

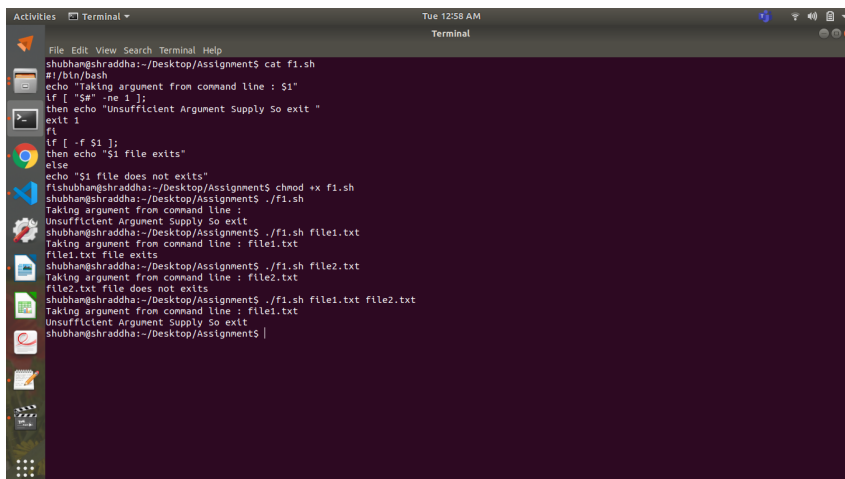
# Assignment 3

Name -Shraddha Tripathi

1. Write a script to determine whether given file exists or not, the file name is supplied as command line argument, also check for sufficient number of command line arguments.

**Soln-**

```
shubham@shraddha:~/Desktop/Assignment$ cat f1.sh
#!/bin/bash
echo "Taking argument from command line : $1"
if [ -f $1 ];
then echo "$1 file exists"
else
echo "$1 file does not exists"
fishubham@shraddha:~/Desktop/Assignment$ chmod +x f1.sh
shubham@shraddha:~/Desktop/Assignment$ ./f1.sh aaaa
Taking argument from command line : aaaa
aaaa file does not exists
shubham@shraddha:~/Desktop/Assignment$ ./f1.sh file1.txt
Taking argument from command line : file1.txt
file1.txt file exists
```

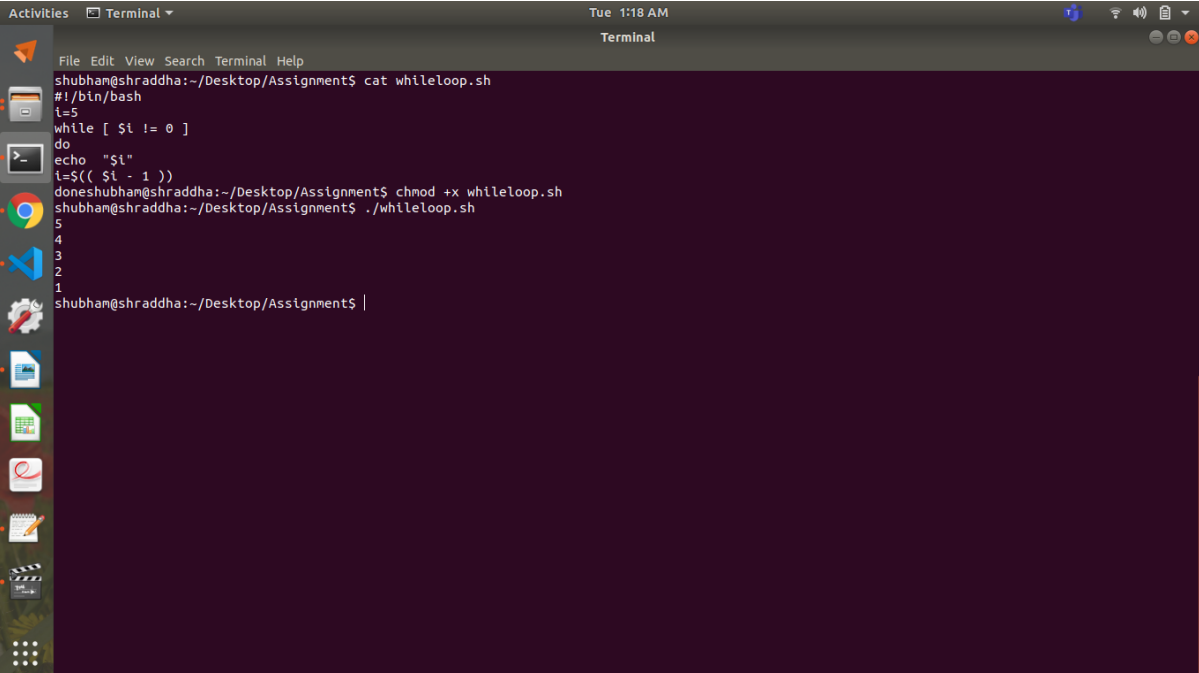


```
File Edit View Search Terminal Help
shubham@shraddha:~/Desktop/Assignment$ cat f1.sh
#!/bin/bash
echo "Taking argument from command line : $1"
if [ -f $1 ];
then echo "$1 file exists"
else
echo "$1 file does not exists"
fishubham@shraddha:~/Desktop/Assignment$ chmod +x f1.sh
shubham@shraddha:~/Desktop/Assignment$ ./f1.sh
Taking argument from command line :
Unsuufficient Argument Supply So exit
shubham@shraddha:~/Desktop/Assignment$ ./f1.sh file1.txt
Taking argument from command line : file1.txt
file1.txt file exists
shubham@shraddha:~/Desktop/Assignment$ ./f1.sh file2.txt
Taking argument from command line : file2.txt
file2.txt file does not exists
shubham@shraddha:~/Desktop/Assignment$ ./f1.sh file1.txt file2.txt
Taking argument from command line : file1.txt
Unsuufficient Argument Supply So exit
shubham@shraddha:~/Desktop/Assignment$
```

