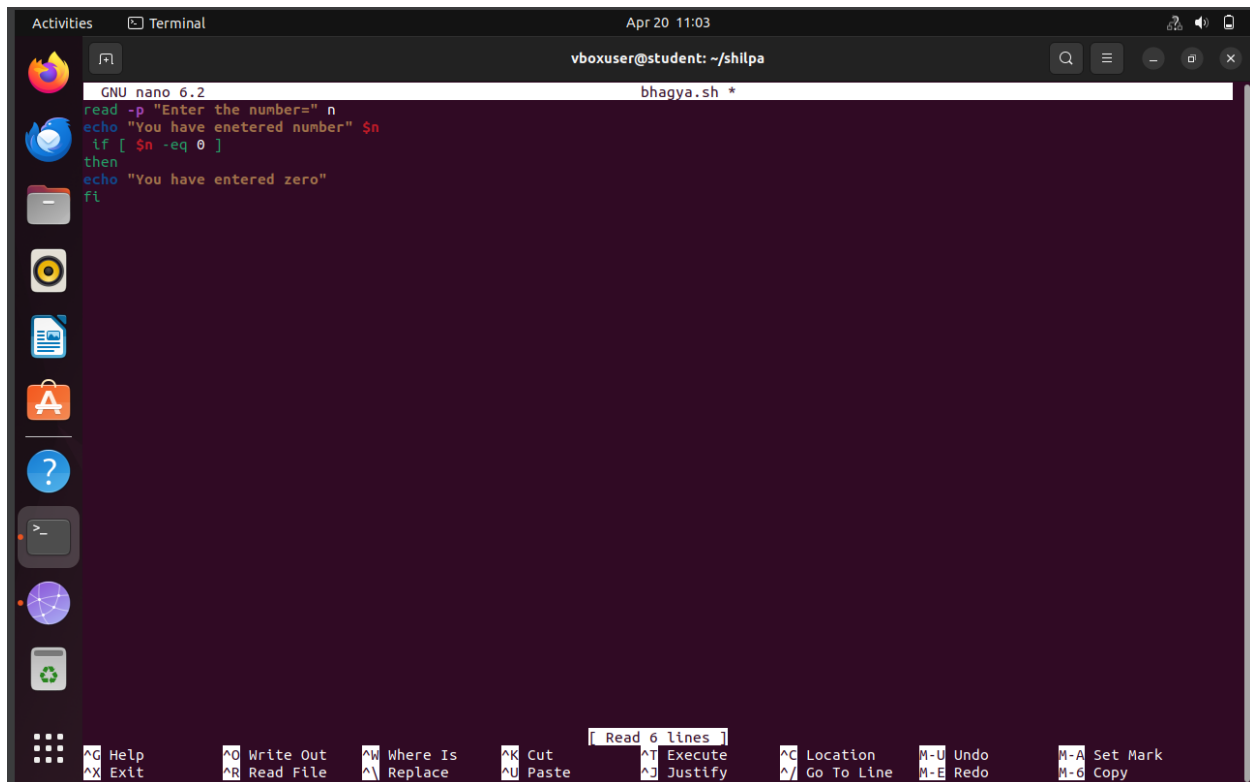


OS ASSIGNMENT

1] Basic commands and creating files :

```
vboxuser@student:~$ whoami
vboxuser
vboxuser@student:~$ nano txt
vboxuser@student:~$ cat txt
wertyu
vboxuser@student:~$ nano simple.txt
vboxuser@student:~$ cat simple.txt
echo -p "Enter number=" num
read num
vboxuser@student:~$ mkdir shilpa
vboxuser@student:~$ cd shilpa
vboxuser@student:~/shilpa$ nano bhagya.sh
vboxuser@student:~/shilpa$ bash bhagya.sh
Enter the number=0
You have entered number 0
You have entered zero
vboxuser@student:~/shilpa$ bash bhagya.sh
Enter the number=12
You have entered number 12
vboxuser@student:~/shilpa$ nano bhagya.sh
vboxuser@student:~/shilpa$ nano ifelse.sh
vboxuser@student:~/shilpa$ bash ifelse.sh
Enter the number=12
You have entered the number= 12
You have entered non-zero value
vboxuser@student:~/shilpa$ bash ifelse.sh
Enter the number=0
You have entered the number= 0
You have entered zero
vboxuser@student:~/shilpa$ ls
bhagya.sh  ifelse.sh
vboxuser@student:~/shilpa$ touch {1..5}.txt
vboxuser@student:~/shilpa$ s
s: command not found
vboxuser@student:~/shilpa$ ls
1.txt 2.txt 3.txt 4.txt 5.txt bhagya.sh ifelse.sh
vboxuser@student:~/shilpa$
```

