PROGRAM 1

SHELL SCRIPT

```bash
1 #!/bin/bash
2
3 echo "The current working directory is $(pwd)"
4 echo "Today is `date`"
```

OUTPUT

```
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell1.sh
The current working directory is /home/amal/oslab
Today is Sunday 30 May 2021 04:44:11 PM IST
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$
```

PROGRAM 2

SHELL SCRIPT

```bash
1 #!/bin/bash
2
3 echo "Enter first number"
4 read a
5 echo "Enter second number"
6 read b
7 echo "The sum is "$((a + b))
```

OUTPUT

```
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell2.sh
Enter first number
10
Enter second number
15
The sum is 25
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell2.sh
Enter first number
-10
Enter second number
35
The sum is 25
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell2.sh
Enter first number
0
Enter second number
0
The sum is 0
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$
```

PROGRAM 3

SHELL SCRIPT

```bash
1 #!/bin/bash
2
3 echo Total no of arguments passed = $#
4 echo The arguments are : $*
```

OUTPUT

```
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell3.sh
Total no of arguments passed = 0
The arguments are :
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell3.sh amal
Total no of arguments passed = 1
The arguments are : amal
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell3.sh amal nath
Total no of arguments passed = 2
The arguments are : amal nath
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell3.sh amal nath m
Total no of arguments passed = 3
The arguments are : amal nath m
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ 
```

PROGRAM 4

SHELL SCRIPT

```bash
1 #!/bin/bash
2
3 if [ $# -eq 3 ]
4         then
5                 echo "3 arguments are passed"
6 else
7         echo "No of arguments is not 3"
8 fi
```

OUTPUT

```
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell4.sh
No of arguments is not 3
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell4.sh a
No of arguments is not 3
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell4.sh a b
No of arguments is not 3
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell4.sh a b c
3 arguments are passed
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell4.sh a b c d
No of arguments is not 3
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$
```

PROGRAM 5

SHELL SCRIPT

```
1 #!/bin/bash
2
3 if [ $# != 2 ]
4       then
5                echo No of strings must be 2
6 else
7        test $1 = $2 && echo "Strings are equal" || echo "Strings are not equal"
8 fi
```

OUTPUT

```
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell5.sh
No of strings must be 2
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell5.sh amal
No of strings must be 2
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell5.sh amal vishnu
Strings are not equal
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell5.sh amal amal
Strings are equal
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell5.sh amal nath m
No of strings must be 2
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$
```

PROGRAM 6

SHELL SCRIPT

```bash
#!/bin/bash

if [ $# = 1 ]
  then
    [ -f $1 ] && echo $1 exists || echo $1 doesn\'t exist
elif [ $# = 2 ]
  then
    if [ $1 == $2 ]
      then
        echo 'Both are the same files'
        exit
    fi
    [ -f $1 ] && echo `mv $1 $2` $1 successfully renamed to $2 || echo $1 doesn\'t exist
else
    echo No of parameters = $# \(Should be 1 or 2\)
fi
```

OUTPUT

```
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell6.sh
No of parameters = 0 (Should be 1 or 2)
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell6.sh a
a doesn't exist
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ ls
address    date.txt       f1      file1   hello.txt          'OS LAB Assignment 2.pdf'   school.dat   shell12.sh   shell15.sh   shell3.sh   shell6.sh   shell9.sh
amal.dat   encrypted.txt  f2      file2   helloworld.txt            sample.txt            shell10.sh   shell13.sh   shell1.sh    shell4.sh   shell7.sh   world.txt
amal.txt   encypted.txt   fdat2   file3   'OS LAB Assignment 1.pdf'  school1.dat          shell11.sh   shell14.sh   shell2.sh    shell5.sh   shell8.sh
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell6.sh sample.txt
sample.txt exists
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell6.sh sample.txt sample1.txt
sample.txt successfully renamed to sample1.txt
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ ls
 address    date.txt       f1      file1   hello.txt          'OS LAB Assignment 2.pdf'   school.dat   shell12.sh   shell15.sh   shell3.sh   shell6.sh   shell9.sh
 amal.dat   encrypted.txt  f2      file2   helloworld.txt            sample1.txt           shell10.sh   shell13.sh   shell1.sh    shell4.sh   shell7.sh   world.txt
 amal.txt   encypted.txt   fdat2   file3   'OS LAB Assignment 1.pdf'  school1.dat          shell11.sh   shell14.sh   shell2.sh    shell5.sh   shell8.sh
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell6.sh sample1.txt sample1.txt
Both are the same files
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell6.sh sample1.txt sample.txt
sample1.txt successfully renamed to sample.txt
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ ls
 address    date.txt       f1      file1   hello.txt          'OS LAB Assignment 2.pdf'   school.dat   shell12.sh   shell15.sh   shell3.sh   shell6.sh   shell9.sh
 amal.dat   encrypted.txt  f2      file2   helloworld.txt            sample.txt            shell10.sh   shell13.sh   shell1.sh    shell4.sh   shell7.sh   world.txt
 amal.txt   encypted.txt   fdat2   file3   'OS_LAB Assignment 1.pdf'  school1.dat          shell11.sh   shell14.sh   shell2.sh    shell5.sh   shell8.sh
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ 
```

