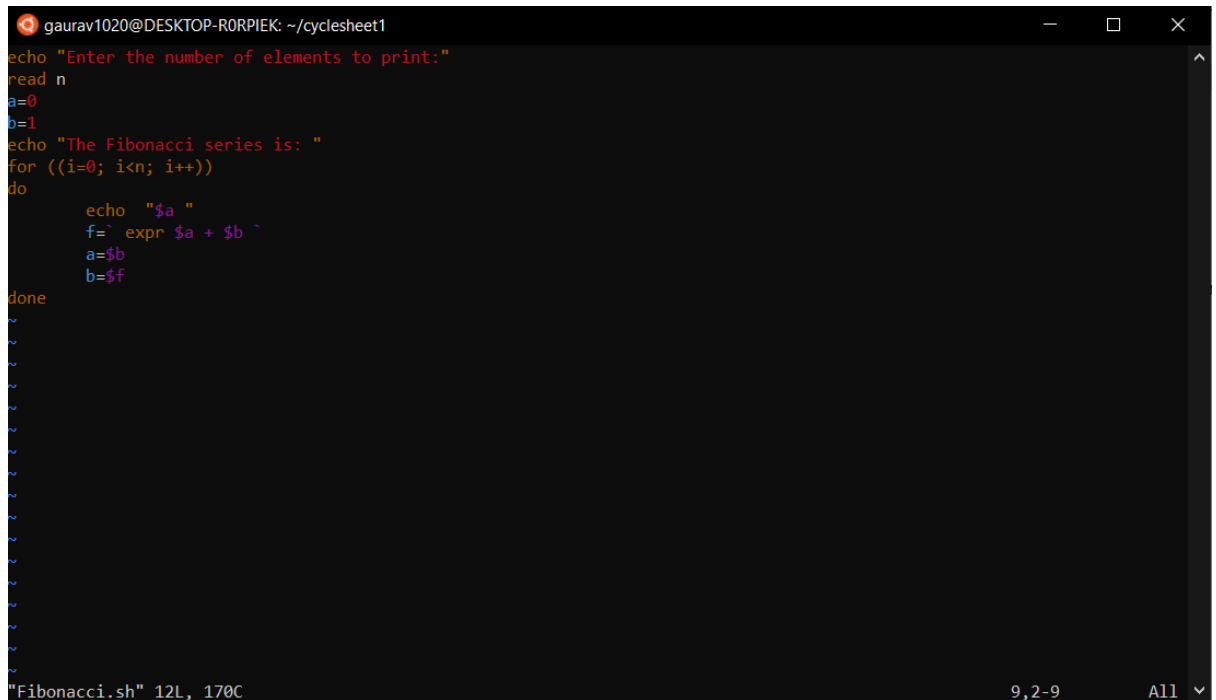


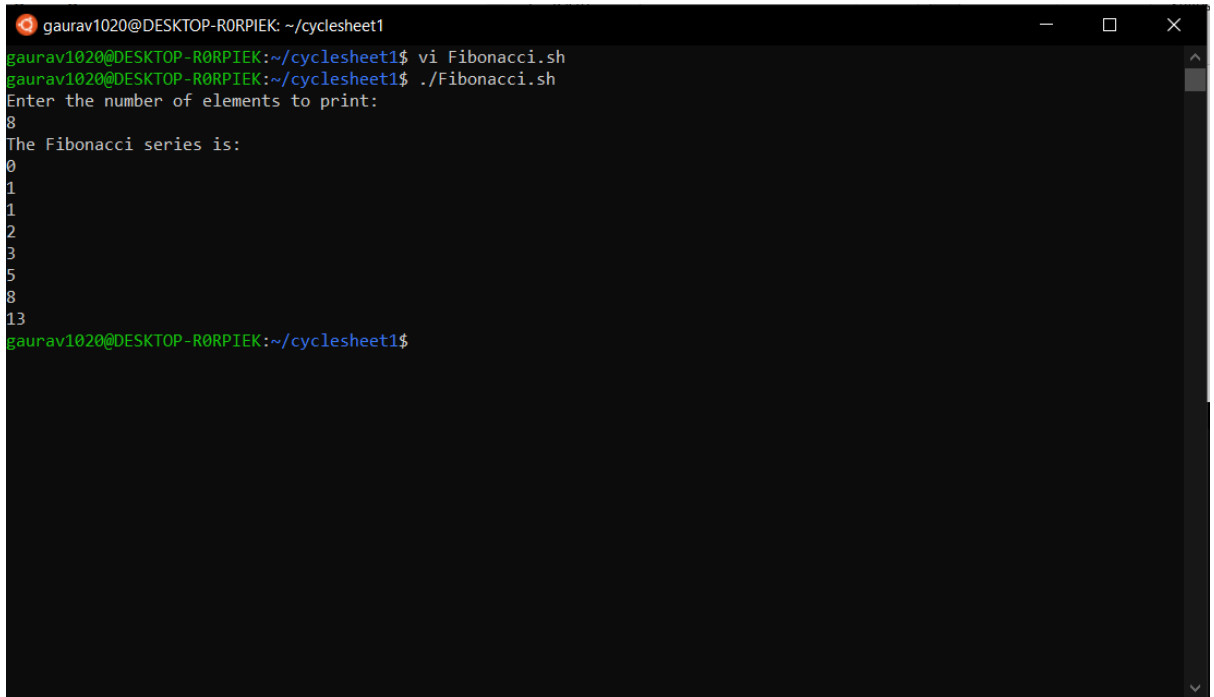
1) Study of basic Linux commands.

2) Write a shell script to find the sum of first 'N' numbers in Fibonacci series (use for loop)

```
echo "Enter the number of elements to print:"
read n
a=0
b=1
echo "The Fibonacci series is: "
for ((i=0; i<n; i++))
do
    echo "$a"
    f=`expr $a + $b `
    a=$b
    b=$f
done
```