2] If condition:

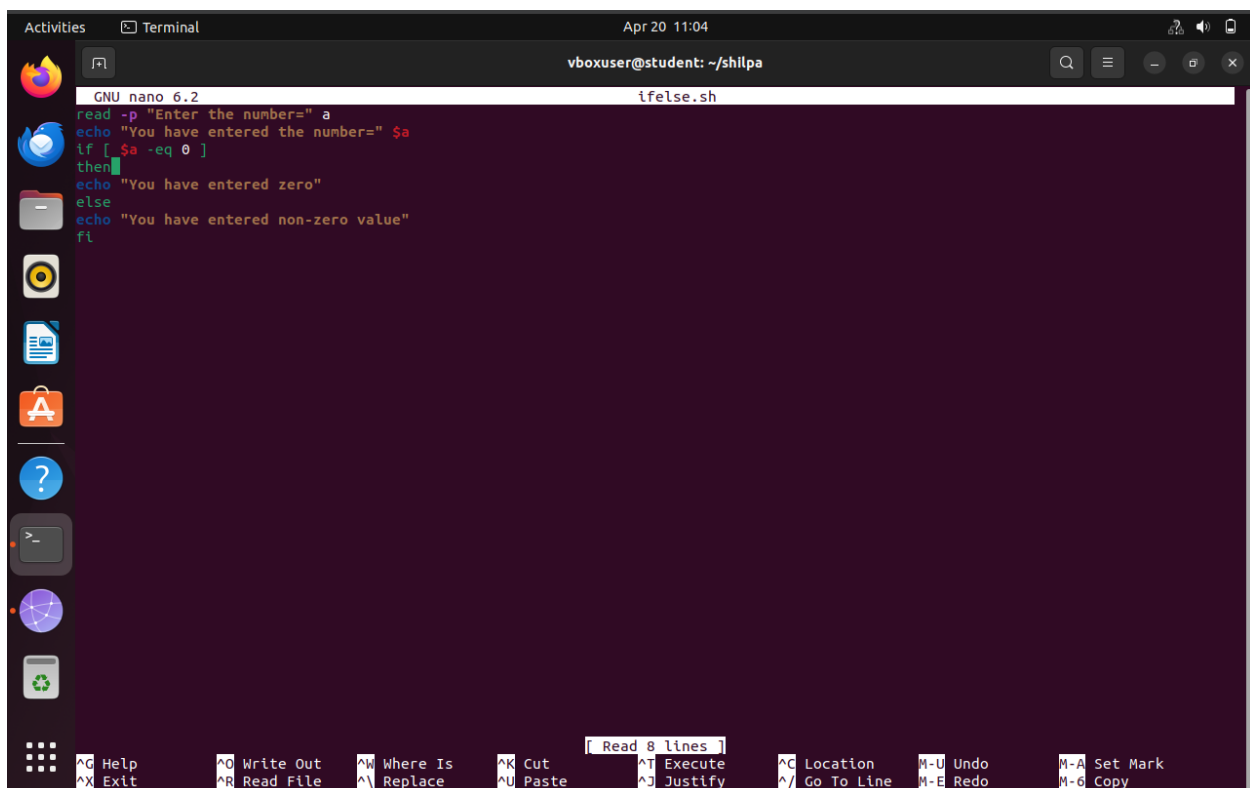


```
GNU nano 6.2 bhagya.sh *
read -p "Enter the number=" n
echo "You have entered number" $n
if [ $n -eq 0 ]
then
echo "You have entered zero"
fi
```

