

# **EXP NO - 3**

CST 206 - Operating Systems Lab

14/5/2021

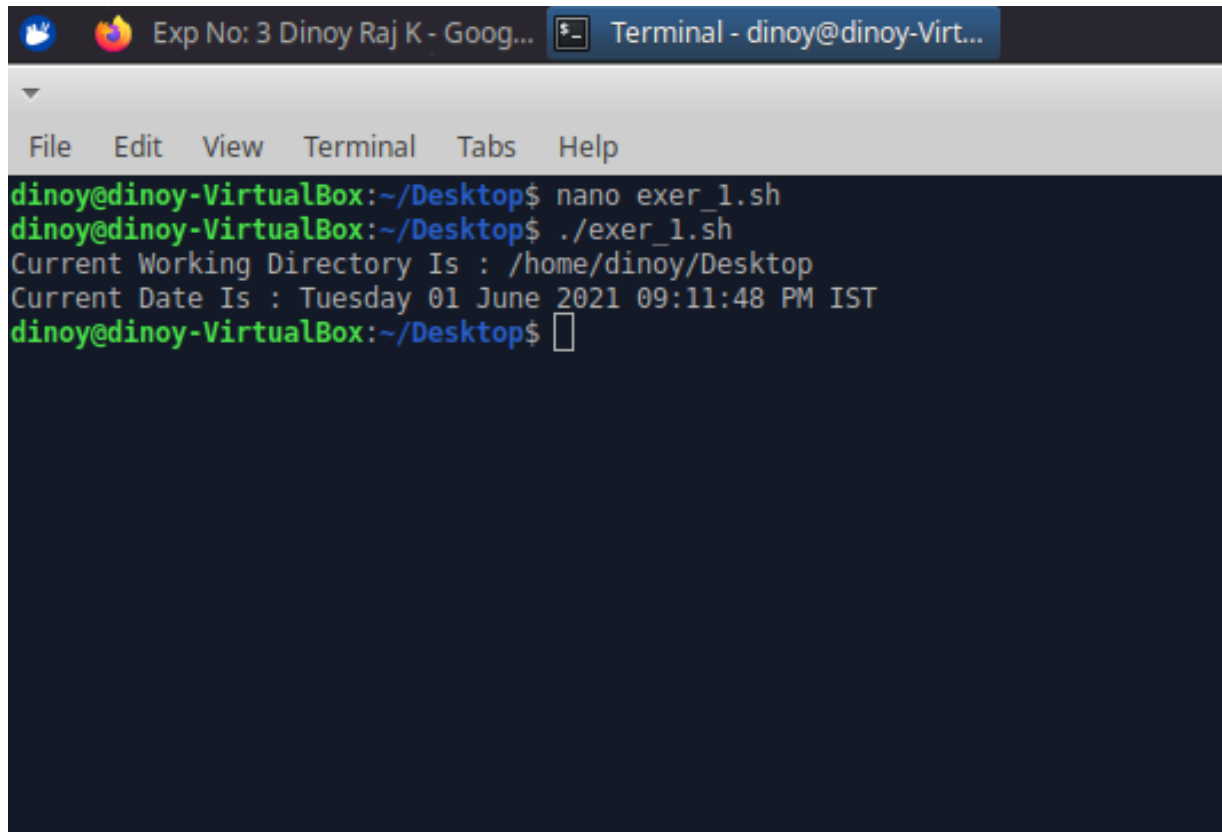
**Dinoy Raj K**  
Roll No : 21

## Exercise1

Write a shell script program to display the name of the current working directory and date.

```
GNU nano 4.8          exer_1.sh
#!/bin/bash

echo "Current Working Directory Is : $(pwd)"
echo "Current Date Is : $(date)"
```

A screenshot of a terminal window titled "Terminal - dinoy@dinoy-Virt...". The terminal shows the user "dinoy" at the "dinoy-VirtualBox" machine in the directory "~/Desktop". The user runs the command "nano exer\_1.sh" to create a file. Then, they run "./exer\_1.sh", which outputs "Current Working Directory Is : /home/dinoy/Desktop" and "Current Date Is : Tuesday 01 June 2021 09:11:48 PM IST". The terminal window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The top of the window shows a taskbar with icons for a web browser, a file manager, and the terminal itself, along with the text "Exp No: 3 Dinoy Raj K - Goog...".

```
dinoy@dinoy-VirtualBox:~/Desktop$ nano exer_1.sh
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_1.sh
Current Working Directory Is : /home/dinoy/Desktop
Current Date Is : Tuesday 01 June 2021 09:11:48 PM IST
dinoy@dinoy-VirtualBox:~/Desktop$
```