2. Write a script to print nos. as 5, 4, 3, 2, 1 using while loop.

Sol-

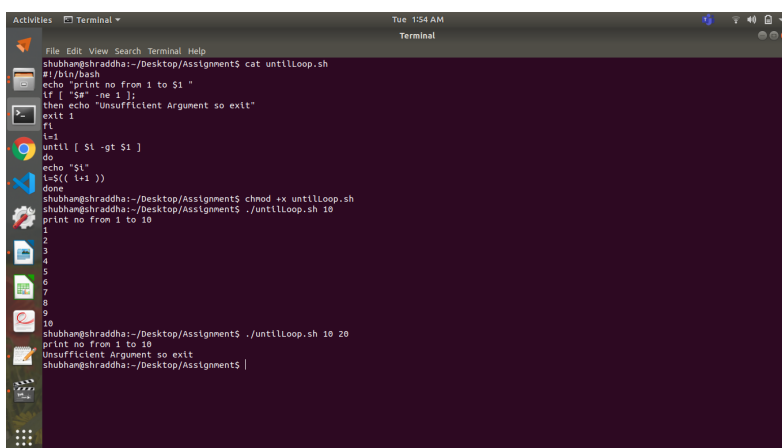
```
shubham@shraddha:~/Desktop/Assignment$ cat whileloop.sh
#!/bin/bash
i=5
while [ $i != 0 ]
do
echo "$i"
i=$(( $i - 1 ))
done
shubham@shraddha:~/Desktop/Assignment$ chmod +x whileloop.sh
shubham@shraddha:~/Desktop/Assignment$ ./whileloop.sh
5
4
3
2
1
```

A screenshot of a Linux terminal window. The window title is "Terminal" and it shows the execution of a script named "whileloop.sh". The script uses a while loop to print numbers from 5 down to 1. The terminal output shows the numbers 5, 4, 3, 2, and 1, each on a new line. The user's prompt is "shubham@shraddha:~/Desktop/Assignment\$". The terminal window has a dark background and a light-colored text. The window is part of a desktop environment with a sidebar on the left containing various application icons.

```
Activities  Terminal  Tue 1:18 AM
Terminal
File Edit View Search Terminal Help
shubham@shraddha:~/Desktop/Assignment$ cat whileloop.sh
#!/bin/bash
i=5
while [ $i != 0 ]
do
echo "$i"
i=$(( $i - 1 ))
done
shubham@shraddha:~/Desktop/Assignment$ chmod +x whileloop.sh
shubham@shraddha:~/Desktop/Assignment$ ./whileloop.sh
5
4
3
2
1
shubham@shraddha:~/Desktop/Assignment$
```