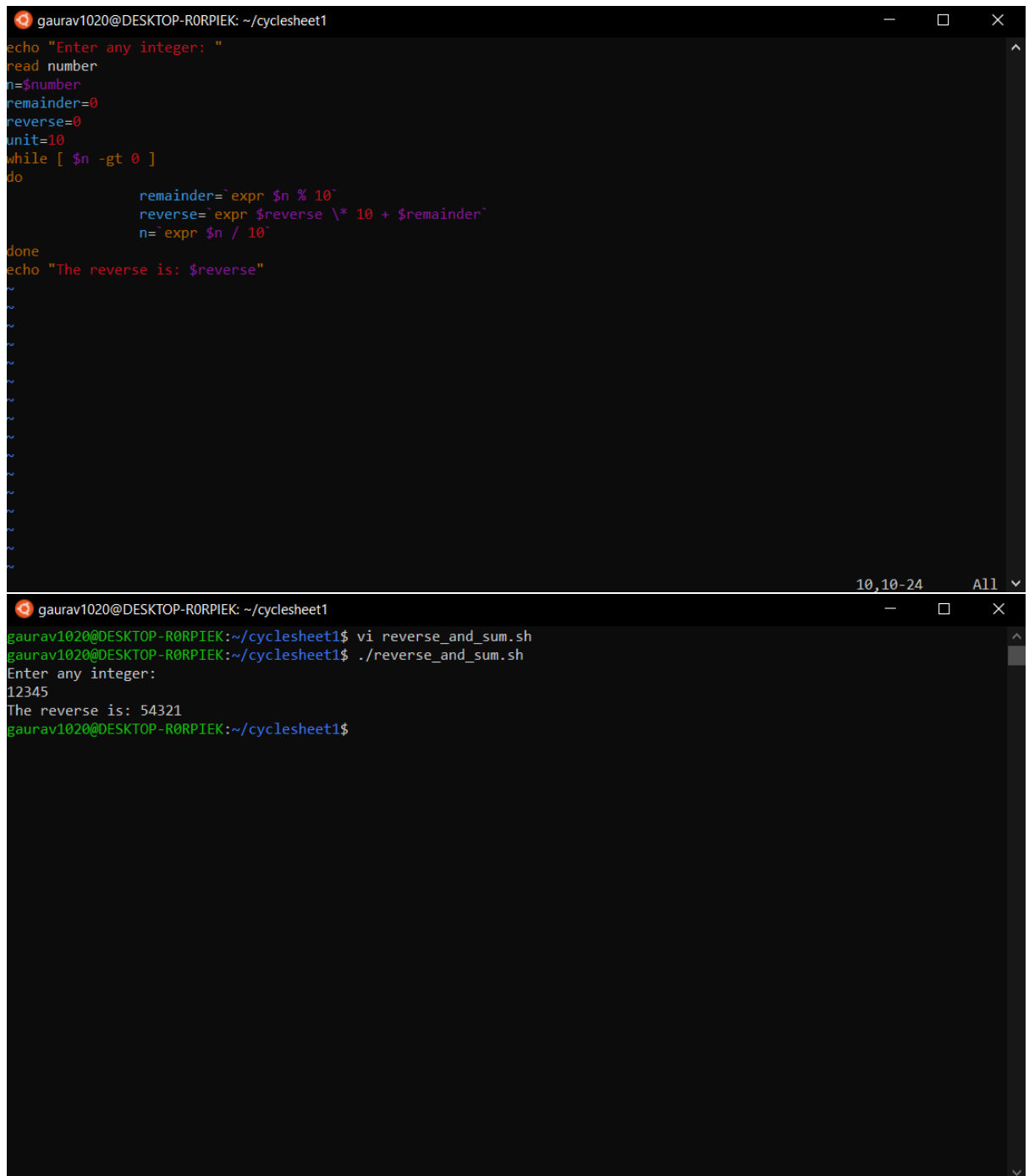
The screenshot shows a terminal window titled "gaurav1020@DESKTOP-RORPIEK: ~/cyclesheet1". The terminal displays the same shell script as above, with the output of the script being printed line by line. The script prompts the user to enter the number of elements to print, reads the input, and then prints the Fibonacci series. The terminal output shows the series starting with 0 and 1, and then subsequent numbers calculated by the script. The terminal window has a dark background and a light-colored text. The status bar at the bottom of the terminal shows "Fibonacci.sh" 12L, 170C, 9,2-9, and A11.

A terminal window titled 'gaurav1020@DESKTOP-R0RPIEK: ~/cyclesheet1' showing the execution of a shell script. The user enters 'vi Fibonacci.sh' to edit the script, then './Fibonacci.sh' to run it. The script prompts 'Enter the number of elements to print:' and the user enters '8'. The script then outputs 'The Fibonacci series is:' followed by the numbers 0, 1, 1, 2, 3, 5, 8, and 13 on separate lines. The prompt returns to 'gaurav1020@DESKTOP-R0RPIEK: ~/cyclesheet1\$'.

```
gaurav1020@DESKTOP-R0RPIEK: ~/cyclesheet1