## Exercise2

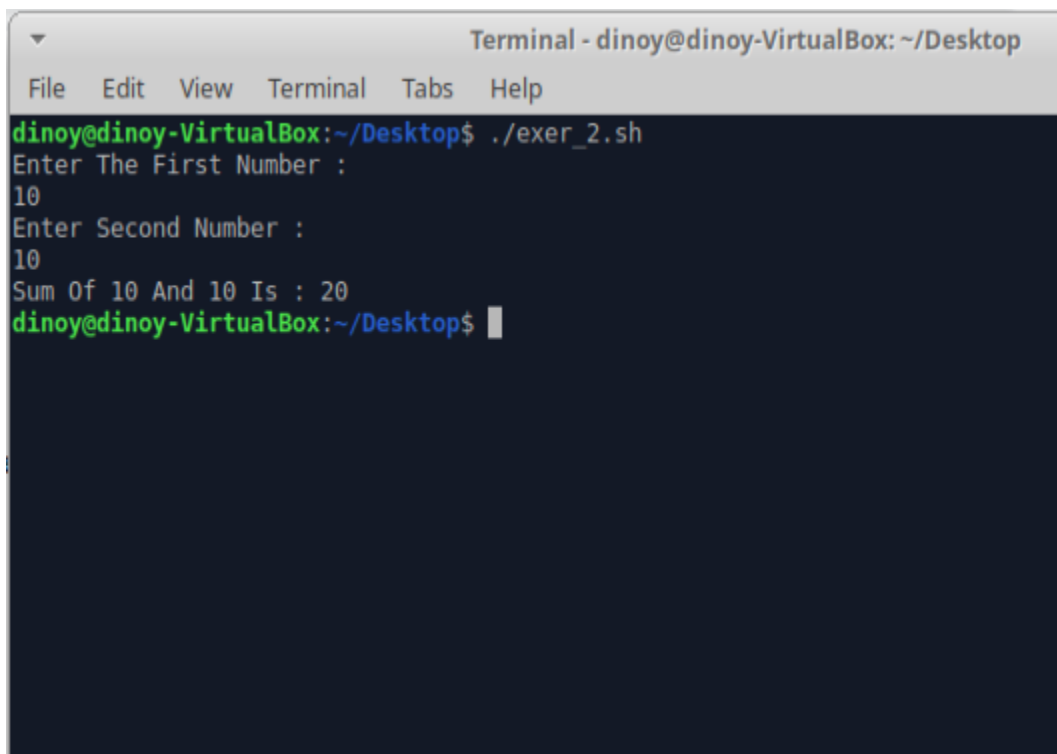
Write a shell script program to perform an arithmetic operation on two numbers.

```
GNU nano 4.8                                exer_2.sh
#!/bin/bash

echo "Enter The First Number : "
read x
echo "Enter Second Number : "
read y

let "z= $x+$y"

echo "Sum Of $x And $y Is : $z"
```



```
Terminal - dinoy@dinoy-VirtualBox: ~/Desktop
File Edit View Terminal Tabs Help
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_2.sh
Enter The First Number :
10
Enter Second Number :
10
Sum Of 10 And 10 Is : 20
dinoy@dinoy-VirtualBox:~/Desktop$
```

### Exercise3

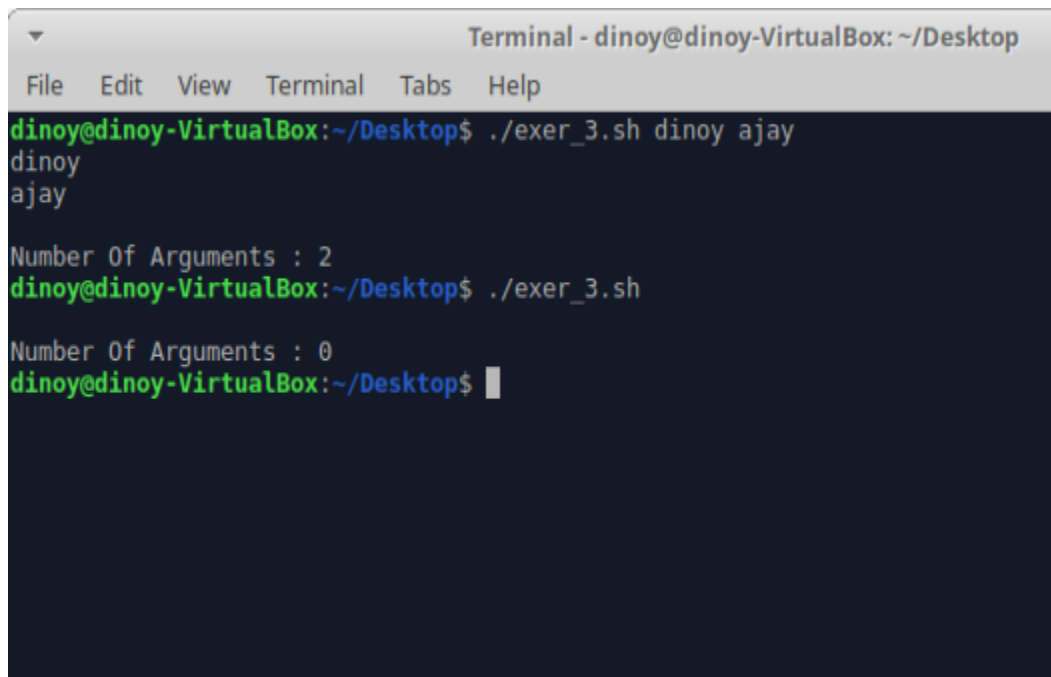
Write a shell script program to pass arguments to the program and display the count of arguments and content.

```
GNU nano 4.8                                exer_3.sh
#!/bin/bash

for arg in $@
do
    echo "$arg"

done

echo -e "\nNumber Of Arguments : $#"
```

A terminal window titled "Terminal - dinoy@dinoy-VirtualBox: ~/Desktop" with a menu bar (File, Edit, View, Terminal, Tabs, Help). The terminal shows the execution of a shell script named exer\_3.sh. The first command is ./exer\_3.sh dinoy ajay, which outputs "dinoy" and "ajay" on separate lines, followed by "Number Of Arguments : 2". The second command is ./exer\_3.sh, which outputs "Number Of Arguments : 0". The prompt is dinoy@dinoy-VirtualBox:~/Desktop\$.

```
Terminal - dinoy@dinoy-VirtualBox: ~/Desktop
File Edit View Terminal Tabs Help
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_3.sh dinoy ajay
dinoy
ajay
Number Of Arguments : 2
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_3.sh
Number Of Arguments : 0
dinoy@dinoy-VirtualBox:~/Desktop$
```

## Exercise4

Write a shell script program to test whether 3 arguments are being passed to it..