Qus- 3. Take a number as command line and using until loop print value from 1 to till number.

```
Sol-shubham@shraddha:~/Desktop/Assignment$ cat untilLoop.sh
#!/bin/bash
echo "print no from 1 to $1 "
if [ "$#" -ne 1 ];
then echo "Unsufficient Argument so exit"
exit 1
fi
i=1
until [ $i -gt $1 ]
do
echo "$i"
i=$(( i+1 ))
done
shubham@shraddha:~/Desktop/Assignment$ chmod +x untilLoop.sh
shubham@shraddha:~/Desktop/Assignment$ ./untilLoop.sh 10
print no from 1 to 10
1
2
3
4
5
6
7
8
9
10
shubham@shraddha:~/Desktop/Assignment$ ./untilLoop.sh 10 20
print no from 1 to 10
Unsufficient Argument so exit
```



```
Activities Terminal Tue 1:54 AM
shubham@shraddha:~/Desktop/Assignment$ cat untilLoop.sh
#!/bin/bash
echo "print no from 1 to $1 "
if [ "$#" -ne 1 ];
then echo "Unsufficient Argument so exit"
exit 1
fi
i=1
until [ $i -gt $1 ]
do
echo "$i"
i=$(( i+1 ))
done
shubham@shraddha:~/Desktop/Assignment$ chmod +x untilLoop.sh
shubham@shraddha:~/Desktop/Assignment$ ./untilLoop.sh 10
print no from 1 to 10
1
2
3
4
5
6
7
8
9
10
shubham@shraddha:~/Desktop/Assignment$ ./untilLoop.sh 10 20
print no from 1 to 10
Unsufficient Argument so exit
shubham@shraddha:~/Desktop/Assignment$
```

Qus 4-Write a script, using case statement to perform basic math operation as follows

+ addition

-subtraction

x multiplication

/ division

NOTE -two numbers will be given as command line arguments.

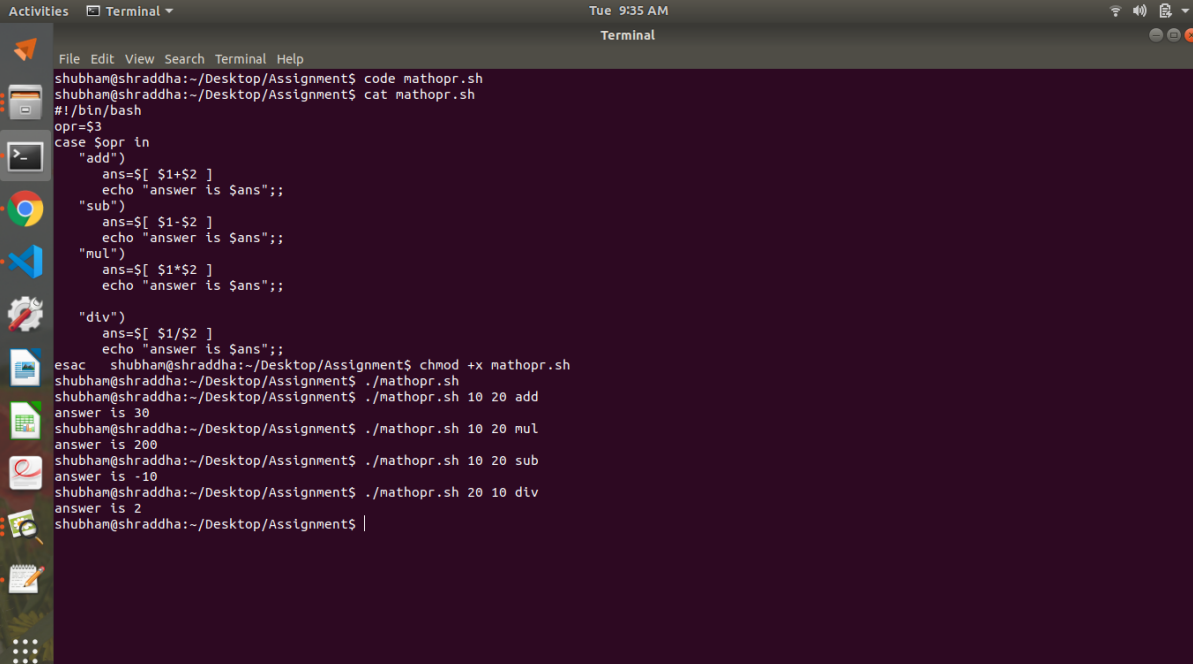
Soln-

```
shubham@shraddha:~/Desktop/Assignment$ code mathopr.sh
shubham@shraddha:~/Desktop/Assignment$ cat mathopr.sh
#!/bin/bash
opr=$3
case $opr in
    "add")
        ans=$(( $1+$2 ))
        echo "answer is $ans";;
    "sub")
        ans=$(( $1-$2 ))
        echo "answer is $ans";;
    "mul")
        ans=$(( $1*$2 ))
        echo "answer is $ans";;
    "div")
        ans=$(( $1/$2 ))
        echo "answer is $ans";;
esac
shubham@shraddha:~/Desktop/Assignment$ chmod +x
mathopr.sh
shubham@shraddha:~/Desktop/Assignment$ ./mathopr.sh
shubham@shraddha:~/Desktop/Assignment$ ./mathopr.sh 10 20 add
answer is 30
```