gaurav1020@DESKTOP-R0RPIEK:~/cyclesheet1$ vi Fibonacci.sh
gaurav1020@DESKTOP-R0RPIEK:~/cyclesheet1$ ./Fibonacci.sh
Enter the number of elements to print:
8
The Fibonacci series is:
0
1
1
2
3
5
8
13
gaurav1020@DESKTOP-R0RPIEK:~/cyclesheet1$
```

3) Write a shell script to print a given number in reverse order and sum of the individual digits.

```
echo "Enter any integer: "
read number
n=$number
remainder=0
reverse=0
unit=10
while [ $n -gt 0 ]
do
    remainder=`expr $n % 10`
    reverse=`expr $reverse \* 10 + $remainder`
    n=`expr $n / 10`
done
echo "The reverse is: $reverse"
```



```
gaurav1020@DESKTOP-R0RPIEK: ~/cyclesheet1
echo "Enter any integer: "
read number
n=$number
remainder=0
reverse=0
unit=10
while [ $n -gt 0 ]
do
    remainder=`expr $n % 10`
    reverse=`expr $reverse \* 10 + $remainder`
    n=`expr $n / 10`
done
echo "The reverse is: $reverse"

gaurav1020@DESKTOP-R0RPIEK: ~/cyclesheet1
gaurav1020@DESKTOP-R0RPIEK:~/cyclesheet1$ vi reverse_and_sum.sh
gaurav1020@DESKTOP-R0RPIEK:~/cyclesheet1$ ./reverse_and_sum.sh
Enter any integer:
12345
The reverse is: 54321
gaurav1020@DESKTOP-R0RPIEK:~/cyclesheet1$
```