GNU nano 4.8

exer\_4.sh

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

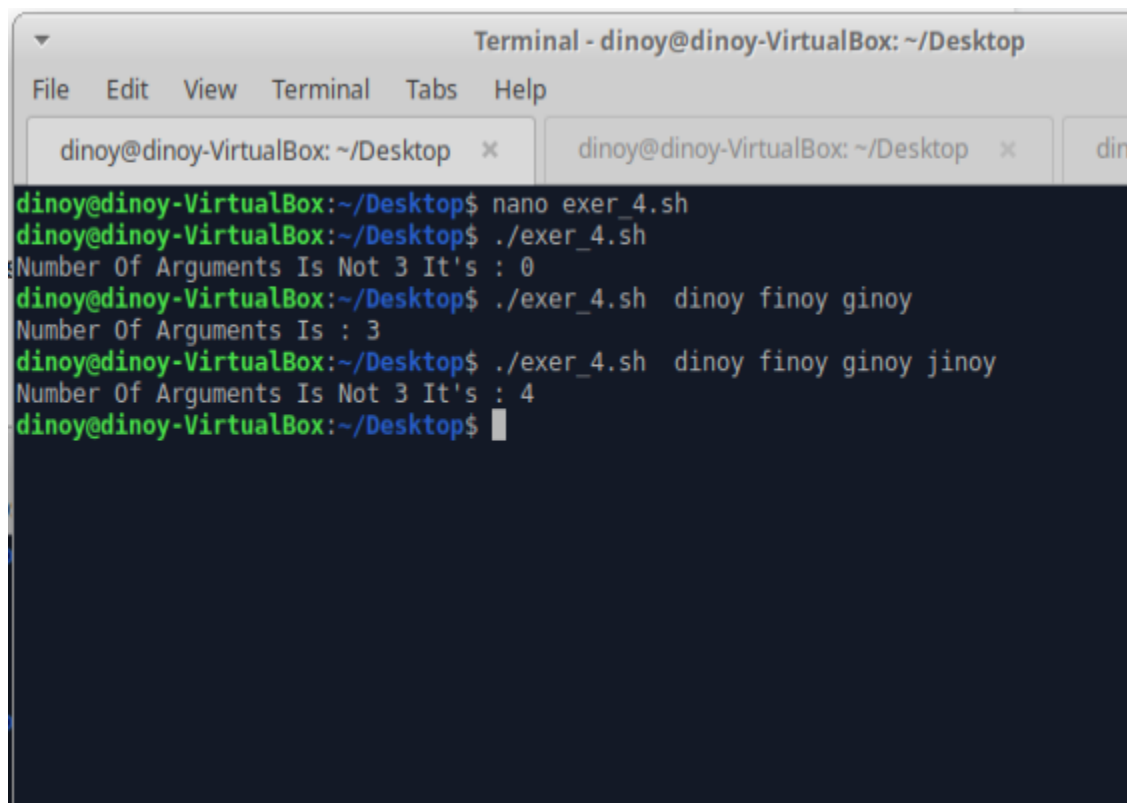
```
if [ $# -eq 3 ]; then
```

```
    echo "Number Of Arguments Is : $#"
```

```
else
```

```
    echo "Number Of Arguments Is Not 3 It's : $#"
```

```
fi
```



```
Terminal - dinoy@dinoy-VirtualBox: ~/Desktop
File Edit View Terminal Tabs Help
dinoy@dinoy-VirtualBox: ~/Desktop x dinoy@dinoy-VirtualBox: ~/Desktop x dinoy@dinoy-VirtualBox: ~/Desktop x
dinoy@dinoy-VirtualBox:~/Desktop$ nano exer_4.sh
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_4.sh
Number Of Arguments Is Not 3 It's : 0
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_4.sh dino finoy ginoy
Number Of Arguments Is : 3
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_4.sh dino finoy ginoy jinoy
Number Of Arguments Is Not 3 It's : 4
dinoy@dinoy-VirtualBox:~/Desktop$
```

## Exercise5

Write a shell script program to check whether two strings sent as command line arguments are same or not using test command.

GNU nano 4.8

exer\_5.sh

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

```
if [ $# -lt 2 ]; then
```

```
    echo "You Must Pass Two Argument"
```

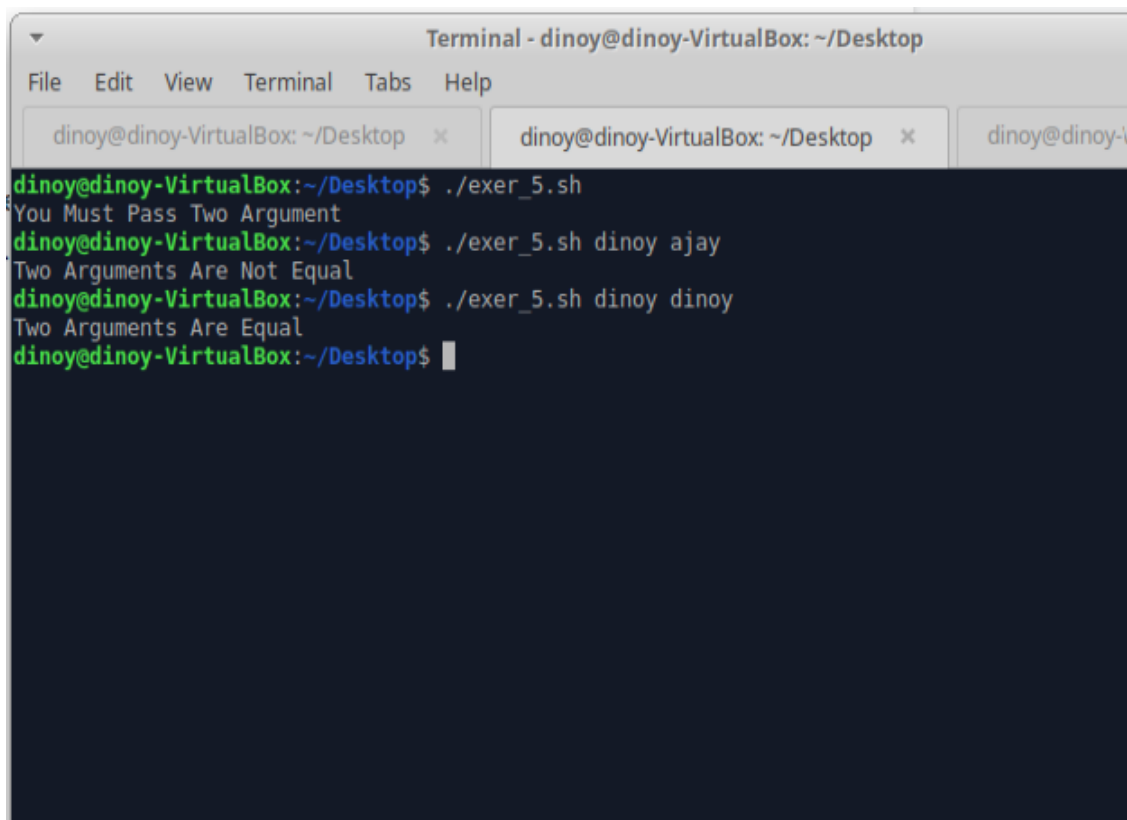
```
elif [ $1 == $2 ]; then
```

```
    echo "Two Arguments Are Equal"
```

```
else
```

```
    echo "Two Arguments Are Not Equal"
```

```
fi
```



```
Terminal - dinoy@dinoy-VirtualBox: ~/Desktop
File Edit View Terminal Tabs Help
dinoy@dinoy-VirtualBox: ~/Desktop x dinoy@dinoy-VirtualBox: ~/Desktop x dinoy@dinoy-V
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_5.sh
You Must Pass Two Argument
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_5.sh dinoy ajay
Two Arguments Are Not Equal
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_5.sh dinoy dinoy
Two Arguments Are Equal
dinoy@dinoy-VirtualBox:~/Desktop$
```