shubham@shraddha:~/Desktop/Assignment\$ ./mathopr.sh 10 20 mul  
answer is 200

shubham@shraddha:~/Desktop/Assignment\$ ./mathopr.sh 10 20 sub  
answer is -10

shubham@shraddha:~/Desktop/Assignment\$ ./mathopr.sh 20 10 div  
answer is 2



```
File Edit View Search Terminal Help
shubham@shraddha:~/Desktop/Assignment$ code mathopr.sh
shubham@shraddha:~/Desktop/Assignment$ cat mathopr.sh
#!/bin/bash
opr=$3
case $opr in
    "add")
        ans=$(( $1+$2 ))
        echo "answer is $ans";;
    "sub")
        ans=$(( $1-$2 ))
        echo "answer is $ans";;
    "mul")
        ans=$(( $1*$2 ))
        echo "answer is $ans";;
    "div")
        ans=$(( $1/$2 ))
        echo "answer is $ans";;
esac
shubham@shraddha:~/Desktop/Assignment$ chmod +x mathopr.sh
shubham@shraddha:~/Desktop/Assignment$ ./mathopr.sh
shubham@shraddha:~/Desktop/Assignment$ ./mathopr.sh 10 20 add
answer is 30
shubham@shraddha:~/Desktop/Assignment$ ./mathopr.sh 10 20 mul
answer is 200
shubham@shraddha:~/Desktop/Assignment$ ./mathopr.sh 10 20 sub
answer is -10
shubham@shraddha:~/Desktop/Assignment$ ./mathopr.sh 20 10 div
answer is 2
shubham@shraddha:~/Desktop/Assignment$ |
```

[illegible]

Qus 6-Write a program using while loop to print

0

1 0

2 1 0

3 2 1 0

4 3 2 1 0

5 4 3 2 1 0

6 5 4 3 2 1 0

7 6 5 4 3 2 1 0

8 7 6 5 4 3 2 1 0

9 8 7 6 5 4 3 2 1 0

Soln-

```
shubham@shraddha:~/Desktop/Assignment$ code pattern1.sh
```

```
shubham@shraddha:~/Desktop/Assignment$ cat pattern1.sh
```

```
#!/bin/bash
```

```
k=0
```

```
while [[ "$k" -le 9 ]]
```

```
do i=$k
```

```
    let k=$k+1
```

```
    printf "\n"
```

```
    while [[ "$i" -ge 0 ]]
```

```
    do
```

```
        printf "$i "
```

```
        let i=$i-1
```

```
    done
```

```
done
```

```
printf "\n"shubham@shraddha:~/Desktop/Assignment$ chmod +x pattern1.sh
```

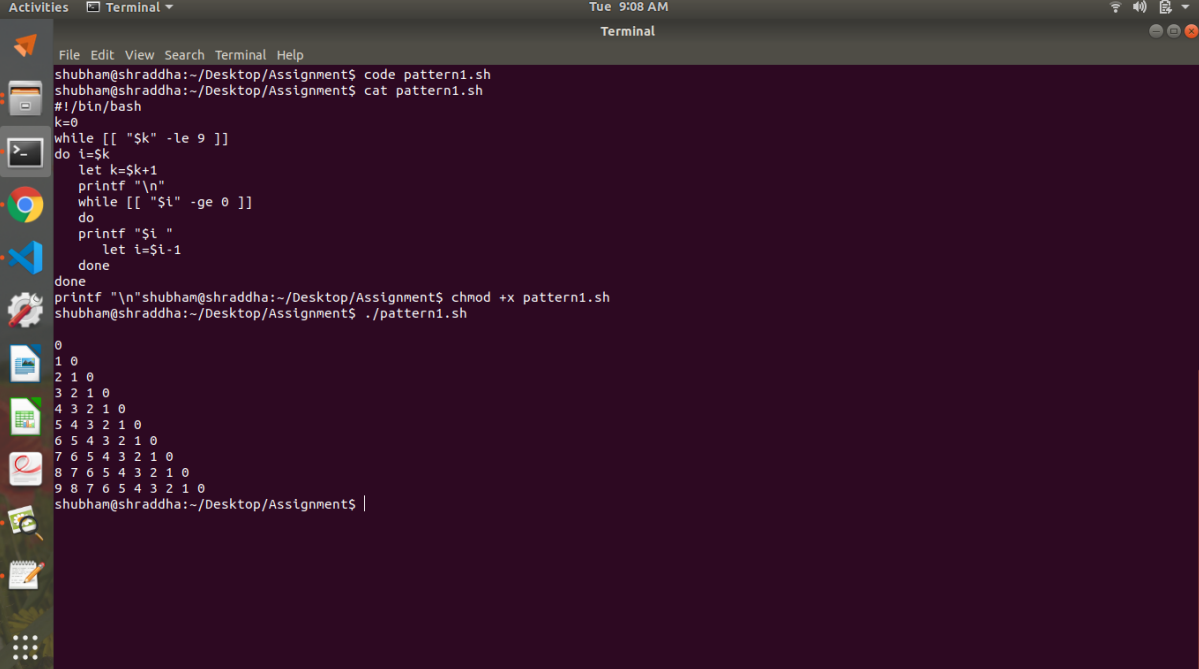
```
shubham@shraddha:~/Desktop/Assignment$ ./pattern1.sh
```