4) Write a shell script to accept one integer argument and print its multiplication table.

```
echo "Enter the number: "
read n
echo "Multiplication Table of $n is:"
for ((i=1;i<11;i++))
do
    a=`expr $n \* $i`
    echo "$n x $i = $a"
done
```

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Name: Gaurav Kumar Singh

Course: Operating Systems(CSE2005)
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```
gaurav1020@DESKTOP-R0RPIEK: ~/cyclesheet1
echo "Enter the number: "
read n
echo "Multiplication Table of $n is:"
for ((i=1;i<11;i++))
do
    a=`expr $n \* $i`
    echo "$n x $i = $a"
done

gaurav1020@DESKTOP-R0RPIEK: ~/cyclesheet1
gaurav1020@DESKTOP-R0RPIEK:~/cyclesheet1$ vi Multiplication_Table.sh
gaurav1020@DESKTOP-R0RPIEK:~/cyclesheet1$ ./Multiplication_Table.sh
Enter the number:
7
Multiplication Table of 7 is:
7 x 1 = 7
7 x 2 = 14
7 x 3 = 21
7 x 4 = 28
7 x 5 = 35
7 x 6 = 42
7 x 7 = 49
7 x 8 = 56
7 x 9 = 63
7 x 10 = 70
gaurav1020@DESKTOP-R0RPIEK:~/cyclesheet1$
```

5) Write a Shell Script that makes use of grep to isolate the line in /etc/passwd that contains your login details.

```
# !/bin/bash
username= whoami
grep "$username:" /etc/passwd
```

```
gaurav1020@DESKTOP-R0RPIEK: ~/cyclesheet1
# !/bin/bash
username= whoami
grep "$username:" /etc/passwd

