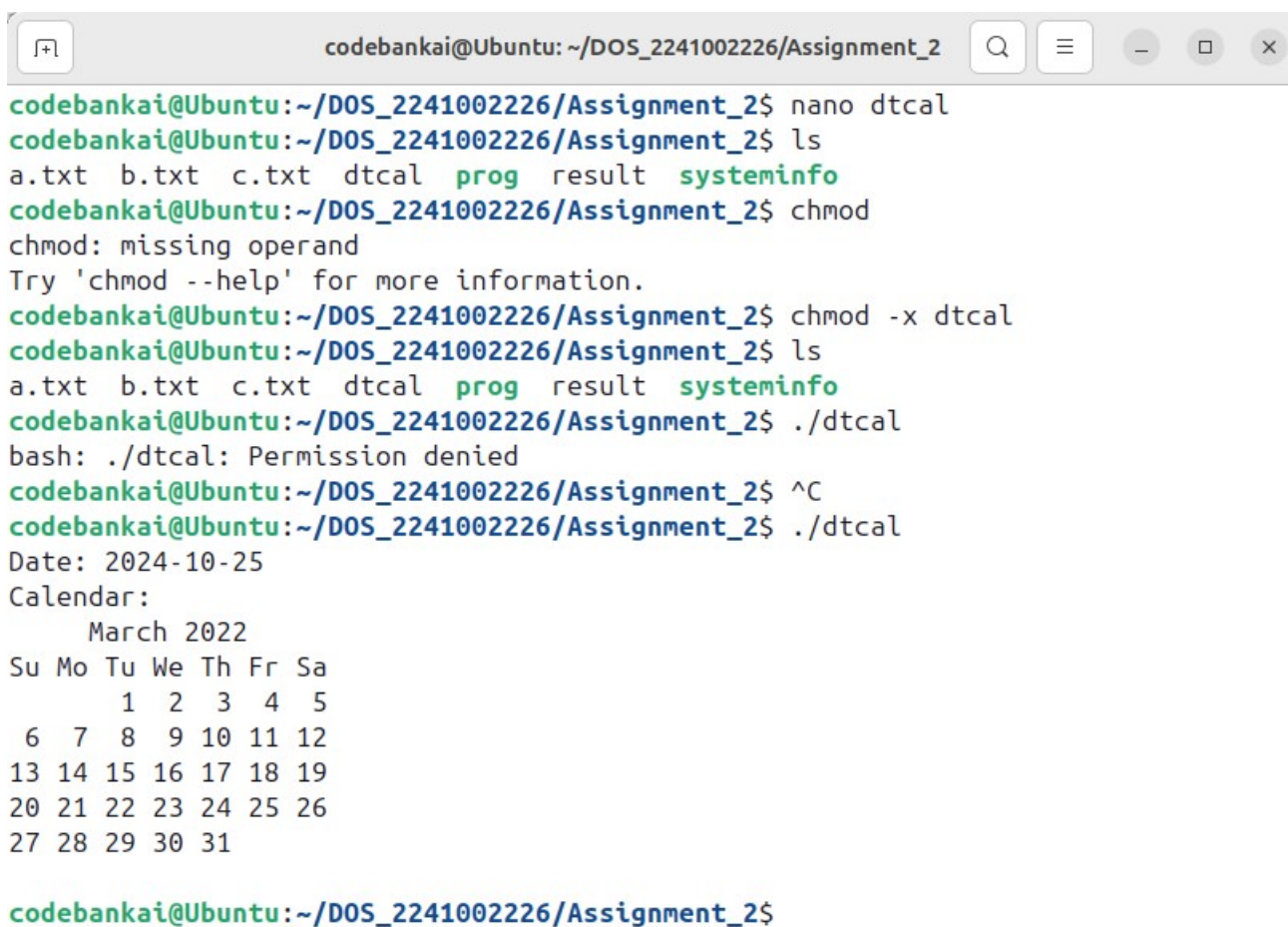
```
codebankai@Ubuntu: ~/DOS_2241002226/Assignment_2
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ nano systeminfo
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ls
a.txt b.txt c.txt prog result systeminfo
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ chmod +x systeminfo
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ls
a.txt b.txt c.txt prog result systeminfo
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ./systeminfo
Login Name: codebankai
Unix System: Linux
Shell: /bin/bash
Current Working Directory: /home/codebankai/DOS_2241002226/Assignment_2
Files in Current Working Directory:
total 32
drwxrwxr-x 2 codebankai codebankai 4096 Oct 25 16:02 .
drwxrwxr-x 4 codebankai codebankai 4096 Oct 25 14:47 ..
-rw-rw-r-- 1 codebankai codebankai 6 Oct 25 15:42 a.txt
-rw-rw-r-- 1 codebankai codebankai 6 Oct 25 15:42 b.txt
-rw-rw-r-- 1 codebankai codebankai 6 Oct 25 15:42 c.txt
-rwxrwxr-x 1 codebankai codebankai 52 Oct 25 15:46 prog
-rw-rw-r-- 1 codebankai codebankai 18 Oct 25 15:46 result
-rwxrwxr-x 1 codebankai codebankai 344 Oct 25 16:02 systeminfo
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$
```