Read 6 lines

Help Exit Write Out Read File Where Is Replace Cut Paste Execute Justify Location Go To Line Undo Redo Set Mark Copy

3] If-else condition:

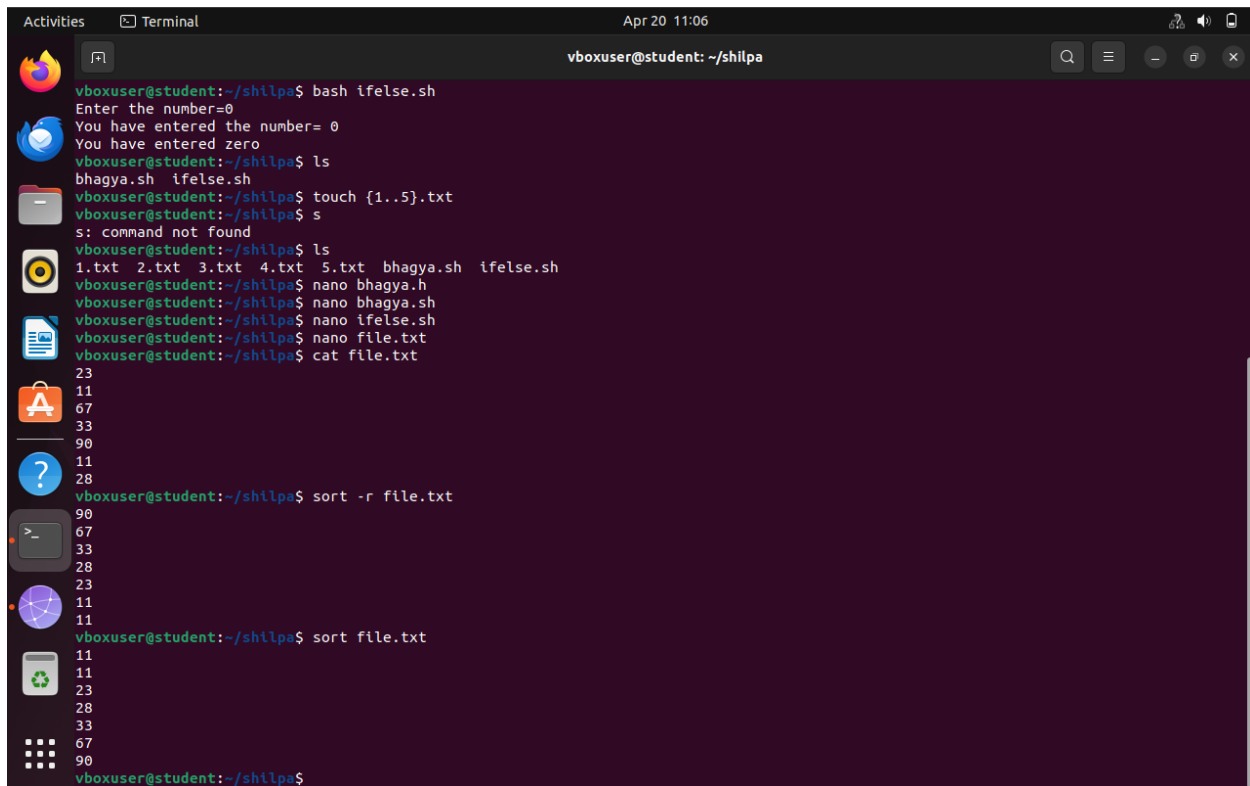


```
GNU nano 6.2 ifelse.sh
read -p "Enter the number=" a
echo "You have entered the number=" $a
if [ $a -eq 0 ]
then
echo "You have entered zero"
else
echo "You have entered non-zero value"
fi
```