PROGRAM 7

SHELL SCRIPT

```bash
#!/bin/bash

echo Enter filename
read FILE
if test -f $FILE; then
    echo Enter string to be searched
    read str
    grep -q $str $FILE && echo $str found in $FILE || echo $str not found in $FILE
else
    echo $FILE doesn\'t exist
    exit 1
fi
```

OUTPUT

```
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ cat sample.txt
amal
dinoy
emil
ajith
jijo
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell7.sh
Enter filename
a
a doesn't exist
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell7.sh
Enter filename
sample.txt
Enter string to be searched
amal
amal found in sample.txt
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell7.sh
Enter filename
sample.txt
Enter string to be searched
arjun
arjun not found in sample.txt
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$
```

PROBLEM 8

SHELL SCRIPT

```bash
1 #!/bin/bash
2
3 echo Enter file 1
4 read f1
5 if [ -f $f1 ]; then
6     echo Enter file 2
7     read f2
8     `cat >> $f2 $f1`
9     echo $f1 successfully copied to $f2
10 else
11     echo $f1 doesn\'t exist
12 fi
```

OUTPUT

```
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ cat f2
Hello amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ cat f1
Worldamal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell8.sh
Enter file 1
f1
Enter file 2
f2
f1 successfully copied to f2
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ cat f2
Hello Worldamal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ ls
 address     date.txt       f1      file1   hello.txt            'OS LAB Assignment 2.pdf'   school.dat    shell12.sh   shell15.sh   shell3.sh   shell6.sh   shell9.sh
 amal.dat    encrypted.txt  f2      file2   helloworld.txt        sample.txt                 shell10.sh   shell13.sh   shell1.sh    shell4.sh   shell7.sh   world.txt
 amal.txt    encypted.txt   fdat2   file3  'OS LAB Assignment 1.pdf'   school1.dat             shell11.sh   shell14.sh   shell2.sh    shell5.sh   shell8.sh
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell8.sh
Enter file 1
f2
Enter file 2
f3
f2 successfully copied to f3
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ cat f3
Hello Worldamal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$
```

PROGRAM 9

SHELL SCRIPT

```bash
1 #!/bin/bash
2
3 if [ $# != 3 ]; then
4     echo Too few arguments
5     exit
6 fi
7 `head $1 | cat > $3`
8 `head $2 | cat >> $3`
9 echo Successfully copied first 10 lines from $1 and $2 to $3
```

OUTPUT

```
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell9.sh
Too few arguments
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ cat file1
I
am
Amal
Nice
to
meet
you
Have
a
wonderful
day
Thank
you
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ cat file2
Vishnu
this
side
Thanks
to
you
as
well
See
you
later
Bye
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell9.sh file1 file2 file3
Successfully copied first 10 lines from file1 and file2 to file3
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ cat file3
I
am
Amal
Nice
to
meet
you
Have
a
wonderful
Vishnu
this
side
Thanks
to
you
as
well
See
you
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ 
```

PROGRAM 10

SHELL SCRIPT

```bash
1 #!/bin/bash
2
3 echo There are `ls -a | wc -l` files in `pwd`
4 echo
5 echo Enter the beginning character
6 read a
7 echo
8 num=`ls -a | grep -c ^$a`
9 echo There are $num files beginning with $a
10 [ $num = 0 ] && exit
11 echo
12 echo The files are :
13 echo `ls -a | grep ^$a`
```

OUTPUT

```
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ ls -a
.          date.txt      f1   file1   hello.txt       'OS LAB Assignment 2.pdf'   school.dat   shell12.sh   shell15.sh   shell3.sh   shell6.sh   shell9.sh
..         encrypted.txt  f2   file2   helloworld.txt   sample.txt                             shell10.sh   shell13.sh   shell1.sh   shell4.sh   shell7.sh   world.txt
address    encpyted.txt   f3   file3   'OS LAB Assignment 1.pdf'   school1.dat                  shell11.sh   shell14.sh   shell2.sh   shell5.sh   shell8.sh
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell10.sh
There are 35 files in /home/amal/oslab

Enter the beginning character
f

There are 6 files beginning with f

The files are :
f1 f2 f3 file1 file2 file3
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell10.sh
There are 35 files in /home/amal/oslab

Enter the beginning character
s

There are 18 files beginning with s

The files are :
sample.txt school1.dat school.dat shell10.sh shell11.sh shell12.sh shell13.sh shell14.sh shell15.sh shell1.sh shell2.sh shell3.sh shell4.sh shell5.sh shell6.sh shell7.sh shell8.sh shell9.sh
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell10.sh
There are 35 files in /home/amal/oslab

Enter the beginning character
z

There are 0 files beginning with z
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$
```