0

1 0

2 1 0

3 2 1 0  
4 3 2 1 0  
5 4 3 2 1 0  
6 5 4 3 2 1 0  
7 6 5 4 3 2 1 0  
8 7 6 5 4 3 2 1 0  
9 8 7 6 5 4 3 2 1 0



```
Activities Terminal Tue 9:08 AM
Terminal
File Edit View Search Terminal Help
shubham@shraddha:~/Desktop/Assignment$ code pattern1.sh
shubham@shraddha:~/Desktop/Assignment$ cat pattern1.sh
#!/bin/bash
k=0
while [[ "$k" -le 9 ]]
do i=$k
  let k=k+1
  printf "\n"
  while [[ "$i" -ge 0 ]]
  do
    printf "%i "
    let i=i-1
  done
done
printf "\n"shubham@shraddha:~/Desktop/Assignment$ chmod +x pattern1.sh
shubham@shraddha:~/Desktop/Assignment$ ./pattern1.sh
0
1 0
2 1 0
3 2 1 0
4 3 2 1 0
5 4 3 2 1 0
6 5 4 3 2 1 0
7 6 5 4 3 2 1 0
8 7 6 5 4 3 2 1 0
9 8 7 6 5 4 3 2 1 0
shubham@shraddha:~/Desktop/Assignment$ |
```



Qus 7-Write a program using for loop to print

\*

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \*

\* \* \*

\* \*

\*

\*

Soln-

```
shubham@shraddha:~/Desktop/Assignment$ cat pattern2.sh
```

```
#!/bin/bash
```

```
printf ""
```

```
printf "\n"
```

```
for ((i=1;$i<=4;i=$i+1));
```

```
do
```

```
for ((j=1;$j<=$i;j=$j+1));
```

```
do
```

```
printf ""
```

```
done
```

```
printf "\n"
```

```
done
```

```
for ((i=1;$i<=4;i=$i+1));
```

```
do
```

```
for ((j=1;$j<=4-$i+1;j=$j+1));
```

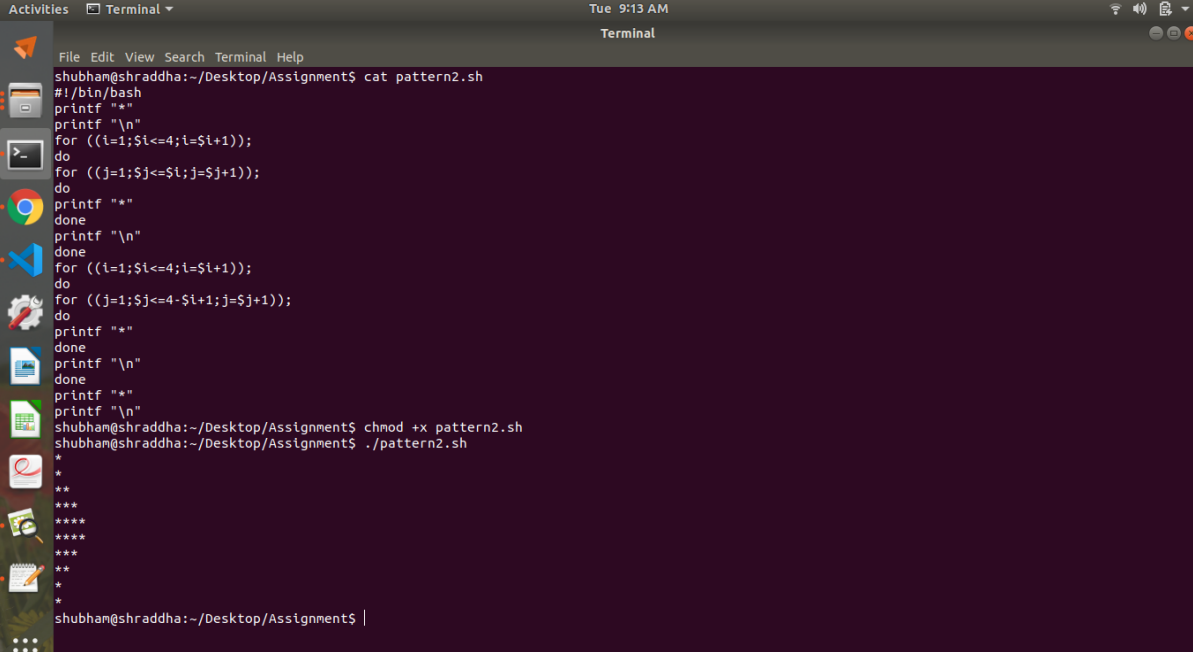
```
do
```

```
printf ""
```

```
done
```

```
printf "\n"
```

```
done
printf "*"
printf "\n"
shubham@shraddha:~/Desktop/Assignment$ chmod +x pattern2.sh
shubham@shraddha:~/Desktop/Assignment$ ./pattern2.sh
*
*
**
***
****
****
***
**
*
*
```