Read 8 lines

Help Exit Write Out Read File Where Is Replace Cut Paste Execute Justify Location Go To Line Undo Redo Set Mark Copy

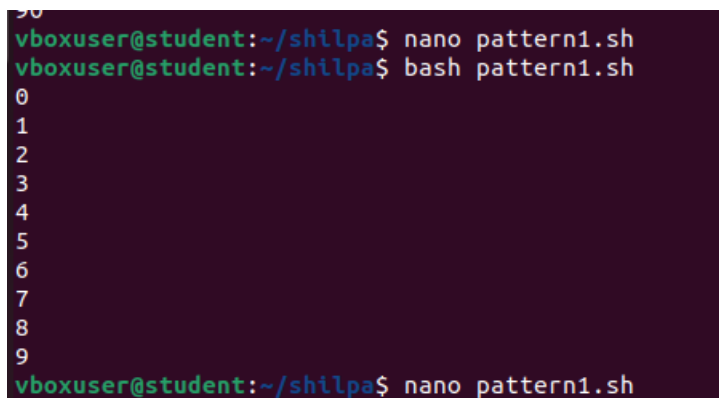
4)Sorting:



A terminal window titled 'Terminal' with a date and time of 'Apr 20 11:06'. The user is 'vboxuser@student' in the directory '~/shilpa'. The terminal shows the following sequence of commands and outputs:

```
vboxuser@student:~/shilpa$ bash ifelse.sh
Enter the number=0
You have entered the number= 0
You have entered zero
vboxuser@student:~/shilpa$ ls
bhagya.sh  ifelse.sh
vboxuser@student:~/shilpa$ touch {1..5}.txt
vboxuser@student:~/shilpa$ s
s: command not found
vboxuser@student:~/shilpa$ ls
1.txt 2.txt 3.txt 4.txt 5.txt bhagya.sh ifelse.sh
vboxuser@student:~/shilpa$ nano bhagya.h
vboxuser@student:~/shilpa$ nano bhagya.sh
vboxuser@student:~/shilpa$ nano ifelse.sh
vboxuser@student:~/shilpa$ nano file.txt
vboxuser@student:~/shilpa$ cat file.txt
23
11
67
33
90
11
28
vboxuser@student:~/shilpa$ sort -r file.txt
90
67
33
28
23
11
11
vboxuser@student:~/shilpa$ sort file.txt
11
11
23
28
33
67
90
vboxuser@student:~/shilpa$
```

5)for loop:



A terminal window showing the following commands and outputs:

```
vboxuser@student:~/shilpa$ nano pattern1.sh
vboxuser@student:~/shilpa$ bash pattern1.sh
0
1
2
3
4
5
6
7
8
9
vboxuser@student:~/shilpa$ nano pattern1.sh
```

```
GNU nano 6.2 pattern1.sh
for(( i=0;i<10;i++))
do
echo $i
done
```

Read 4 lines

Help Exit Write Out Read File Where Is Replace Cut Paste Execute Justify Location Go To Line Undo Redo Set Mark Copy

6]Even odd numbers:

