Shell script program questions.

1. Write a script to show current date,time and current directory.

```
#!/bin/bash
echo "Current date is `date`"
echo "Current directory is `pwd`"
```

Output:

```
exam@cec-H110M-S2:~$ cd mca_nsa
exam@cec-H110M-S2:~/mca_nsa$ ./dtdir.sh
Current date is Wed Apr  5 11:52:41 IST 2023
Current directory is /home/exam/mca_nsa mj
exam@cec-H110M-S2:~/mca_nsa$
```

2.Write shell script to find reverse of a number.

```
#!/bin/bash
echo enter the no:
read n
num=0
while [ $n -gt 0 ]
do
num=$(expr $num \* 10)
k=$(expr $n % 10)
num=$(expr $num + $k)
n=$(expr $n / 10)
done
echo Reversed number is $num
```

Output:

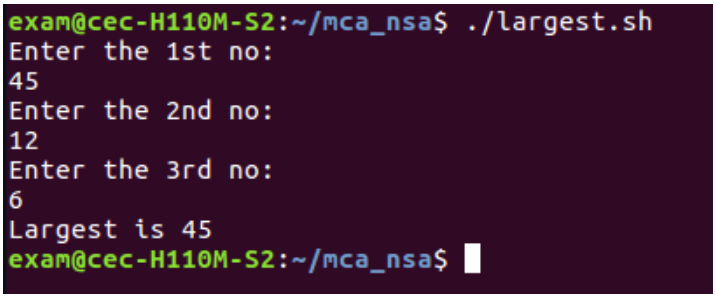
```
exam@cec-H110M-S2:~/mca_nsa$ ./reverse.sh
enter the no:
458
Reversed number is 854
exam@cec-H110M-S2:~/mca_nsa$
```

3. Write a script to find largest among three numbers.

```
#!/bin/bash
echo Enter the 1st no:
```

```
read m
echo Enter the 2nd no:
read n
echo Enter the 3rd no:
read o
if [ $m -gt $n ] && [ $m -gt $o ]
then
echo Largest is $m
elif [ $n -gt $m ] && [ $n -gt $o ]
then
echo Largest is $n
else
echo Largest is $o
fi
```

Output:

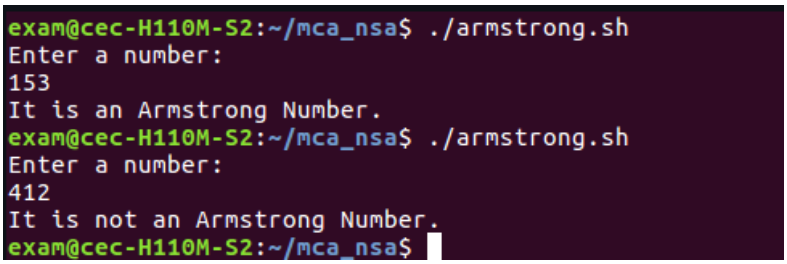


4. Write a script to check whether a number is armstrong or not.

```
#!/bin/bash
echo "Enter a number: "
read c
x=$c
sum=0
r=0
n=0
while [ $x -gt 0 ]
do
r=`expr $x % 10`
```

```
n=`expr $r \* $r \* $r`
sum=`expr $sum + $n`
x=`expr $x / 10`
done
if [ $sum -eq $c ]
then
echo "It is an Armstrong Number."
else
echo "It is not an Armstrong Number."
fi
```

Output:



5. Write a script to check password and login.

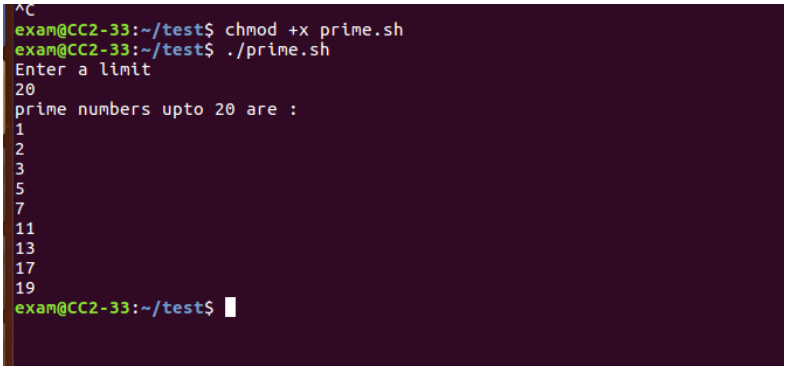
```
# !/bin/bash
read -p 'Username: ' user
read -sp 'Password: ' pass
if (( $user == "Admin" && $pass == "admin123" ))
then
        echo -e "\nWelcome! You are Sucessfull login\n"
else
        echo -e "\nUnsuccessful login\n"
fi
```