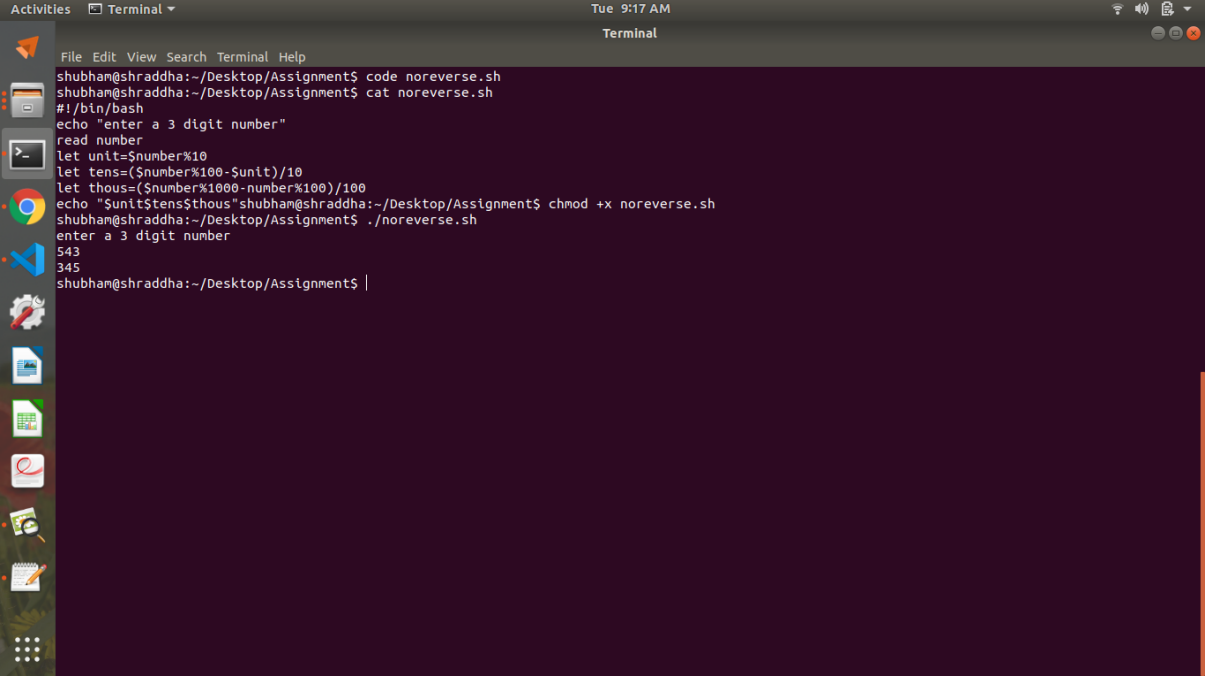


```
Activities  Terminal  Tue 9:13 AM
Terminal
File Edit View Search Terminal Help
shubham@shraddha:~/Desktop/Assignment$ cat pattern2.sh
#!/bin/bash
printf "*"
printf "\n"
for ((i=1;$i<=4;i=$i+1));
do
for ((j=1;$j<= $i; j=$j+1));
do
printf "*"
done
printf "\n"
done
for ((i=1;$i<=4;i=$i+1));
do
for ((j=1;$j<=4-$i+1;j=$j+1));
do
printf "*"
done
printf "\n"
done
printf "*"
printf "\n"
shubham@shraddha:~/Desktop/Assignment$ chmod +x pattern2.sh
shubham@shraddha:~/Desktop/Assignment$ ./pattern2.sh
*
*
**
***
****
****
***
**
*
*
shubham@shraddha:~/Desktop/Assignment$ |
```

Qus 8. Write a script to print given number in reverse order, for eg. If number is 123 it must print as 321.