Q3) Write a shell script named as dtcal for displaying both the system date 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.)

Ans)

```
nano dtcal
echo "Date : $(date '+%Y-%m-%d')"
echo "Calendar : "
cal 10 2024
```

OUTPUT :

A terminal window titled 'codebankai@Ubuntu: ~/DOS_2241002226/Assignment_2' showing the following commands and output:

```
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ nano dtcal
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ls
a.txt b.txt c.txt dtcal prog result systeminfo
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ chmod
chmod: missing operand
Try 'chmod --help' for more information.
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ chmod -x dtcal
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ls
a.txt b.txt c.txt dtcal prog result systeminfo
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ./dtcal
bash: ./dtcal: Permission denied
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ^C
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ./dtcal
Date: 2024-10-25
Calendar:
    March 2022
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

codebankai@Ubuntu:~/DOS_2241002226/Assignment_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: - Charcount: - (Make the script an executable file and run it as a command using its name only.)

Ans)

```
nano nvwc
filename="dtcal"
if [ -f "$filename" ]; then
echo "Filename: $filename"
echo "Line count: $(wc -l < $filename)"
echo "Word count: $(wc -w < $filename)"
echo "Char count: $(wc -m < $filename)"
else
echo "File $filename does not exist."
fi
```

OUTPUT :

A terminal window titled 'codebankai@Ubuntu: ~/DOS_2241002226/Assignment_2' showing the following commands and output:

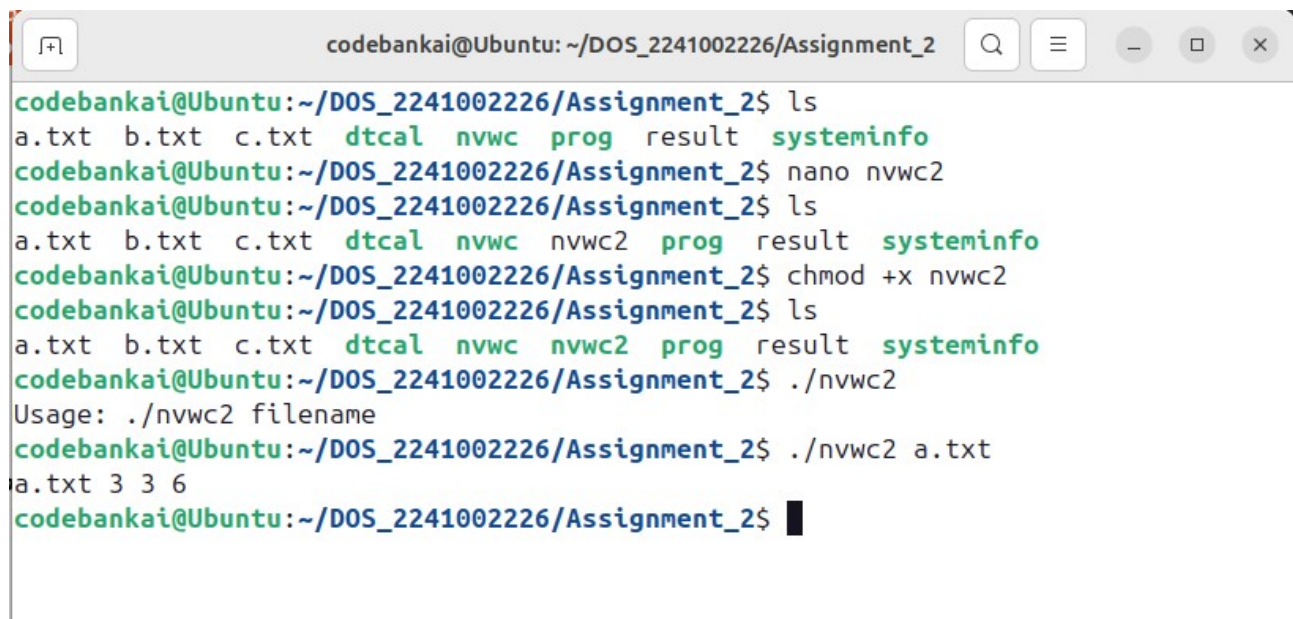
```
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ls
a.txt b.txt c.txt dtcal prog result systeminfo
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ nano nvwc
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ls
a.txt b.txt c.txt dtcal nvwc prog result systeminfo
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ chmod +x nvwc
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ls
a.txt b.txt c.txt dtcal nvwc prog result systeminfo
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ./nvwc
Filename: dtcal
Line count: 5
Word count: 16
Char count: 101
codebankai@Ubuntu:~/DOS_2241002226/Assignment_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 file1 - - - (Make the script an executable file and run it as a command using its name only.)

