

**Laboratory Assignment #No. 2**  
**On**  
**Design of Operating System (CSE 4049)**

**Submitted by**

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**Semester : 5<sup>th</sup>**  
**Branch : CSE**  
**Section : 15 ('O')**  
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**Admission Batch : 2021**



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**FACULTY OF ENGINEERING & TECHNOLOGY (ITER)**  
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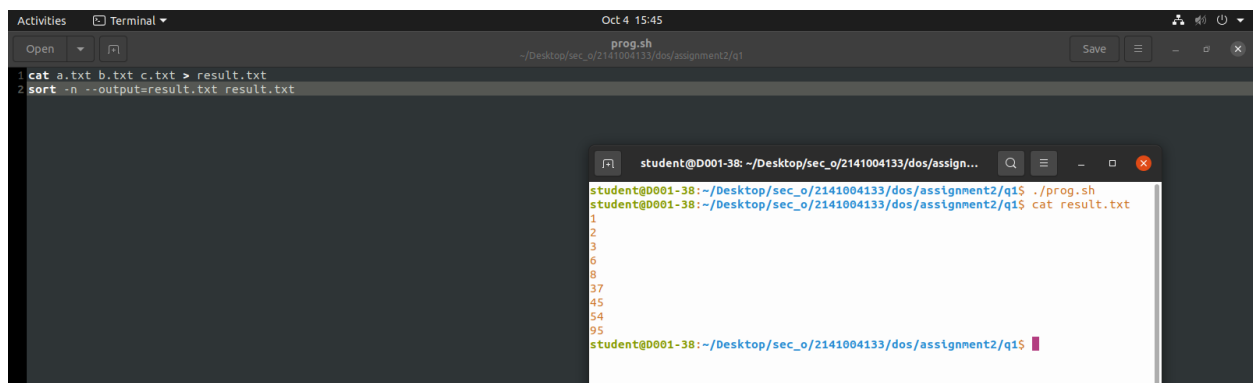
## Assignment 2: Familiarization with basic Commands in Unix Operating System and Shell Programming

### Objective of this Assignment:

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

1. 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.)

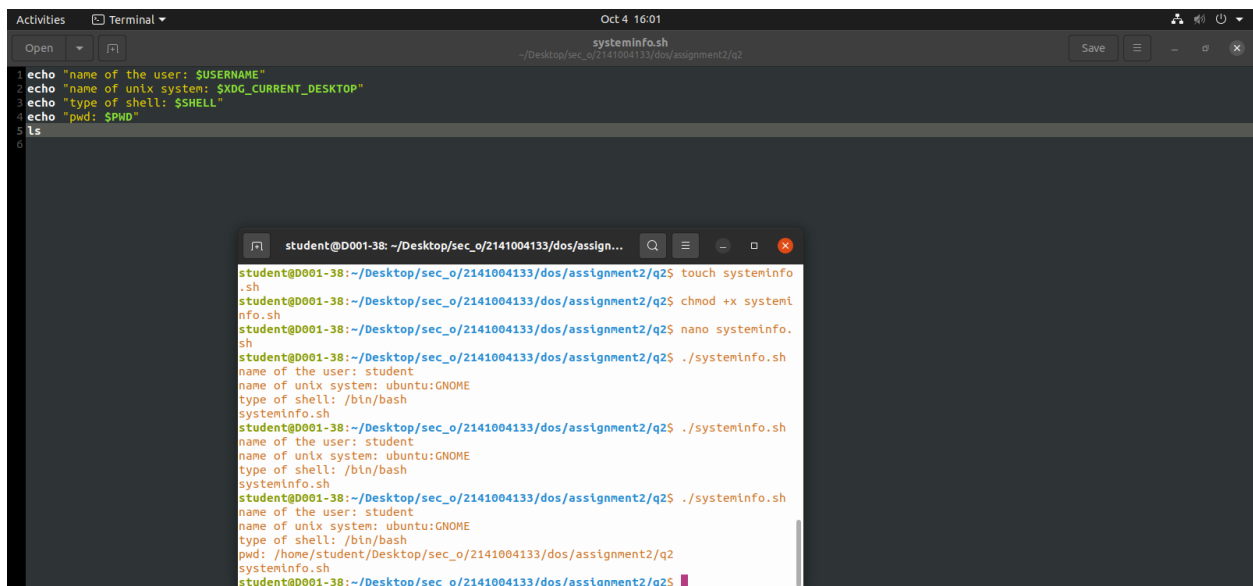


```
Oct 4 15:45
prog.sh
~/Desktop/sec_o/2141004133/dos/assignment2/q1
cat a.txt b.txt c.txt > result.txt
sort -n --output=result.txt result.txt

student@D001-38: ~/Desktop/sec_o/2141004133/dos/assign...
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q1$ ./prog.sh
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q1$ cat result.txt
1
2
3
6
8
37
45
54
95
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q1$
```