Soln-

```
shubham@shraddha:~/Desktop/Assignment$ code noreverse.sh
shubham@shraddha:~/Desktop/Assignment$ cat noreverse.sh
#!/bin/bash
echo "enter a 3 digit number"
read number
let unit=$number%10
let tens=($number%100-$unit)/10
let thous=($number%1000-number%100)/100
echo "$unit$tens$thous"shubham@shraddha:~/Desktop/Assignment$
chmod +x noreverse.sh
shubham@shraddha:~/Desktop/Assignment$ ./noreverse.sh
enter a 3 digit number
543
345
```



The screenshot shows a terminal window titled 'Terminal' with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal displays the following commands and output:

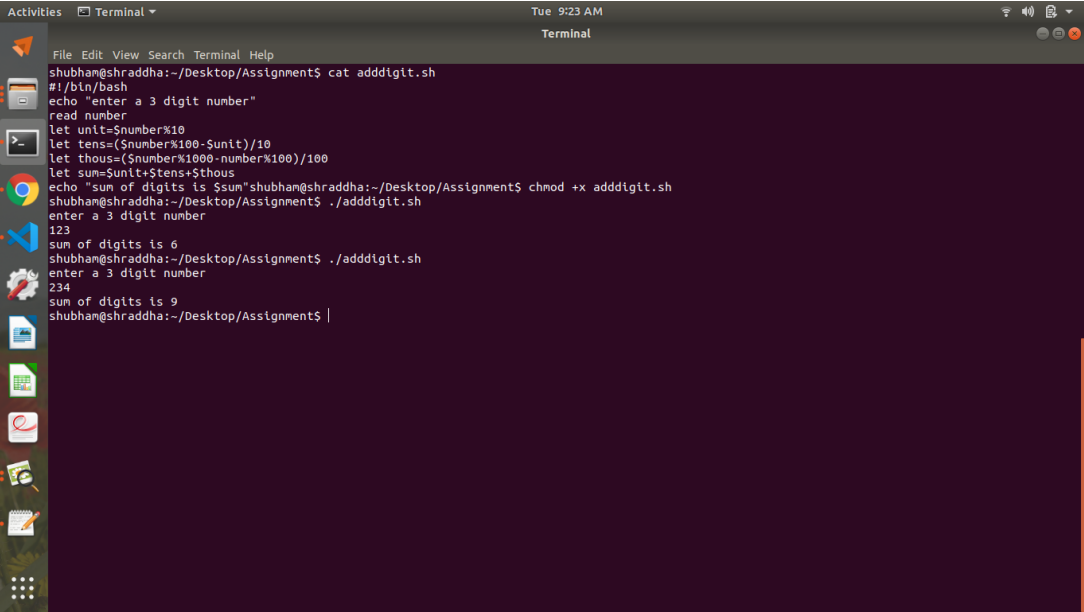
```
shubham@shraddha:~/Desktop/Assignment$ code noreverse.sh
shubham@shraddha:~/Desktop/Assignment$ cat noreverse.sh
#!/bin/bash
echo "enter a 3 digit number"
read number
let unit=$number%10
let tens=($number%100-$unit)/10
let thous=($number%1000-number%100)/100
echo "$unit$tens$thous"shubham@shraddha:~/Desktop/Assignment$
shubham@shraddha:~/Desktop/Assignment$ chmod +x noreverse.sh
shubham@shraddha:~/Desktop/Assignment$ ./noreverse.sh
enter a 3 digit number
543
345
shubham@shraddha:~/Desktop/Assignment$
```

The terminal output shows the script successfully reversing the input number 543 to 345. The terminal window has a dark background and a light-colored text. The left sidebar shows various application icons, and the top status bar indicates the time as Tue 9:17 AM.

**Qus 9.** Write script to print the sum of all the digits of a given number. For eg. If the number is 123, sum of all the digits will be  $1+2+3 = 6$ .

**Soln-**

```
shubham@shraddha:~/Desktop/Assignment$ cat adddigit.sh
#!/bin/bash
echo "enter a 3 digit number"
read number
let unit=$number%10
let tens=($number%100-$unit)/10
let thous=($number%1000-number%100)/100
let sum=$unit+$tens+$thous
echo "sum of digits is $sum"shubham@shraddha:~/Desktop/Assignment$ chmod +x
addigit.sh
shubham@shraddha:~/Desktop/Assignment$ ./addigit.sh
enter a 3 digit number
123
sum of digits is 6
shubham@shraddha:~/Desktop/Assignment$ ./addigit.sh
enter a 3 digit number
234
sum of digits is 9
```



The screenshot shows a terminal window titled 'Terminal' with a menu bar (File, Edit, View, Search, Terminal, Help) and a status bar (Tue 9:23 AM, Terminal). The terminal displays the following commands and output:

```
shubham@shraddha:~/Desktop/Assignment$ cat adddigit.sh
#!/bin/bash
echo "enter a 3 digit number"
read number
let unit=$number%10
let tens=($number%100-$unit)/10
let thous=($number%1000-number%100)/100
let sum=$unit+$tens+$thous
echo "sum of digits is $sum"shubham@shraddha:~/Desktop/Assignment$ chmod +x addigit.sh
shubham@shraddha:~/Desktop/Assignment$ ./addigit.sh
enter a 3 digit number
123
sum of digits is 6
shubham@shraddha:~/Desktop/Assignment$ ./addigit.sh
enter a 3 digit number
234
sum of digits is 9
shubham@shraddha:~/Desktop/Assignment$
```

Qus 10.Create a file named file.txt and write a shell script to check is a file is readable , writable and executable.