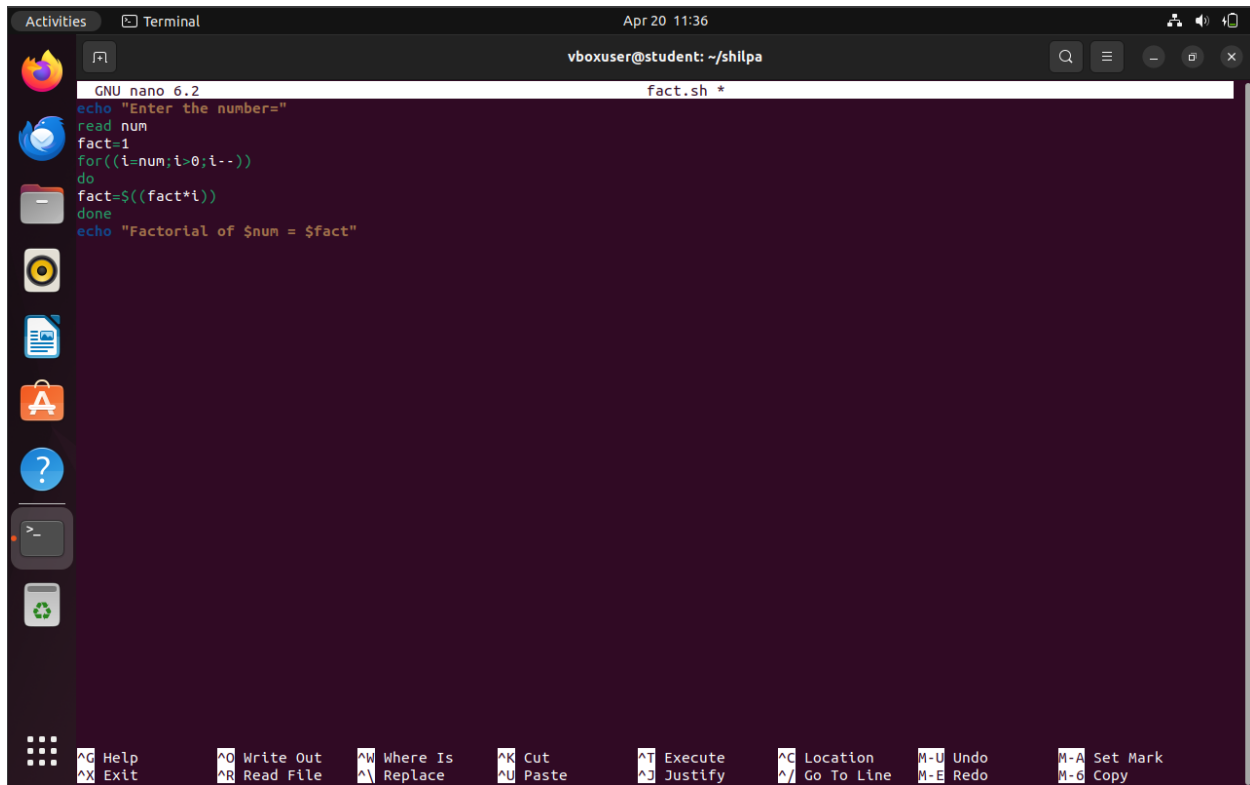
```
GNU nano 6.2 p2.sh
echo "Enter the number to check even or odd="
read num
s=$((num % 2))
if [ $s -eq 0 ]
then
echo "$num is even number"
else
echo "$num is odd number"
fi
```

Read 9 lines

Help Exit Write Out Read File Where Is Replace Cut Paste Execute Justify Location Go To Line Undo Redo Set Mark Copy

```
vboxuser@student:~/shilpa$ nano p2.sh
vboxuser@student:~/shilpa$ nano p2.sh
vboxuser@student:~/shilpa$ bash p2.sh
Enter the number to check even or odd=
24
24 is even number
vboxuser@student:~/shilpa$ bash p2.sh
Enter the number to check even or odd=
13
13 is odd number
vboxuser@student:~/shilpa$ nano p2.sh
vboxuser@student:~/shilpa$
```

7)Factorial num:



```
GNU nano 6.2 fact.sh *
echo "Enter the number="
read num
fact=1
for((i=num;i>0;i--))
do
fact=$((fact*i))
done
echo "Factorial of $num = $fact"
```

Help Exit Write Out Read File Where Is Replace Cut Paste Execute Justify Location Go To Line Undo Redo Set Mark Copy

```
fact.sh: line 4: then
vboxuser@student:~/shilpa$ nano fact.sh
vboxuser@student:~/shilpa$ bash fact.sh
Enter the number=
5
Factorial of 5 = 120
vboxuser@student:~/shilpa$ nano fact.sh
vboxuser@student:~/shilpa$ bash fact.sh
Enter the number=
3
Factorial of 3 = 6
vboxuser@student:~/shilpa$ nano fact.sh
vboxuser@student:~/shilpa$ bash fact.sh
Enter the number=
5
Factorial of num = 120
vboxuser@student:~/shilpa$ nano fact.sh
vboxuser@student:~/shilpa$
```