Output:

6. Write a script to count the prime numbers in specific range

```
#!/bin/bash
echo "Enter a  lower limit"
read i
echo "Enter a  upper limit"
read limit
echo "prime numbers upto $limit are :"
while [ $i -le $limit ]
do
   flag=1
   j=2
   while [ $j -lt $i ]
   do
       rem=$(( $i % $j ))
      if [ $rem -eq 0 ]
      then
        flag=0
        break
      fi
   j=$(( $j+1 ))
   done
   if [ $flag -eq 1 ]
   then
     echo "$i"
   fi
i=$(( $i+1 ))
done
```

Output:

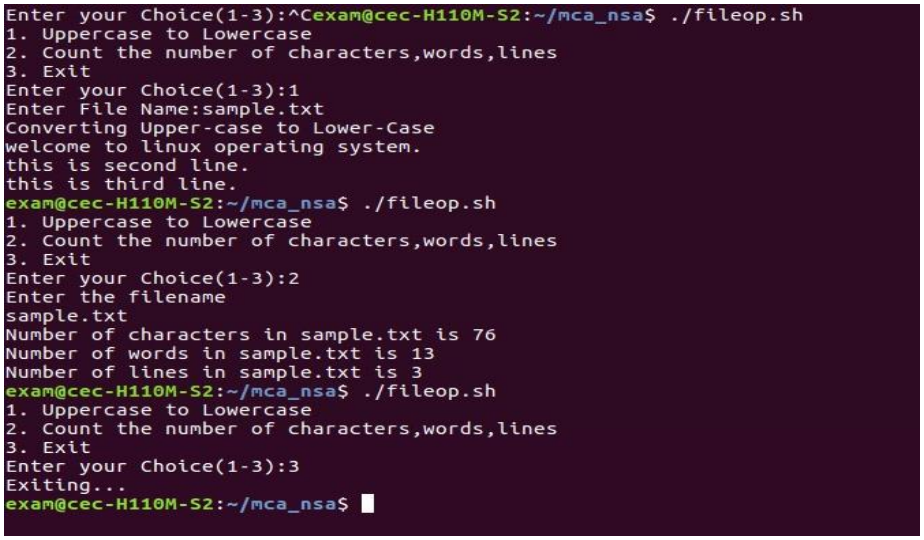


7. Write a script to convert the contents of agiven file from uppercase to lowercase and also count the number of lines,words and characters of the resultant file. Also display the resultant file in descending order.

```
#!/bin/bash
getFile()
{
   # Reading txtFileName to convert it's content
   echo -n "Enter File Name:"
   read filename
   # Checking if file exist
   if [ ! -f $filename ]; then
      echo "File Name $filename does not exists."
      exit 1
   fi
}
 echo "1. Uppercase to Lowercase "
 echo "2. Count the number of characters,words,lines"
 echo "3. Exit "
 echo -n "Enter your Choice(1-3):"
 read ch

 case "$ch" in
   1)
```

```
    # Function Call to get File
    getFile
    # Converting to lower case if user choose 1
    echo "Converting Upper-case to Lower-Case "
    tr '[A-Z]' '[a-z]' <$filename
  ;;

 2)
  echo Enter the filename
  read file
  c=`cat $file | wc -c`
  w=`cat $file | wc -w`
  l=`grep -c "." $file`
  echo Number of characters in $file is $c
  echo Number of words in $file is $w
  echo Number of lines in $file is $l
  ;;

  *) # exiting for all other cases
     echo "Exiting..."
     exit
  ;;
esac
```

Output:



8. Write a script to perform following basic math operation as:

Addition, subtraction, multiplication, division

```
#!/bin/sh
echo "Enter the two numbers to perform arithmetic operations "
read a b

val=`expr $a + $b`
echo "a + b : $val"

val=`expr $a - $b`
echo "a - b : $val"

val=`expr $a \* $b`
echo "a * b : $val"

if [ $a -gt $b ]
then
        val=`expr $a / $b`
        echo "a / b : $val"
else
```

```
        val=`expr $b / $a`
        echo "b / a : $val"

fi
```