gaurav1020@DESKTOP-R0RPIEK: ~/cyclesheet1

gaurav1020@DESKTOP-R0RPIEK: ~/cyclesheet1$ ./Login_details_isolate.sh
gaurav1020
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-networkd:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
systemd-timesync:x:102:104:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:103:106:./nonexistent:/usr/sbin/nologin
syslog:x:104:110:./home/syslog:/usr/sbin/nologin
_apt:x:105:65534:./nonexistent:/usr/sbin/nologin
tss:x:106:111:TPM software stack,,,:/var/lib/tpm:/bin/false
uuid:x:107:112:./run/uuid:/usr/sbin/nologin
tcpdump:x:108:113:./nonexistent:/usr/sbin/nologin
sshd:x:109:65534:./run/sshd:/usr/sbin/nologin
landscape:x:110:115:./var/lib/landscape:/usr/sbin/nologin
pollinate:x:111:1:./var/cache/pollinate:/bin/false
gaurav1020:x:1000:1000:.,,,:/home/gaurav1020:/bin/bash
gaurav1020@DESKTOP-R0RPIEK:~/cyclesheet1$
```

6) Using shell script, display the contents of the present working directory. If it is an ordinary file print its permission and change the permissions to r--r--r--.

echo "All Files in the Director: "

ls

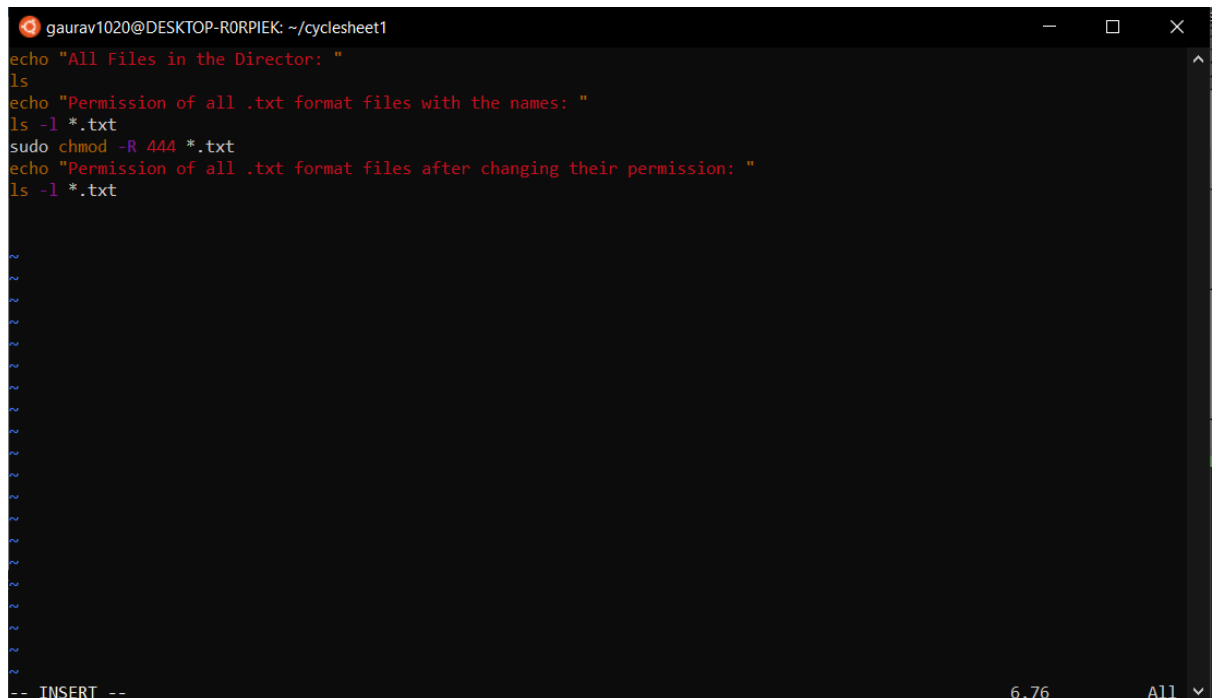
echo "Permission of all .txt format files with the names: "

ls -l *.txt

sudo chmod -R 444 *.txt

echo "Permission of all .txt format files after changing their permission: "

ls -l *.txt



The screenshot shows a terminal window titled "gaurav1020@DESKTOP-R0RPIEK: ~/cyclesheet1". The terminal displays the following commands and their outputs:

```
echo "All Files in the Director: "
ls
echo "Permission of all .txt format files with the names: "
ls -l *.txt
sudo chmod -R 444 *.txt
echo "Permission of all .txt format files after changing their permission: "
ls -l *.txt
```

The output of the script shows the contents of the directory and the permissions of the files before and after the change. The permissions are shown as "r--r--r--" for all files.

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Course: Operating Systems(CSE2005)
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```
gaurav1020@DESKTOP-R0RPIEK: ~/cyclesheet1
gaurav1020@DESKTOP-R0RPIEK:~/cyclesheet1$ vi Read_only_permission.sh
gaurav1020@DESKTOP-R0RPIEK:~/cyclesheet1$ ./Read_only_permission.sh
All Files in the Director:
Fibonacci.sh Multiplication_Table.sh Read_only_permission.sh Sample.txt Sample2.txt reverse_and_sum.sh
Permission of all .txt format files with the names:
-r--r--r-- 1 gaurav1020 gaurav1020 13 Feb 23 16:12 Sample.txt
-r--r--r-- 1 gaurav1020 gaurav1020 16 Feb 23 16:37 Sample2.txt
Permission of all .txt format files after changing their permission:
-r--r--r-- 1 gaurav1020 gaurav1020 13 Feb 23 16:12 Sample.txt
-r--r--r-- 1 gaurav1020 gaurav1020 16 Feb 23 16:37 Sample2.txt
gaurav1020@DESKTOP-R0RPIEK:~/cyclesheet1$
```