## Exercise6a

Let argument be a filename. Write a shell script program to check whether the file exist or not

**GNU nano 4.8**

**exer\_6.sh**

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

```
if [ $# -lt 1 ]; then
```

```
    echo "it should contain atleast one argument"
```

```
else
```

```
    if [ -f $1 ]; then
```

```
        echo "The File $1 Exist"
```

```
    else
```

```
        echo "The File $1 Does Not Exist"
```

```
    fi
```

```
fi
```

```
Terminal - dinoy@dinoy-VirtualBox: ~/Desktop
File Edit View Terminal Tabs Help
dinoy@dinoy-VirtualBox: ~/Desktop x dinoy@dinoy-VirtualBox: ~/Desktop
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_6.sh dinoyrajgfggh
The File dinoyrajgfggh Does Not Exist
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_6.sh d
The File d Does Not Exist
dinoy@dinoy-VirtualBox:~/Desktop$ ls
address d.txt exe2.txt exer_2.sh exer_4.sh exer_6.sh puthiya w
ag.txt e.txt exer_1.sh exer_3.sh exer_5.sh names.txt test1
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_6.sh d.txt
The File d.txt Exist
dinoy@dinoy-VirtualBox:~/Desktop$
```



## Exercise6b

Modify the above program to rename a filename with another name passed as argument, Also check number of parameters being passed.

```
GNU nano 4.8                                exer_7.sh
#!/bin/bash

if [ $# -lt 2 ]; then
    echo " Atleast Two File Required Inorder To Change The Name"
else
    if [ -f $1 ]; then
        mv $1 $2
        echo "File Renamed : $1 changed to $2"
    else
        echo "$1 Does Not Exist "
    fi
fi
```

```
Terminal - dinoy@dinoy-VirtualBox: ~/Desktop
File Edit View Terminal Tabs Help
dinoy@dinoy-VirtualBox: ~/Desktop x dinoy@dinoy-VirtualBox: ~/Desktop

dinoy@dinoy-VirtualBox:~/Desktop$ nano exer_7.sh
dinoy@dinoy-VirtualBox:~/Desktop$ chmod +x exer_7.sh
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_7.sh
Atleast Two File Required Inorder To Change The Name
dinoy@dinoy-VirtualBox:~/Desktop$ ls
address d.txt exe2.txt exer_2.sh exer_4.sh exer_6.sh names.txt test1
ag.txt e.txt exer_1.sh exer_3.sh exer_5.sh exer_7.sh outhiya w
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_7.sh d.txt e.txt
File Renamed : d.txt changed to e.txt
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_7.sh finoy d
finoy Does Not Exist
dinoy@dinoy-VirtualBox:~/Desktop$
```

## Exercise7

Write a shell script program to test whether a string is present in a file or not.

GNU nano 4.8

exer\_7b.sh

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

```
if [ $# -lt 2 ]; then
```

```
    echo "Require String And Filename As Argument"
```

```
else
```

```
    if [ -f $2 ]; then
```

```
        count=$(grep -c $1 $2)
```

```
        if [ $count != 0 ]; then
```

```
            echo "String Found In That File"
```

```
        else
```

```
            echo "String Not Found In That File"
```

```
        fi
```

```
    fi
```

```
fi
```

```
Terminal - dinoy@dinoy-VirtualBox: ~/Desktop
File Edit View Terminal Tabs Help
dinoy@dinoy-VirtualBox: ~/Desktop x dinoy@dinoy-VirtualBox: ~
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_7b.sh
Require String And Filename As Argument
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_7b.sh Friday e.txt
String Found In That File
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_7b.sh Fridays e.txt
String Not Found In That File
dinoy@dinoy-VirtualBox:~/Desktop$
```

## Exercise8

Write a shell script program to copy the content of file1 to file 2. If file2 exists then append the content of file1 to its original content.

```
GNU nano 4.8          exer_8.sh
#!/bin/bash

if [ $# -lt 2 ]; then
    echo "should need two file input"
else
    if [ -f $2 ]; then
        cat $1>>$2
        echo "$2 already exist appended"
    else
        cat $1>$2
        echo "new $2 created "
    fi
fi
```

```
Terminal - dinoy@dinoy-VirtualBox: ~/Desktop
File Edit View Terminal Tabs Help
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_8.sh
should need two file input
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_8.sh e.txt d.txt
new d.txt created
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_8.sh e.txt d.txt
d.txt already exist appended
dinoy@dinoy-VirtualBox:~/Desktop$
```

## Exercise9

Write a shell script program that take first 10 lines from first file and rest 10 lines from second file and move them in a third file. The filename will be sent as command line arguments.