Output:

```
exam@cec-H110M-S2:~/mca_nsa$ ./arithmetic.sh
Enter the two numbers to perform arithmetic operations
20 10
a + b : 30
a - b : 10
a * b : 200
a / b : 2
exam@cec-H110M-S2:~/mca_nsa$
```

9. Read 3 marks of a student and find the average. Display the grade of the student based on the average. (if..then..elif..fi)

S >= 90%

A < 90%, but >= 80%

B < 80%, but >= 60%

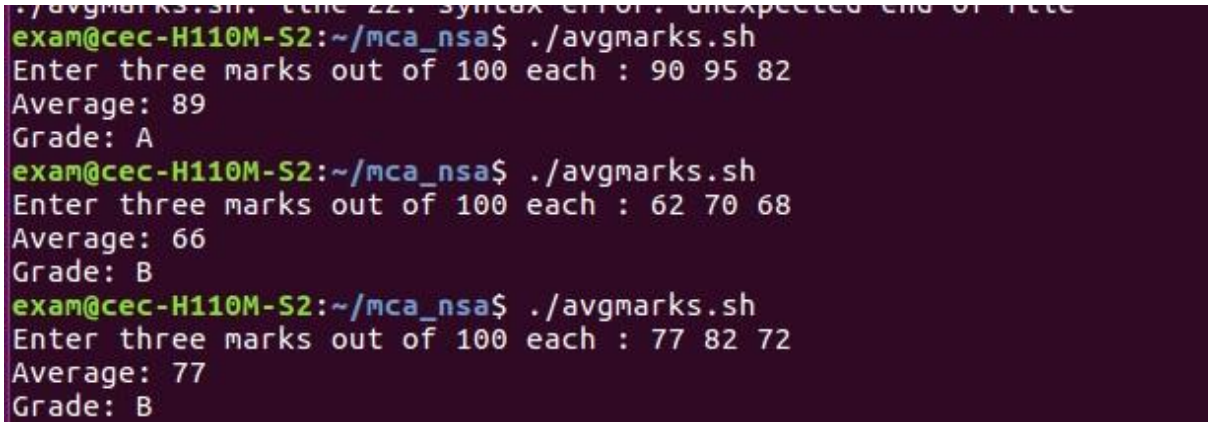
P < 80%, but >= 40%

F < 40%

```
#! /bin/bash
read -p "Enter three marks out of 100 each : " m1 m2 m3
s=$(($m1+$m2+$m3))
avg=$(($s / 3|bc))
echo -e "Average: $avg"

if [ $avg -ge 90 ]
then
        echo "Grade: S"
elif [[ $avg -lt 90  &&  $avg -ge 80  ]]
then
        echo "Grade: A"
elif [[ $avg -lt 80  &&  $avg -ge 60  ]]
```

```
then
        echo "Grade: B"
elif [[ $avg -lt 80  &&  $avg -ge 40  ]]
then
        echo "Grade: P"
else
        echo "Grade: F"
fi
```

Output:



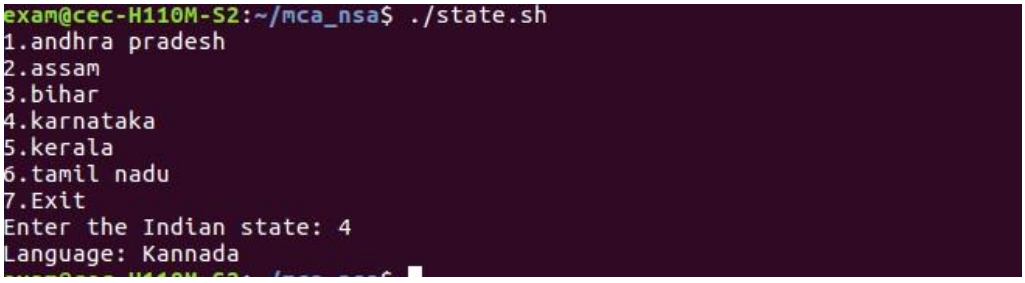
10. Read the name of an Indian state and display the main language according to the table. For other states, the output may be “Unknown”. Use “|” to separate states with same language *(case..esac)*