8]Case program:

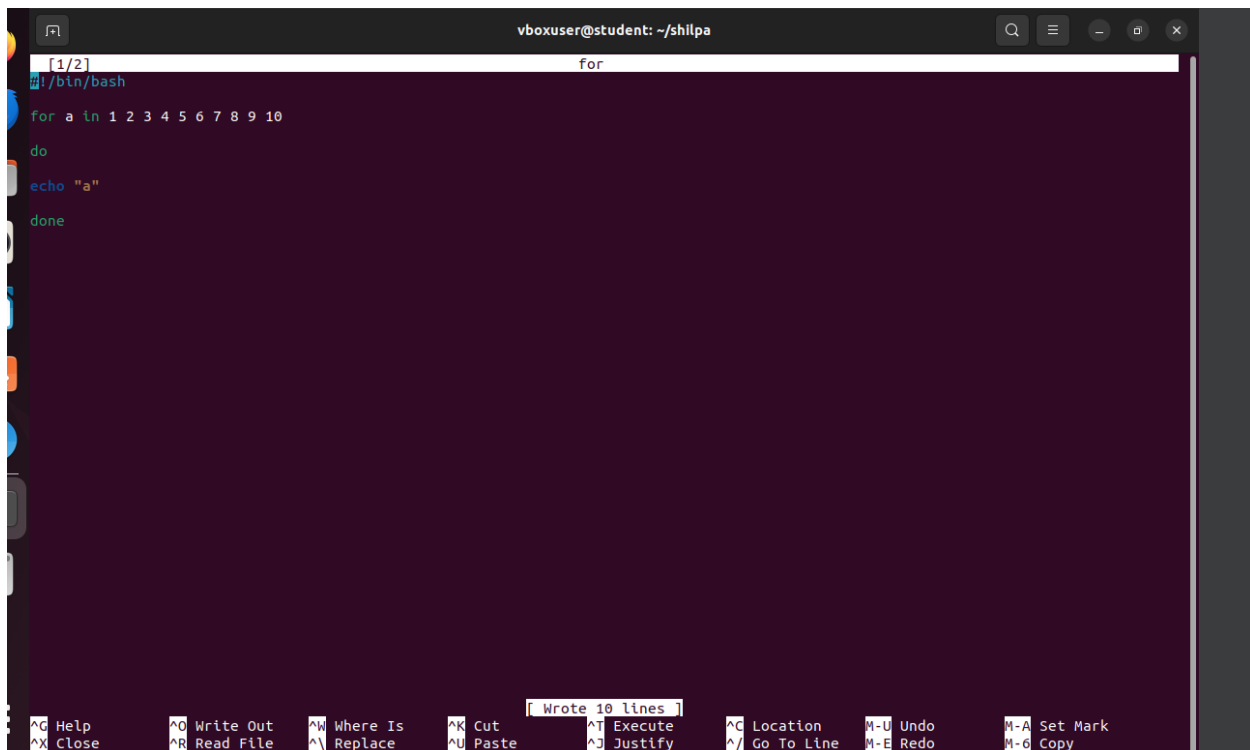
```
GNU nano 6.2 case.sh
-e "1.english \n 2.Hindi \n 3.Marathi"
read -p "choose an option=" num

case $num in
1)
echo "welcome to IACSD"
;;
2)
echo "IACSD me aapka swagat hai"
;;
3)
echo "IACSD madhe apla swagta aahe"
;;
*)
echo "Good bye"
;;
esac

[ Wrote 24 lines ]
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo M-A Set Mark
^X Exit ^R Read File ^\ Replace ^J Paste ^I Justify ^_ Go To Line M-F Redo M-G Conv
```

```
vboxuser@student:~/shilpa$ nano case.sh
vboxuser@student:~/shilpa$ bash case.sh
1.english
2.Hindi
3.Marathi
choose an option=1
welcome to IACSD
vboxuser@student:~/shilpa$
vboxuser@student:~/shilpa$ bash case.sh
1.english
2.Hindi
3.Marathi
choose an option=3
IACSD madhe apla swagta aahe
vboxuser@student:~/shilpa$ nano if.sh
vboxuser@student:~/shilpa$ nano if.sh
vboxuser@student:~/shilpa$ bash if.sh
```