GNU nano 4.8                      exer\_9.sh

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

```
if [ $# -lt 3 ]; then
```

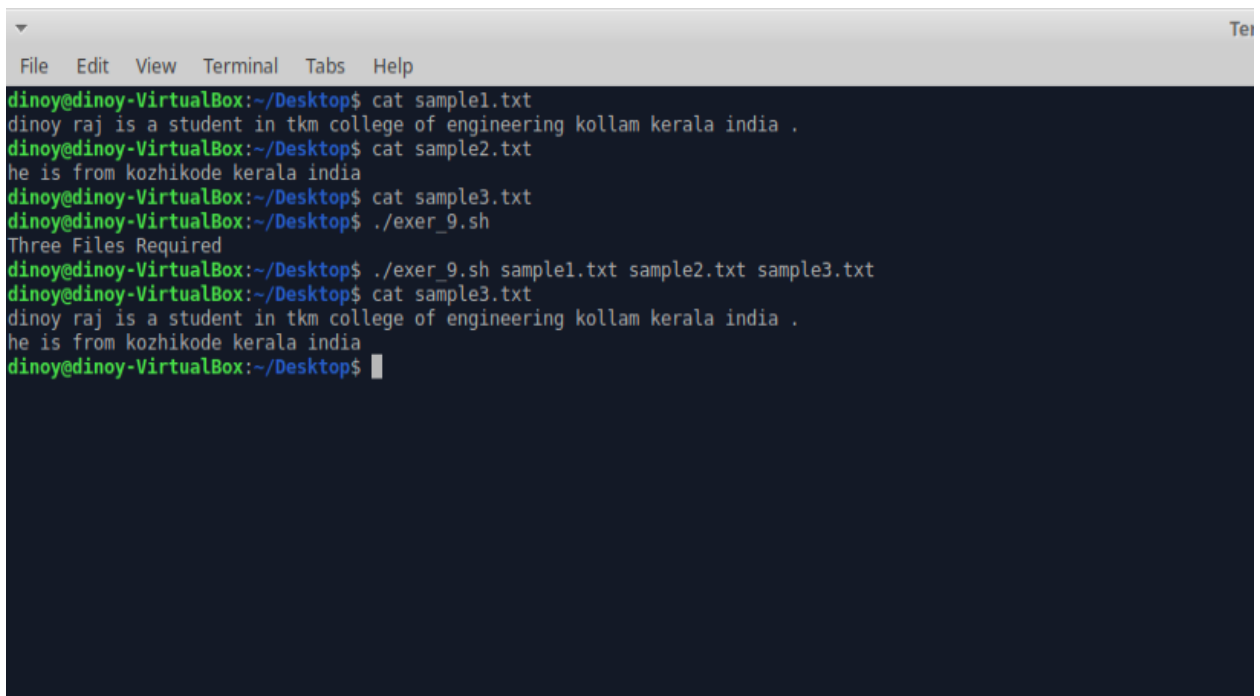
```
    echo "Three Files Required"
```

```
else
```

```
    head -10 $1 > $3
```

```
    head -10 $2 >> $3
```

```
fi
```



```
dinoy@dinoy-VirtualBox:~/Desktop$ cat sample1.txt
dinoy raj is a student in tkm college of engineering kollam kerala india .
dinoy@dinoy-VirtualBox:~/Desktop$ cat sample2.txt
he is from kozhikode kerala india
dinoy@dinoy-VirtualBox:~/Desktop$ cat sample3.txt
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_9.sh
Three Files Required
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_9.sh sample1.txt sample2.txt sample3.txt
dinoy@dinoy-VirtualBox:~/Desktop$ cat sample3.txt
dinoy raj is a student in tkm college of engineering kollam kerala india .
he is from kozhikode kerala india
dinoy@dinoy-VirtualBox:~/Desktop$
```

## Exercise10

Write a shell script program to show number of files in the current directory beginning with aspecified character.

```
GNU nano 4.8          exer_10.sh
#!/bin/bash

if [ $# -lt 1 ]; then
    echo "Should Pass String As Argument"
else
    echo "Files With Starting Letters $1 : "
    ls | grep '^$1
    echo "Total Number Of Files Starting With String $! : "
    ls|grep -c '^$1

fi
```



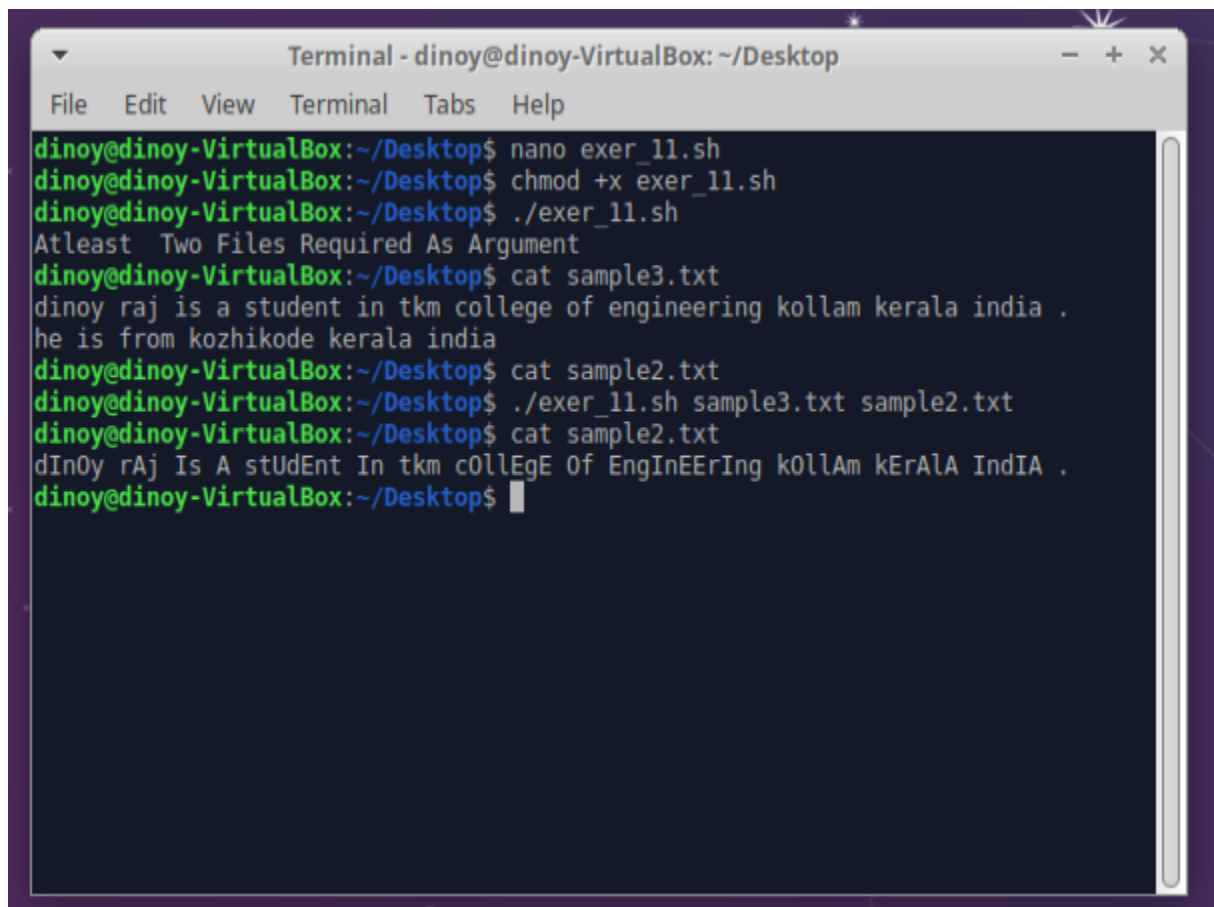
```
Terminal - dinoy@dinoy-VirtualBox: ~/Desktop
File Edit View Terminal Tabs Help
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_10.sh
Should Pass String As Argument
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_10.sh e
Files With Starting Letters e :
e.txt
exe2.txt
exer_10.sh
exer_1.sh
exer_2.sh
exer_3.sh
exer_4.sh
exer_5.sh
exer_6.sh
exer_6.sh.save
exer_7a.sh.save
exer_7b.sh
exer_7.sh
exer_8.sh
exer_9.sh
Total Number Of Files Starting With String :
15
dinoy@dinoy-VirtualBox:~/Desktop$
```