2. 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.)



```
Oct 4 16:01
systeminfo.sh
~/Desktop/sec_o/2141004133/dos/assignment2/q2
1 echo "name of the user: $USERNAME"
2 echo "name of unix system: $XDG_CURRENT_DESKTOP"
3 echo "type of shell: $SHELL"
4 echo "pwd: $PWD"
5 ls
6


student@D001-38:~/Desktop/sec_o/2141004133/dos/assign...
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q2$ touch systeminfo.sh
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q2$ chmod +x systeminfo.sh
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q2$ nano systeminfo.sh
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q2$ ./systeminfo.sh
name of the user: student
name of unix system: ubuntu:GNOME
type of shell: /bin/bash
systeminfo.sh
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q2$ ./systeminfo.sh
name of the user: student
name of unix system: ubuntu:GNOME
type of shell: /bin/bash
systeminfo.sh
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q2$ ./systeminfo.sh
name of the user: student
name of unix system: ubuntu:GNOME
type of shell: /bin/bash
pwd: /home/student/Desktop/sec_o/2141004133/dos/assignment2/q2
systeminfo.sh
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q2$
```

3. 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

Calender : current calendar

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



```
Oct 11 15:37
dtcal.sh
~/Desktop/sec_o/2141004133/dos/assignment2/q3
1 echo "Date : " $(date -d"03/08/2022" "+%A %d-%m-%Y")
2 echo "Calendar : " $(date -d"03/08/2022" "+%B %Y")

student@D001-38: ~/Desktop/sec_o/2141004133/dos/assign...
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q3$ ./dtcal.sh
Date : Tuesday 08-03-2022
Calendar : March 2022
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q3$
```

4. 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:

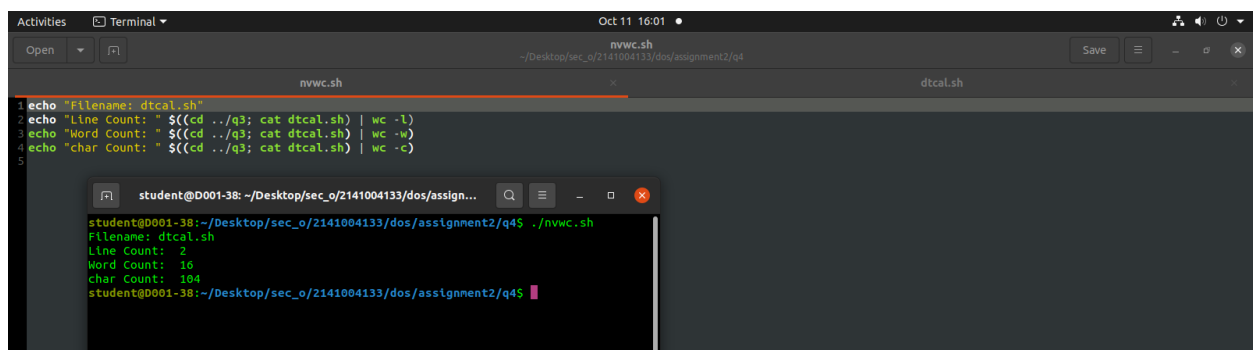
Filename : dtcal

Line count :-

Word count :-

Charcount :-

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



```
Oct 11 16:01
nvwc.sh
~/Desktop/sec_o/2141004133/dos/assignment2/q4
1 echo "Filename: dtcal.sh"
2 echo "Line Count: " $(cat dtcal.sh | wc -l)
3 echo "Word Count: " $(cat dtcal.sh | wc -w)
4 echo "Char Count: " $(cat dtcal.sh | wc -c)
5

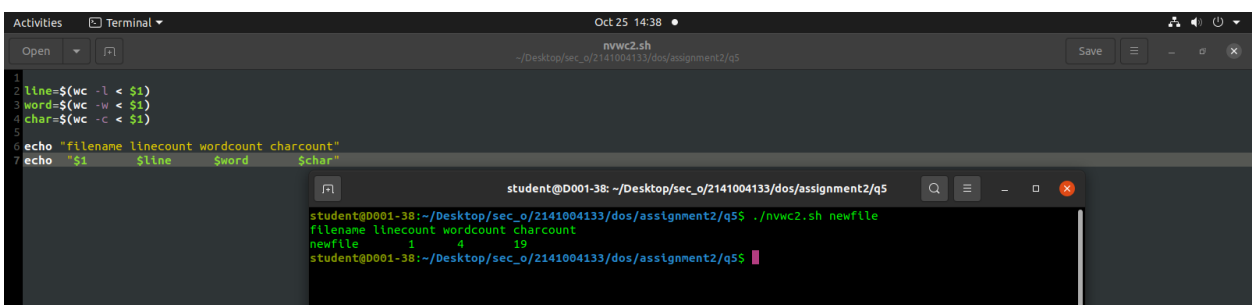
student@D001-38: ~/Desktop/sec_o/2141004133/dos/assign...
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q4$ ./nvwc.sh
Filename: dtcal.sh
Line Count: 2
Word Count: 16
Char Count: 104
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q4$
```

5. 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.)