9]For loop:



The screenshot shows a terminal window titled "vboxuser@student: ~/shilpa". Inside the terminal, a nano editor window titled "for" is open, displaying a bash script for a for loop. The script is as follows:

```
[1/2]
#!/bin/bash
for a in 1 2 3 4 5 6 7 8 9 10
do
echo "a"
done
```

At the bottom of the nano editor, a status bar indicates "Wrote 10 lines". Below the editor, a row of keyboard shortcuts is visible: ^G Help, ^X Close, ^O Write Out, ^R Read File, ^W Where Is, ^H Replace, ^K Cut, ^U Paste, ^T Execute, ^J Justify, ^C Location, ^_ Go To Line, M-U Undo, M-E Redo, M-A Set Mark, and M-C Copy.

```

vboxuser@student:~/shilpa$ nano while.sh
vboxuser@student:~/shilpa$ nano for .sh
vboxuser@student:~/shilpa$ bash for .sh
a
a
a
a
a
a
a
a
a
a
vboxuser@student:~/shilpa$ nano for .sh

```

10]for loop:

```

GNU nano 6.2 shilpa1.sh
#!/bin/bash

for b in {1..10}
do
echo $b
done

```

Wrote 8 lines

Help Exit Write Out Read File Where Is Replace Cut Paste Execute Justify Location Go To Line Undo Redo Set Mark Copy

```

vboxuser@student:~/shilpa$ bash shilpa1.sh
{1.....10}
vboxuser@student:~/shilpa$ nano shilpa1.sh
vboxuser@student:~/shilpa$ nano shilpa1.sh
vboxuser@student:~/shilpa$ bash shilpa1.sh
1
2
3
4
5
6
7
8
9
10
vboxuser@student:~/shilpa$ nano shilpa1.sh
vboxuser@student:~/shilpa$

```


11]Average of numbers:

```
aws | Services | Search
GNU nano 6.2
echo "Enter 3 numbers="
read n1
read n2
read n3
avg=$((n1+n2+n3)/3)
echo "Average of three numbers= $avg"

ubuntu@ip-172-31-32-186:~$ nano avg.sh
ubuntu@ip-172-31-32-186:~$ bash avg.sh
Enter 3 numbers=
1
2
3
Average of three numbers= 2
```

12]GCD of two numbers:

```
GNU nano 6.2
echo "Enter 2 numbers="
read n1
read n2
for((i=2;i<n2;i++))
do
if [ $((n1 % i)) -eq 0 -a $((n2 % i)) -eq 0 ]
then
gcd=$i
fi
done
echo "GCD=$gcd"

ubuntu@ip-172-31-32-186:~$ nano gcd.sh
ubuntu@ip-172-31-32-186:~$ bash gcd.sh
Enter 2 numbers=
35
15
GCD=5
```

13]Sum of digit:

```
GNU nano 6.2 sum1.sh
echo "Enter the number="
read n
sum=0
rem=0
while [ $n -gt 0 ]
do
rem=$(( $n % 10 ))
sum=$(( $sum + $rem ))
n=$(( $n / 10 ))
done
echo "SUM=" $sum
```

```
ubuntu@ip-172-31-32-186:~$ nano sum1.sh
ubuntu@ip-172-31-32-186:~$ bash sum1.sh
Enter the number=
123
SUM= 6
ubuntu@ip-172-31-32-186:~$ nano sum1.sh
ubuntu@ip-172-31-32-186:~$ bash sum1.sh
Enter the number=
378
SUM= 18
ubuntu@ip-172-31-32-186:~$
```