## Exercise11

Write a shell script program to read a line from a file and store them into another file after converting all the vowels from first file into uppercase.

```
GNU nano 4.8          exer_11.sh
#!/bin/bash

if [ $# -lt 2 ]; then
    echo "Atleast Two Files Required As Argument"
else
    head -1 $1 | tr 'aeiou' 'AEIOU' > $2
fi
```



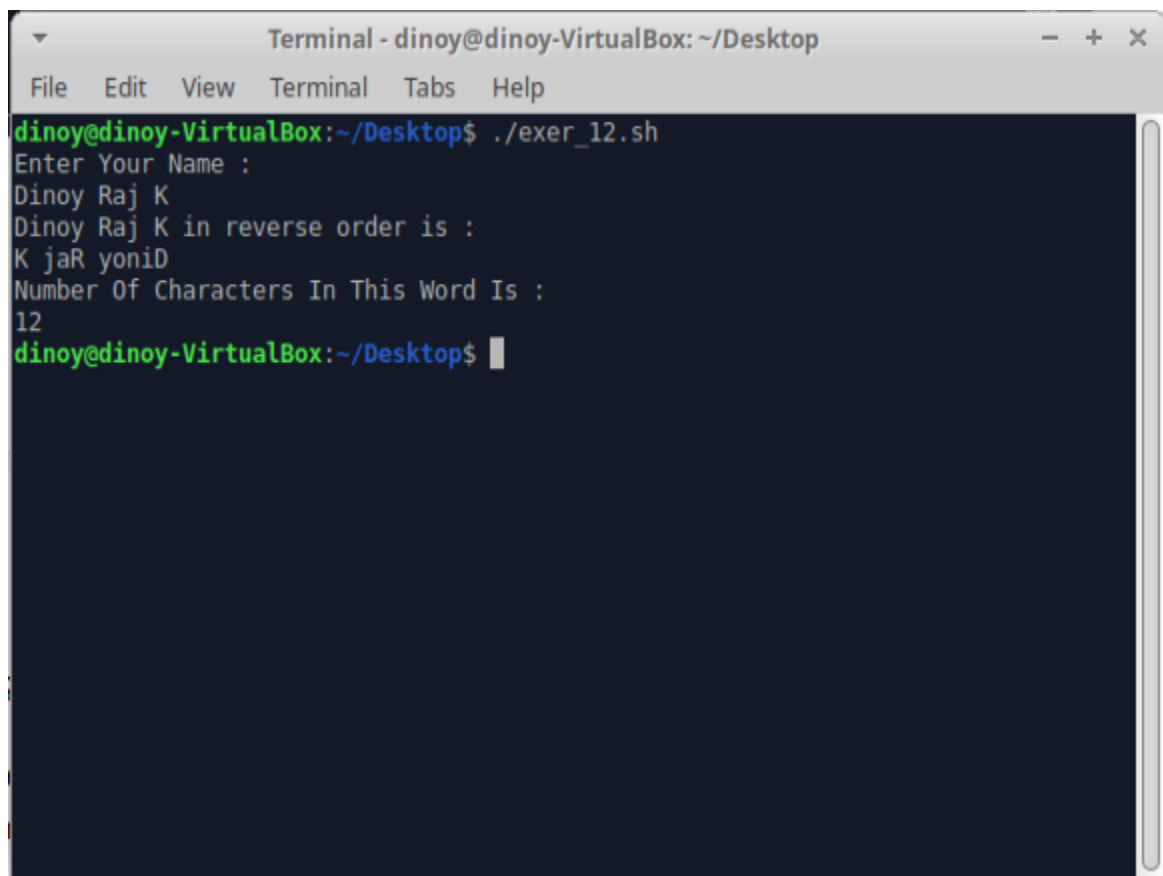
```
Terminal - dinoy@dinoy-VirtualBox: ~/Desktop
File Edit View Terminal Tabs Help
dinoy@dinoy-VirtualBox:~/Desktop$ nano exer_11.sh
dinoy@dinoy-VirtualBox:~/Desktop$ chmod +x exer_11.sh
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_11.sh
Atleast Two Files Required As Argument
dinoy@dinoy-VirtualBox:~/Desktop$ cat sample3.txt
dinoy raj is a student in tkm college of engineering kollam kerala india .
he is from kozhikode kerala india
dinoy@dinoy-VirtualBox:~/Desktop$ cat sample2.txt
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_11.sh sample3.txt sample2.txt
dinoy@dinoy-VirtualBox:~/Desktop$ cat sample2.txt
dInOy rAj Is A stUdEnt In tkm collEgE Of EngInEeRIng kollAm kErAlA IndIA .
dinoy@dinoy-VirtualBox:~/Desktop$
```