State	Main Language
Andhra Pradesh	Telugu
Assam	Assamese
Bihar	Hindi
Himachal Pradesh	Hindi
Karnataka	Kannada
Kerala	Malayalam
Lakshadweep	Malayalam
Tamil Nadu	Tamil

```
#!/bin/bash
echo -e "1.andhra pradesh \n2.assam \n3.bihar \n4.karnataka \n5.kerala \n6.tamil nadu \n7.Exit"
read -p "Enter the Indian state: " state
#state=$(echo $state | tr '[:upper:]' '[:lower:]')
```

```
case $state in
        1)
                echo "Language: Telugu"
                ;;
        2)
                echo "Language: Assamese"
                ;;
        3)
                echo "Language: Hindi"
                ;;
        4)
                echo "Language: Kannada"
                ;;
        5)
                echo "Language: Malayalam"
                ;;
        6)
                echo "Language: Tamil"
                ;;
        *)
                echo "Language: Unknown";;
esac
```

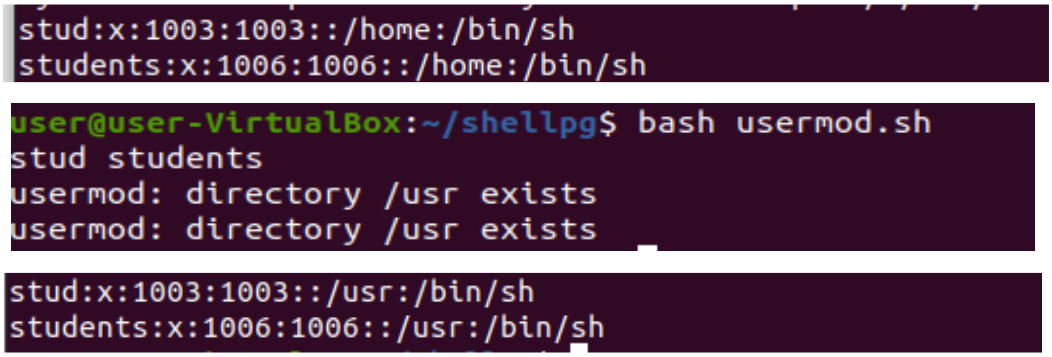
Output:



11.Change the home folder of all users whose name start with stud from /home/username to /usr/username. Also change the password of username to username123 (e.g., /home/stud25 changes to /usr/stud25 and his/her password changes to stud25123) - (Use for .. in)

```
#! /bin/bash
result=$(grep stud* /etc/passwd)
result=$(echo "${result}"| cut -d: -f 1)
echo $result
for f in $result
do
        p="${f}123"
        sudo usermod -p $(echo $p | openssl passwd -1 -stdin) $f
        sudo usermod -m -d /usr $f
done
```

Output:

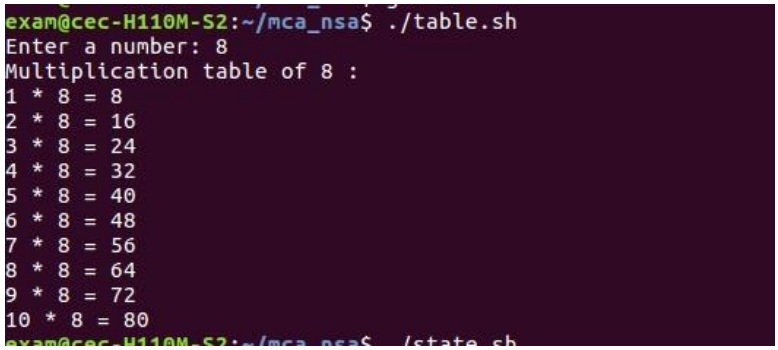


12. Read a number and display the multiplication table of the number up to 10 lines. - (Use for((..)))

```
#! /bin/bash
read -p "Enter a number: " num
echo "Multiplication table of $num : "
for (( i=1; i<=10; i++))
do
        val=$(( num * i ))
```

```
    echo "$i * $num = $val"
done
```

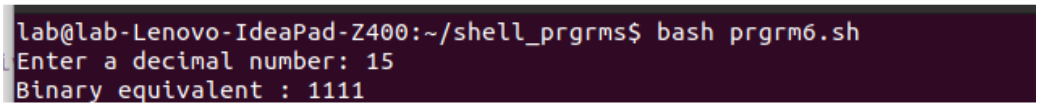
Output:



13. Read a Decimal number. Convert it to Binary and display the result. - (Use while)

```
#! /bin/bash
read -p "Enter a decimal number: " n
val=0
power=1
while [ $n -ne 0 ]
do
    r=`expr $n % 2`
    val=`expr $r \* $power + $val`
    power=`expr $power \* 10`
    n=`expr $n \/ 2`
done
echo "Binary equivalent : $val"
```

Output:



Result:

Shell script program has done successfully and output is verified.