Sol-

```
shubham@shraddha:~/Desktop/Assignment$ code filemode.sh
shubham@shraddha:~/Desktop/Assignment$ chmod +x filemode.sh
shubham@shraddha:~/Desktop/Assignment$ ./filemode.sh
```

total 68

```
-rwxrwxr-x 1 shubham shubham 201 May 11 09:21 adddigit.sh
-rw-r--r-- 1 shubham shubham 95 May 10 22:30 addno.sh
-rwxr--r-- 1 shubham shubham 95 May 10 22:29 addtwo.sh
-rwxr--r-- 1 shubham shubham 107 May 10 22:36 addusingbc.sh
drwxr-xr-x 2 shubham shubham 4096 May 10 22:00 dir
-rwxr-xr-x 1 shubham shubham 215 May 11 00:55 f1.sh
-rw-r--r-- 1 shubham shubham 27 May 10 22:08 file1.txt
-rwxrwxr-x 1 shubham shubham 20 May 11 09:28 filemode.sh
-rwxrwxr-x 1 shubham shubham 307 May 11 08:59 greaterno.sh
-rwxrwxr-x 1 shubham shubham 169 May 11 09:16 noreverse.sh
-rw-r--r-- 1 shubham shubham 58 May 10 23:47 no.sh
-rwxrwxr-x 1 shubham shubham 172 May 11 09:07 pattern1.sh
-rwxrwxr-x 1 shubham shubham 246 May 11 09:13 pattern2.sh
-rwxr-xr-x 1 shubham shubham 119 May 10 21:59 shell.sh
-rwxr-xr-x 1 shubham shubham 37 May 10 20:46 test.sh
-rwxr-xr-x 1 shubham shubham 168 May 11 01:50 untilLoop.sh
-rwxr-xr-x 1 shubham shubham 68 May 11 01:19 whileloop.sh
```

The screenshot shows a terminal window titled "Terminal" with a menu bar (File, Edit, View, Search, Terminal, Help) and a status bar (Tue 9:29 AM). The terminal content shows a user named shubham@shraddha in the directory ~/Desktop/Assignment. The user has executed the following commands:

```
shubham@shraddha:~/Desktop/Assignment$ code filename.sh
shubham@shraddha:~/Desktop/Assignment$ chmod +x filename.sh
shubham@shraddha:~/Desktop/Assignment$ ./filename.sh
total 68
-rwxrwxr-x 1 shubham shubham 201 May 11 09:21 adddigit.sh
-rw-r--r-- 1 shubham shubham 95 May 10 22:30 addno.sh
-rwxr--r-- 1 shubham shubham 95 May 10 22:29 addtwo.sh
-rwxr--r-- 1 shubham shubham 107 May 10 22:30 addusingbc.sh
drwxr-xr-x 2 shubham shubham 4096 May 10 22:00 dir
-rwxr-xr-x 1 shubham shubham 215 May 11 00:55 f1.sh
-rw-r--r-- 1 shubham shubham 27 May 10 22:08 file1.txt
-rwxrwxr-x 1 shubham shubham 20 May 11 09:28 filename.sh
-rwxrwxr-x 1 shubham shubham 307 May 11 08:59 greaterno.sh
-rwxrwxr-x 1 shubham shubham 169 May 11 09:10 noreverse.sh
-rw-r--r-- 1 shubham shubham 58 May 10 23:47 no.sh
-rwxrwxr-x 1 shubham shubham 172 May 11 09:07 pattern1.sh
-rwxrwxr-x 1 shubham shubham 246 May 11 09:13 pattern2.sh
-rwxr-xr-x 1 shubham shubham 119 May 10 21:59 shell.sh
-rwxr-xr-x 1 shubham shubham 37 May 10 20:46 test.sh
-rwxr-xr-x 1 shubham shubham 168 May 11 01:50 untilloop.sh
-rwxr-xr-x 1 shubham shubham 68 May 11 01:19 whileloop.sh
shubham@shraddha:~/Desktop/Assignment$
```

Submitted To: -  
Prachi Ma'am

Submitted By: -  
Shraddha Tripathi