## Exercise12

Write a shell script program that accepts the name of the user and prints the entire name in reverse and also print the length of the entire name

```
GNU nano 4.8          exer_12.sh
#!/bin/bash

echo "Enter Your Name : "
read nam
echo "$nam in reverse order is : "
echo $nam | rev
echo "Number Of Characters In This Word Is : "
echo $nam | wc -m
```



```
Terminal - dinoy@dinoy-VirtualBox: ~/Desktop
File Edit View Terminal Tabs Help
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_12.sh
Enter Your Name :
Dinoy Raj K
Dinoy Raj K in reverse order is :
K jaR yoniD
Number Of Characters In This Word Is :
12
dinoy@dinoy-VirtualBox:~/Desktop$
```

### Exercise13

Consider a file school.dat with the following fields: roll no, name, and marks. Write a shell script program to sort the file in descending order of marks

GNU nano 4.8

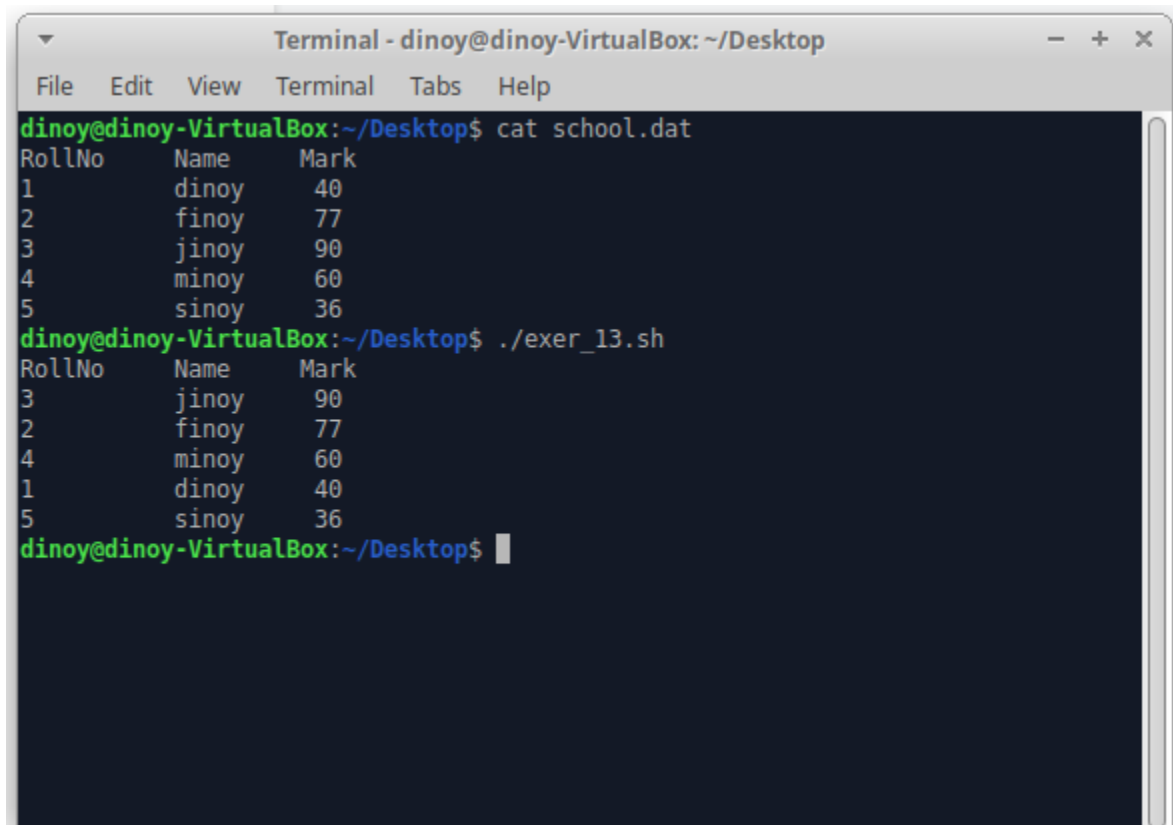
exer\_13.sh

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

```
file="school.dat"
```

```
head -n 1 $file
```

```
tail -n +2 $file|sort -s -r -nk3
```



The screenshot shows a terminal window titled "Terminal - dinoy@dinoy-VirtualBox: ~/Desktop". The user first runs `cat school.dat`, displaying the contents of the file. Then, the user runs `./exer_13.sh`, which sorts the file by marks in descending order. The output shows the first line of the file (header) and the sorted data.

```
dinoy@dinoy-VirtualBox:~/Desktop$ cat school.dat
RollNo    Name    Mark
1         dinoy   40
2         finoy   77
3         jinoy   90
4         minoy   60
5         sinoy   36
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_13.sh
RollNo    Name    Mark
3         jinoy   90
2         finoy   77
4         minoy   60
1         dinoy   40
5         sinoy   36
dinoy@dinoy-VirtualBox:~/Desktop$
```

## Exercise14

Write a shell script program to display sum of first n numbers

```
GNU nano 4.8          exer_14.sh
#!/bin/bash

echo "Enter Value : "
read -r n
sum=0
var=$n
while [ $n != 0 ]
do
let "sum=$sum+$n"
let "n=$n-1"

done

echo "The Sum Upto $var is : $sum "
```

```
Terminal - dinoy@dinoy-VirtualBox: ~/Desktop
File Edit View Terminal Tabs Help
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_14.sh
Enter Value :
10
The Sum Upto 10 is : 55
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_14.sh
Enter Value :
221
The Sum Upto 221 is : 24531
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_14.sh
Enter Value :
43223
The Sum Upto 43223 is : 934135476
dinoy@dinoy-VirtualBox:~/Desktop$
```