Ans)

```
nano nvwc2
if [ -f "$1" ]; then
filename="$1"
linecount=$(wc -l < "$filename")
wordcount=$(wc -w < "$filename")
charcount=$(wc -m < "$filename")
echo "$filename $linecount $wordcount $charcount"
else echo "File $1 does not exist."
fi
```

OUTPUT :

A terminal window titled 'codebankai@Ubuntu: ~/DOS_2241002226/Assignment_2' showing the following commands and output:

```
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ls
a.txt b.txt c.txt dtcal nvwc prog result systeminfo
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ nano nvwc2
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ls
a.txt b.txt c.txt dtcal nvwc nvwc2 prog result systeminfo
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ chmod +x nvwc2
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ls
a.txt b.txt c.txt dtcal nvwc nvwc2 prog result systeminfo
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ./nvwc2
Usage: ./nvwc2 filename
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ./nvwc2 a.txt
a.txt 3 3 6
codebankai@Ubuntu:~/DOS_2241002226/Assignment_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.)

Ans)

```
echo "Total number of arguments: $#"  
if [ $# -ge 2 ]; then  
echo "First argument: $1"  
echo "Second argument: $2"  
else  
echo "Less than two arguments provided."  
fi  
Ctrl +x then y then enter  
chmod +x darg  
./darg arg1 arg2 arg3  
MODIFICATION :  
nano darg  
echo "Total number of arguments: $#"  
echo "Arguments: $@"  
Ctrl +x then y then enter  
./darg arg1 arg2 arg3 arg4
```

OUTPUT :

A terminal window titled 'codebankai@Ubuntu: ~/DOS_2241002226/Assignment_2' showing the execution of a shell script. The user runs 'ls' showing files 'a.txt', 'b.txt', 'c.txt', 'dtcal', 'nvw', 'nvw2', 'prog', 'result', and 'systeminfo'. Then they run 'nano ndisp' and 'chmod +x ndisp'. After running 'ls' again, 'ndisp' is now visible. Finally, they run './ndisp 2 1 c.txt', which outputs 'Displaying the first 2 lines of c.txt:' followed by lines 7 and 8, and then 'Displaying the last 1 lines of c.txt:' followed by line 9.

```
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ls  
a.txt b.txt c.txt dtcal nvw nvw2 prog result systeminfo  
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ nano ndisp  
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ chmod +x ndisp  
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ls  
a.txt b.txt c.txt dtcal ndisp nvw nvw2 prog result systeminfo  
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$ ./ndisp 2 1 c.txt  
Displaying the first 2 lines of c.txt:  
7  
8  
  
Displaying the last 1 lines of c.txt:  
9  
codebankai@Ubuntu:~/DOS_2241002226/Assignment_2$
```