

EXPERIMENT NO:6

DATE:


SHELL SCRIPT PROGRAM QUESTIONS

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

SOURCE CODE:

```
#!/bin/bash
echo "Hello,$LOGNAME"
echo "Current date is `date`"
echo "User is `whoami`"
echo "current directory `pwd`"
```

OUTPUT:




```
mca@csc2d58: ~
mca@csc2d58:~$ ./date.sh
Hello, mca
Current date is Wed Apr  5 09:39:29 IST 2023
User is
Current directory /home/mca
mca@csc2d58:~$
```

2. Write a script to reverse of a number.

SOURCE CODE:

```
#!/bin/bash
read -p "Enter a number: " number
temp=$number
while [ $temp -ne 0 ]
do
    reverse=$((reverse*10+temp%10))
    temp=$((temp/10))
done
echo "Reverse of $number is $reverse"
```

OUTPUT:




```
mca@csc2d58: ~
mca@csc2d58:~$ ./reverse.sh
Enter a number: 345
Reverse of 345 is 543
mca@csc2d58:~$
```

3. Write a script to largest among three numbers.

SOURCE CODE:

```
#!/bin/bash
echo "Enter 1st number:"
read first_num
echo "Enter 2nd number:"
read second_num
echo "Enter 3rd number:"
read third_num
if test $first_num -gt $second_num && test $first_num -gt $third_num
then
    echo $first_num is the greatest number.
elif test $second_num -gt $third_num
then
    echo $second_num is the greaatest number.
else
    echo $third_num is the greatest number.
fi
```

OUTPUT:



```
mca@csc2d58: ~
mca@csc2d58:~$ echo $BASH
/bin/bash
mca@csc2d58:~$ ./Armstrong.sh
Enter a number:
531
It is not an Armstrong Number.
mca@csc2d58:~$ ./Armstrong.sh
Enter a number:
1
It is an Armstrong Number.
mca@csc2d58:~$
```


4. Write a script check whether the number is Armstrong or not.

SOURCE CODE:

```
#!/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:




```
mca@csc2d58: ~
mca@csc2d58:~$ echo $BASH
/bin/bash
mca@csc2d58:~$ ./Armstrong.sh
Enter a number:
531
It is not an Armstrong Number.
mca@csc2d58:~$ ./Armstrong.sh
Enter a number:
1
It is an Armstrong Number.
mca@csc2d58:~$
```

5. Write a script to check password and login

SOURCE CODE:

```
#!/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:



```
mca@csc2d60:~$ ./login.sh
Username: mca
Password:
Welcome! You are Sucessfull login
mca@csc2d60:~$
```

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

SOURCE CODE:

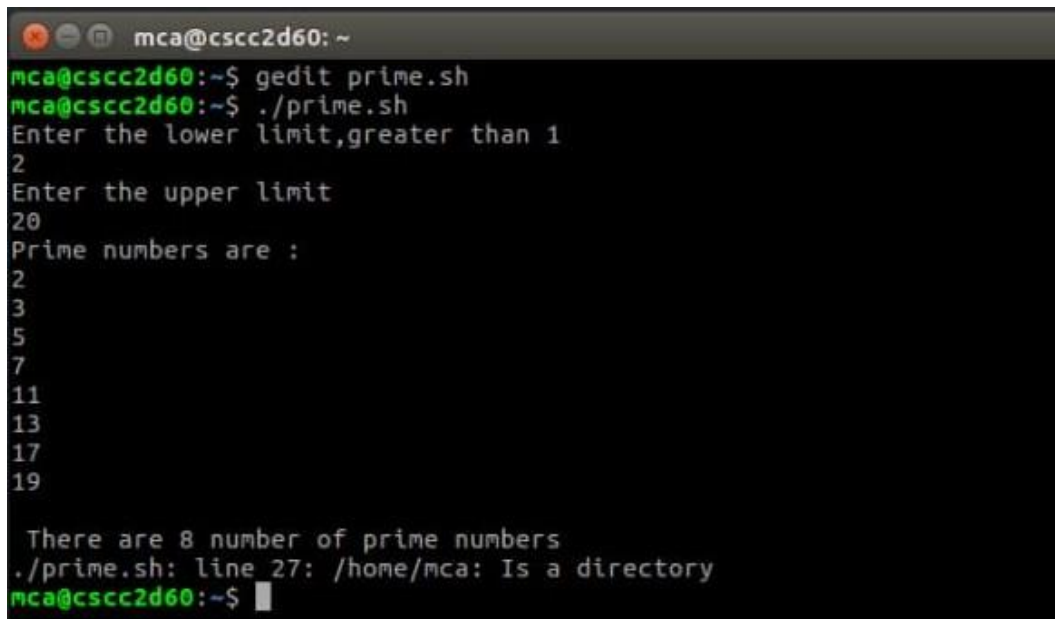
```
#!/bin/bash
low=1
count=0
while [ $low -eq 1 ]
do
echo "Enter the lower limit,greater than 1"
```

```

read low
done
echo "Enter the upper limit"
read upper
echo "Prime numbers are : "
for mun in `seq $low $upper`
do
ret=$(factor $mun | grep $mun | cut -d ":" -f 2 | cut -d " " -f 2)
if [ "$ret" -eq "$mun" ]
then
echo "$mun"
((count++))
fi
done
echo -e "\n There are $count number of prime numbers"

```

OUTPUT:



```

mca@csc2d60: ~
mca@csc2d60:~$ gedit prime.sh
mca@csc2d60:~$ ./prime.sh
Enter the lower limit,greater than 1
2
Enter the upper limit
20
Prime numbers are :
2
3
5
7
11
13
17
19

There are 8 number of prime numbers
./prime.sh: line 27: /home/mca: Is a directory
mca@csc2d60:~$

```

7. Write a script to convert the contents of a given 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.

SOURCE CODE:

```

#!/bin/bash
getfile()
{
echo "enter the filename"
read filename
if [ ! -f $filename ]; then
echo "File Name $filename does not exists."