## Exercise15

Write a shell script program to display sum of first n numbers

GNU nano 4.8

exer\_15.sh

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

```
echo " Days In A Week "
```

```
while [ true ]
```

```
do
```

```
echo "Enter Number Between 1 - 7 :"
```

```
read n
```

```
if [ $n -eq 1 ];
```

```
then
```

```
    echo "Day is Monday";
```

```
elif [ $n -eq 2 ];
```

```
then
```

```
    echo "Day is Tuesday";
```

```
elif [ $n -eq 3 ];
```

```
then
```

```
    echo "Day is Wednesday";
```

```
elif [ $n -eq 4 ];
```

```
then
```

```
    echo "Day is Thursday";
```

```
elif [ $n -eq 5 ];
```

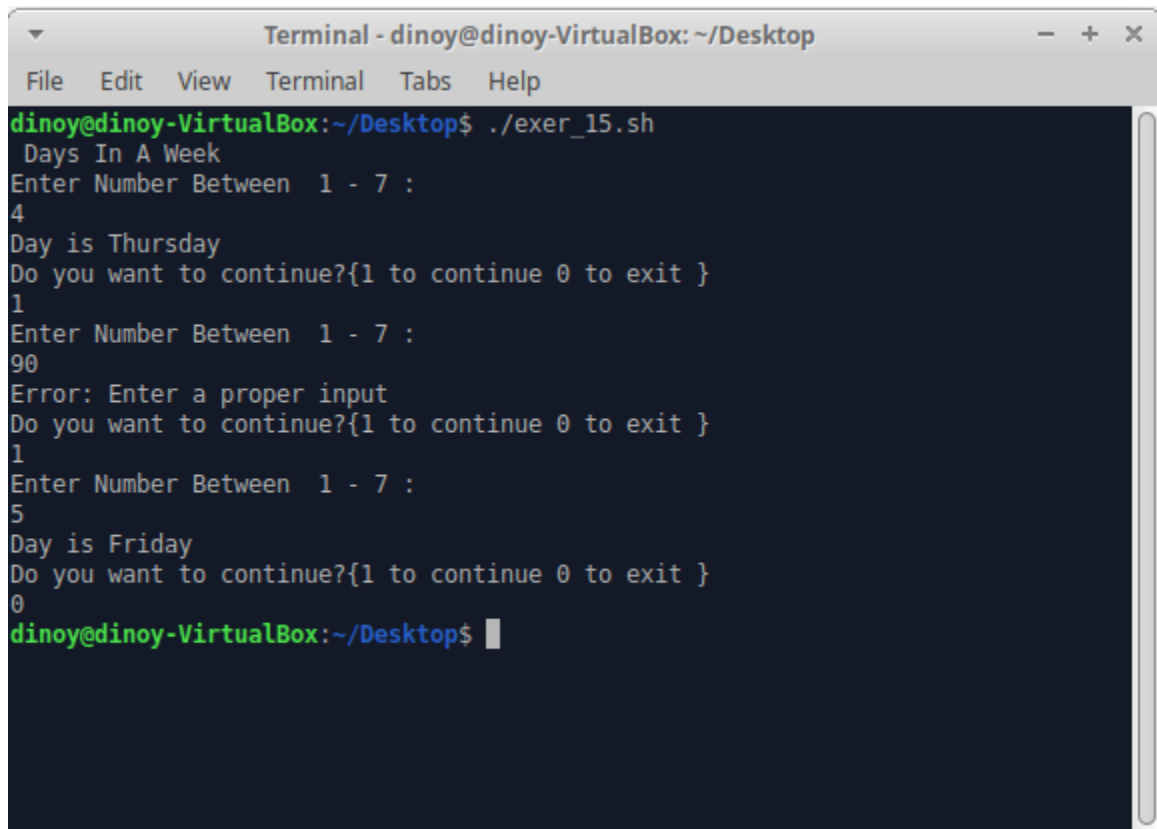
```
then
```

```
    echo "Day is Friday";
```

```
elif [ $n -eq 6 ];
```

```
then
```

```
    echo "Day is Saturday";
elif [ $n -eq 7 ];
then
    echo "Day is Sunday";
else
    echo "Error: Enter a proper input"
fi
echo "Do you want to continue?{1 to continue 0 to exit}"
read opt
if [ $opt != 1 ];
then
    exit 0
fi
done
```



The screenshot shows a terminal window titled "Terminal - dinoy@dinoy-VirtualBox: ~/Desktop". The window has a menu bar with "File", "Edit", "View", "Terminal", "Tabs", and "Help". The terminal content shows the execution of a script named `./exer_15.sh`. The script prompts the user to enter a number between 1 and 7. The first input is 4, which results in the output "Day is Thursday". The script then asks if the user wants to continue, with options 1 to continue or 0 to exit. The user enters 1, and the script prompts for another number. The user enters 90, which results in the output "Error: Enter a proper input". The script again asks if the user wants to continue, and the user enters 1. The script prompts for another number, and the user enters 5, which results in the output "Day is Friday". Finally, the script asks if the user wants to continue, and the user enters 0, which ends the script. The terminal prompt is now `dinoy@dinoy-VirtualBox:~/Desktop$`.

```
Terminal - dinoy@dinoy-VirtualBox: ~/Desktop
File Edit View Terminal Tabs Help
dinoy@dinoy-VirtualBox:~/Desktop$ ./exer_15.sh
Days In A Week
Enter Number Between 1 - 7 :
4
Day is Thursday
Do you want to continue?{1 to continue 0 to exit }
1
Enter Number Between 1 - 7 :
90
Error: Enter a proper input
Do you want to continue?{1 to continue 0 to exit }
1
Enter Number Between 1 - 7 :
5
Day is Friday
Do you want to continue?{1 to continue 0 to exit }
0
dinoy@dinoy-VirtualBox:~/Desktop$
```