PROGRAM 11

SHELL SCRIPT

```
1 #!/bin/bash
2
3 echo Enter file
4 read f1
5
6 echo Enter new file
7 read f2
8
9 `cat < $f1 | tr 'aeiou' 'AEIOU' | cat > $f2`
10 echo Vowels of $f1 are converted to uppercase and the result is stored in $f2
```

OUTPUT

```
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ cat vowel.txt
Amal is a very good boy.
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell11.sh
Enter file
vowel.txt
Enter new file
capital.txt
Vowels of vowel.txt are converted to uppercase and the result is stored in capital.txt
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ cat capital.txt
AmAl Is A vEry gOOd bOy.
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ 
```

PROGRAM 12

SHELL SCRIPT

```
1 #!/bin/bash
2
3 echo Enter name
4 read name
5
6 name2=${name// /} #Without whitespace
7 echo No of alphabets : ${#name2}
8
9 echo Reverse : `echo $name | rev`
```

OUTPUT

```
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell12.sh
Enter name
amal
No of alphabets : 4
Reverse : lama
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell12.sh
Enter name
Amal Nath M
No of alphabets : 9
Reverse : M htaN lamA
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ ▯
```

PROGRAM 13

SHELL SCRIPT

```
1 #!/bin/bash
2
3 echo Enter a DAT file
4 read fdat1
5 echo Enter the new DAT file
6 read fdat2
7
8 echo `head -1 $fdat1 | cat > $fdat2` `grep -v NAME $fdat1 | sort -grk 3 | cat >> $fdat2`
9
10 # echo `head -1 $fdat1 | cat > $fdat2` `grep -v NAME $fdat1 | sort -t : -r -k 3 | cat >> $fdat2`
11 # If delimiter is ":"
12
13 echo $fdat1 successfully sorted based on ROLL_NO and copied to $fdat2
```

OUTPUT

```
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ cat school.dat
ROLL_NO NAME MARKS
1 Arun 45
2 Arjun 89
3 Bagath 75
4 Lakshmi 90
5 Sreeraj 64
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell13.sh
Enter a DAT file
school.dat
Enter the new DAT file
school1.dat

school.dat successfully sorted based on ROLL_NO and copied to school1.dat
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ cat school1.dat
ROLL_NO NAME MARKS
4 Lakshmi 90
2 Arjun 89
3 Bagath 75
5 Sreeraj 64
1 Arun 45
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ ▯
```

PROGRAM 14

SHELL SCRIPT

```bash
1 #!/bin/bash
2
3 read -p "Enter n = " n
4
5 #sum=0
6 #for (( i=1; i<=$n; i++ )) do
7 #    sum=`expr $sum + $i`
8 #done
9
10 if [ 0 -gt $n ]; then
11     echo Enter a non-negative integer
12     exit
13 fi
14
15 sum=`expr \( $n \* $n + $n \) / 2`
16
17 echo Sum of first $n integers = $sum
```

OUTPUT

```
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell14.sh
Enter n = 5
Sum of first 5 integers = 15
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell14.sh
Enter n = 10
Sum of first 10 integers = 55
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell14.sh
Enter n = 10212921
Sum of first 10212921 integers = 52151882782581
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell14.sh
Enter n = 0
Sum of first 0 integers = 0
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell14.sh
Enter n = -120
Enter a non-negative integer
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ 
```

PROGRAM 15

SHELL SCRIPT

```bash
1 #!/bin/bash
2
3 echo Enter your input \(1-7\)
4 read n
5
6 case $n in
7          1)
8                    echo Monday
9                    ;;
10
11         2)
12                   echo Tuesday
13                   ;;
14
15         3)
16                   echo Wednesday
17                   ;;
18
19         4)
20                   echo Thursday
21                   ;;
22
23         5)
24                   echo Friday
25                   ;;
26
27         6)
28                   echo Saturday
29                   ;;
30
31         7)
32                   echo Sunday
33                   ;;
34
35         *)
36                   echo Invalid input
37                   ;;
38 esac
```

OUTPUT

```
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell15.sh
Enter your input (1-7)
1
Monday
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell15.sh
Enter your input (1-7)
3
Wednesday
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell15.sh
Enter your input (1-7)
7
Sunday
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell15.sh
Enter your input (1-7)
0
Invalid input
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ bash shell15.sh
Enter your input (1-7)
a
Invalid input
amal@amal-TUF-Gaming-FX705DT-FX705DT:~/oslab$ 
```