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

Q1.

```
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ nano a.txt #File already exists
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ nano b.txt #File already exists
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ nano c.txt #File already exists
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ nano prog.sh
#! /bin/bash
cat a.txt b.txt c.txt > result
cat result | sort -n
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ chmod +x prog.sh
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ ls -l
total 16
-rw-r--r-- 1 srikant srikant 18 Oct  3 12:45 a.txt
-rw-r--r-- 1 srikant srikant 15 Oct  3 12:46 b.txt
-rw-r--r-- 1 srikant srikant 26 Oct  3 12:46 c.txt
-rwxr-xr-x 1 srikant srikant 70 Oct  3 12:55 prog.sh
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ ./prog.sh
a       l
a       l
b       m
b       z
c       1
c       1
d       1
e       2
e       2
f       3
f       3
h       5
k       6
k       7
```

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Q2.

```
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ nano systeminfo.sh
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ cat systeminfo.sh
#!/bin/bash
# Display the login name of the user
echo "Login Name: $USER"
# Display the name of the Unix system
echo "Unix System: $(uname -s)"
# Display the type of the SHELL
echo "Shell Type: $SHELL"
# Display the path of the current working directory
echo "Current Working Directory: $(pwd)"
# List the files in the current working directory
echo "Files in Current Directory:"
ls -l
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ chmod +x systeminfo.sh
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ ./systeminfo.sh
Login Name: srikant
Unix System: Linux
Shell Type: /bin/bash
Current Working Directory: /home/srikant/DOS_2241016519/ass2
Files in Current Directory:
total 24
-rw-r--r-- 1 srikant srikant  18 Oct  3 12:45 a.txt
-rw-r--r-- 1 srikant srikant  15 Oct  3 12:46 b.txt
-rw-r--r-- 1 srikant srikant  26 Oct  3 12:46 c.txt
-rwxr-xr-x 1 srikant srikant  70 Oct  3 12:55 prog.sh
-rw-r--r-- 1 srikant srikant  59 Oct  3 12:56 result
-rwxr-xr-x 1 srikant srikant 391 Oct  3 13:10 systeminfo.sh
```

Q3.

```
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ nano dtcal
```

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```
#!/bin/bash

# Display the current system date
echo "Date: $(date +'%Y-%m-%d')"

# Display the calendar for March 2022
echo "Calendar:"
ncal 03 2022

## To run it as a command using its name, we have to set the entered path in directory.
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ PATH=$PATH:$PWD

srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ dtcal
Date: 2024-10-03
Calendar:
      March 2022
Su          6 13 20 27
Mo          7 14 21 28
Tu    1     8 15 22 29
We    2     9 16 23 30
Th    3     10 17 24 31
Fr    4     11 18 25
Sa    5     12 19 26
```

Q4.

```
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ nano nvwc
#!/bin/bash

FILENAME="dtcal"
LINECOUNT=$(wc -l < "$FILENAME")
WORDCOUNT=$(wc -w < "$FILENAME")
CHARCOUNT=$(wc -c < "$FILENAME")
```

```
# Display the results
echo "Filename: $FILENAME"
echo "Line count: $LINECOUNT"
echo "Word count: $WORDCOUNT"
echo "Char count: $CHARCOUNT"
```

```
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ nvwc
Filename: dtcal
Line count: 8
Word count: 23
Char count: 149
```

Q5.

```
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ nano nvwc2
```

```
#!/bin/bash

# Specify the filename from the argument
FILENAME="$1"

# Get line count, word count, and character count
LINECOUNT=$(wc -l < "$FILENAME" 2>/dev/null)
WORDCOUNT=$(wc -w < "$FILENAME" 2>/dev/null)
CHARCOUNT=$(wc -c < "$FILENAME" 2>/dev/null)



LINECOUNT=${LINECOUNT:-'-'}
WORDCOUNT=${WORDCOUNT:-'-'}
CHARCOUNT=${CHARCOUNT:-'-'}

# Display the results
echo "$FILENAME $LINECOUNT $WORDCOUNT $CHARCOUNT"
```

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srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ chmod +x nvwc2

srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ ls -l nvwc2

-rwxr-xr-x 1 srikant srikant 483 Oct 3 13:39 nvwc2

srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ nvwc2 **a.txt** ## Pass arguments after the file name.

a.txt 9 9 18

Q6.

srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ nano darg

```
#!/bin/bash
# Get the total number of command line arguments
ARG_COUNT="$#"
echo "Total number of arguments: $ARG_COUNT"
echo "First argument: ${1}"
echo "Second argument: ${2}"
echo "All arguments: $@"
```

srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ chmod +x darg

srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ **darg** arg1 arg2 arg3 arg4 arg5 arg6

Total number of arguments: 6

First argument: arg1

Second argument: arg2

All arguments: arg1 arg2 arg3 arg4 arg5 arg6

Q7.

srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ nano ndisp

```
#! /bin/bash
n="$1"
m="$2"
filename="$3"
```

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```
if [ ! -f "$filename" ]; then
    echo "File '$filename' not found."
    exit 1
fi
echo "Displaying the first $n lines of '$filename':"
head -n "$n" "$filename"
echo "Displaying the last $m lines of '$filename':"
tail -n "$m" "$filename"
```

```
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ chmod +x ndisp
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ cat a.txt
a
z
k
l
b
e
c
h
f
srikant@SRIKANTs-PC:~/DOS_2241016519/ass2$ ndisp 4 5 a.txt
Displaying the first 4 lines of 'a.txt':
a
z
k
l
Displaying the last 5 lines of 'a.txt':
b
e
c
h
f
```