14]Numbers printing:

```
GNU nano 6.2
echo "Enter the number="
read n
for((i=0;i<=n;i++))
do
echo "Numbers=" $i
done
```

```
ubuntu@ip-172-31-32-186:~$ nano sum.sh
ubuntu@ip-172-31-32-186:~$ bash sum.sh
Enter the number=
10
Numbers= 0
Numbers= 1
Numbers= 2
Numbers= 3
Numbers= 4
Numbers= 5
Numbers= 6
Numbers= 7
Numbers= 8
Numbers= 9
Numbers= 10
```

15]Maximum number:

```
GNU nano 6.2 minmax.sh
echo "Enter the 3 numbers="
read n1
read n2
read n3
if [ $n1 -gt $n2 ] && [ $n1 -gt $n3 ]
then
echo "$n1 is max number"
elif [ $n2 -gt $n1 ] && [ $n2 -gt $n3 ]
then
echo "$n2 is max number"
else
echo "$n3 is max"
fi
```

```
ubuntu@ip-172-31-32-186:~$ nano minmax.sh
ubuntu@ip-172-31-32-186:~$ bash minmax.sh
Enter the 3 numbers=
23
56
23
56 is max number
ubuntu@ip-172-31-32-186:~$ nano minmax.sh
ubuntu@ip-172-31-32-186:~$
```

16]Reverse the given number:

```
GNU nano 6.2 rev.sh
echo "Enter the number="
read n
rev=0
rem=0
while [ $n -gt 0 ]
do
rem=$(( $n % 10 ))
rev=$(( $rev * 10 + $rem ))
n=$(( $n / 10 ))
done
echo "Reverse=" $rev

ubuntu@ip-172-31-32-186:~$ nano rev.sh
ubuntu@ip-172-31-32-186:~$ bash rev.sh
Enter the number=
134
Reverse= 431
```

PATTERN:

17]

```
aws Services Search [Alt+S]
GNU nano 6.2 pattern1.sh
for ((row=1;row<=4;row++))
do
for ((col=1;col<=row;col++))
do
echo -n "*"
done
echo ""
done

ubuntu@ip-172-31-6-50:~$ nano pattern1.sh
ubuntu@ip-172-31-6-50:~$ bash pattern1.sh
*
**
***
****
ubuntu@ip-172-31-6-50:~$
```

18]

```
GNU nano 6.2 pattern2.sh
for ((row=1;row<=5;row++))
do
for ((col=5;col>row;col--))
do
echo -n "#"
done
echo " "
done

ubuntu@ip-172-31-6-50:~$ nano pattern2.sh
ubuntu@ip-172-31-6-50:~$ bash pattern2.sh
####
###
##
#
```

19]

```
aws Services Search [Alt+S]
GNU nano 6.2 pattern4.sh
num=1
for ((row=1;row<=5;row++))
do
for ((col=5;col>0;col--))
do
echo -n "$num"
num=$(( $num + 1 ))
done
num=1
echo " "
done

ubuntu@ip-172-31-6-50:~$ nano pattern4.sh
ubuntu@ip-172-31-6-50:~$ bash pattern4.sh
12345
12345
12345
12345
12345
```

20]

```
GNU nano 6.2 pattern3.sh
num=1
for ((row=1;row<=5;row++))
do
for ((j=1;j<=$row;j++))
do
echo -n "$num"
num=$(( $num + 1 ))
done
num=1
echo " "
done
```

```
ubuntu@ip-172-31-6-50:~$ nano pattern3.sh
ubuntu@ip-172-31-6-50:~$ bash pattern3.sh
1
12
123
1234
12345
```

21]

```
GNU nano 6.2 pattern4.sh
num=1
for ((row=1;row<=5;row++))
do
for ((col=5;col>row;col--))
do
echo -n "$num"
num=$(( $num + 1 ))
done
num=1
echo " "
done
```

```
ubuntu@ip-172-31-6-50:~$ nano pattern4.sh
ubuntu@ip-172-31-6-50:~$ bash pattern4.sh
1234
123
12
1
```