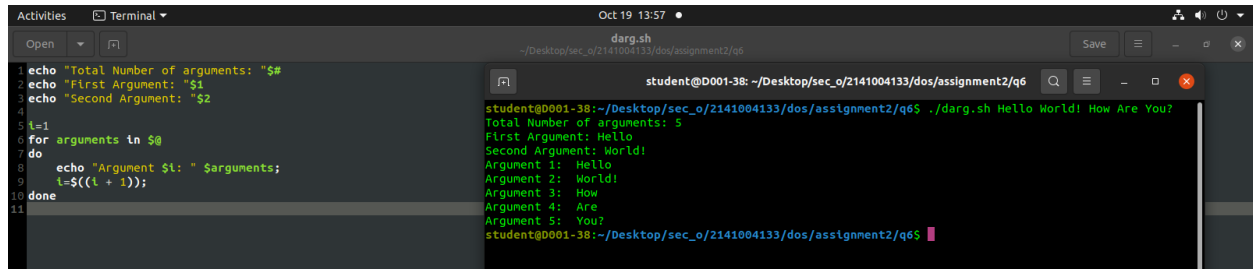


```
Oct 25 14:38
nvwc2.sh
~/Desktop/sec_o/2141004133/dos/assignment2/q5
1
2 line=$(wc -l < $1)
3 word=$(wc -w < $1)
4 char=$(wc -c < $1)
5
6 echo "filename linecount wordcount charcount"
7 echo "$1 $line $word $char"

student@D001-38: ~/Desktop/sec_o/2141004133/dos/assignment2/q5
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q5$ ./nvwc2.sh newfile
filename linecount wordcount charcount
newfile 1 4 19
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q5$
```

6. 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.

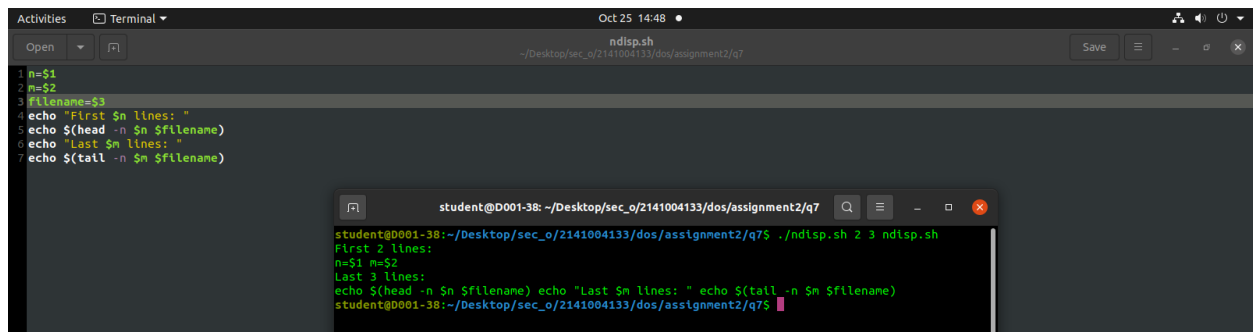
(Make the script an executable file and run it as a command using its name only.)



```
Activities Terminal
Oct 19 13:57
darg.sh
~/Desktop/sec_o/2141004133/dos/assignment2/q6
Save
student@D001-38: ~/Desktop/sec_o/2141004133/dos/assignment2/q6
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q6$ ./darg.sh Hello World! How Are You?
Total Number of arguments: 5
First Argument: Hello
Second Argument: World!
Argument 1: Hello
Argument 2: World!
Argument 3: How
Argument 4: Are
Argument 5: You?
```

7. 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 number 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.)



```
Activities Terminal
Oct 25 14:48
ndisp.sh
~/Desktop/sec_o/2141004133/dos/assignment2/q7
Save
student@D001-38: ~/Desktop/sec_o/2141004133/dos/assignment2/q7
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q7$ ./ndisp.sh 2 3 ndisp.sh
First 2 lines:
n=1 m=2
Last 3 lines:
echo $(head -n $n $filename) echo "Last $m lines: " echo $(tail -n $n $filename)
student@D001-38:~/Desktop/sec_o/2141004133/dos/assignment2/q7$
```