```

```

        exit 1
    fi
}
clear
getfile
echo "Converting Upper-case to Lower-Case "
tr '[A-Z]' '[a-z]' <$filename
echo "the number of lines is:"
wc -l <$filename
echo "the number of words are:"
wc -w <$filename
echo "the number of characters are:"
wc -c <$filename
echo "the content in descending order:"
sort -r <$filename

```

OUTPUT:



```

enter the filename
filename
Converting Upper-case to Lower-Case
hello
how are you
what are you
the number of lines is:
3
the number of words are:
7
the number of characters are:
31
the content in descending order:
WHAT ARE YOU
HOW ARE YOU
HELLO
mca@csc2d61: $ _

```

- Write a script to perform following basic math operation as: Addition, subtraction, multiplication, division

SOURCE CODE:

```

echo "Enter a number : "
read x
echo "Enter another number : "
read y
echo "ADDITION"
echo $(( $x + $y ))
echo "SUBTRACTION"
echo $(( $x - $y ))
echo "MULTIPLICATION"
echo $(( $x * $y ))
echo "DIVISION"
echo $(( $x / $y ))

```

OUTPUT:

```
nca@csc2d61: $ ./math.sh
enter the two numbers:
9
3
addition:
12
difference:
6
division:
3
product :
27
nca@csc2d61: $ _
```

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%
```

SOURCE CODE:

```
#!/bin/bash
echo "Enter the first mark: "
read mark1
echo "Enter the second mark: "
read mark2
echo "Enter the third mark: "
read mark3
average=$((($mark1 + $mark2 + $mark3) / 3))
if [ $average -ge 90 ]; then
    echo "Grade: S"
elif [ $average -ge 80 ]; then
    echo "Grade: A"
elif [ $average -ge 60 ]; then
    echo "Grade: B"
elif [ $average -ge 40 ]; then
    echo "Grade: P"
else
    echo "Grade:F"
fi
```

OUTPUT:

```
nca@ubuntu01:~$ chmod +x mark.sh
nca@ubuntu01:~$ ./mark.sh
Enter the first mark:
45
Enter the second mark:
46
Enter the third mark:
78
Grade: P
nca@ubuntu01:~$ █
```

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

SOURCE CODE:

```
#!/bin/bash
read -p "Enter the name of an Indian state: " state
case $state in
    "Andhra Pradesh")
        echo "Main Language: Telugu"
        ;;
    "Assam")
        echo "Main Language: Assamese"
        ;;
    "Bihar")
        echo "Main Language: Hindi"
        ;;
    "Himachal Pradesh")
        echo "Main Language: Hindi"
        ;;
    "Karnataka")
        echo "Main Language: Kannada"
        ;;
    "Kerala")
        echo "Main Language: Malayalam"
        ;;
    "Lakshadweep")
        echo "Main Language: Malayalam"
        ;;
    *)
        echo "Unknown"
        ;;
esac
```

```

    "Tamil Nadu")
        echo "Main Language: Tamil"
        ;;
    *)
        echo "Unknown"
        ;;
esac

```

OUTPUT:

```

mca@ubuntu01:~$ ./state.sh
Enter the name of an Indian state: Kerala
Main Language: Malayalam
mca@ubuntu01:~$ 

```

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)

SOURCE CODE:

```

#!/bin/bash
for username in /home/stud*;
do
    if [ -d "$username" ]; then
        new_home="/usr${username#/home}"
        new_password="${username#/home/stud}"
        new_password="${new_password}123"

        usermod -d "$new_home" "$username"
        echo "$username:$new_password" | chpasswd
        echo "Changed home folder and password for $username"
    fi
done

```

OUTPUT:

```

Changed home folder and password for /home/stud25
Changed home folder and password for /home/stud42
Changed home folder and password for /home/stud99
mca@ubuntu01:~$ 

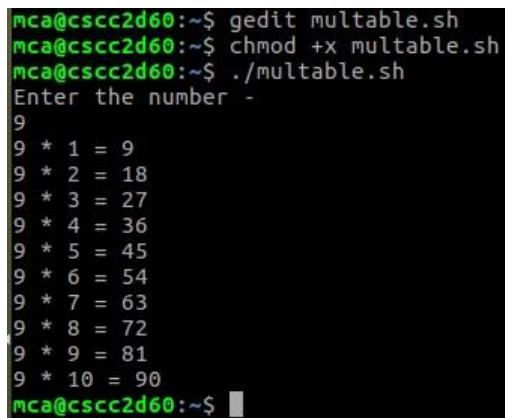
```


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

SOURCE CODE:

```
#!/bin/bash
echo "Enter the number -"
read n
i=1
while [ $i -le 10 ]
do
res=`expr $i \* $n`
echo "$n * $i = $res"
((++i))
done
```

OUTPUT:

A terminal window with a black background and green text. The prompt is 'mca@csc2d60:~\$'. The user enters 'gedit multable.sh', then 'chmod +x multable.sh', and finally './multable.sh'. The script prompts 'Enter the number -' and the user enters '9'. The script then displays the multiplication table for 9, from 9 * 1 = 9 to 9 * 10 = 90. The prompt returns to 'mca@csc2d60:~\$' with a cursor.

```
mca@csc2d60:~$ gedit multable.sh
mca@csc2d60:~$ chmod +x multable.sh
mca@csc2d60:~$ ./multable.sh
Enter the number -
9
9 * 1 = 9
9 * 2 = 18
9 * 3 = 27
9 * 4 = 36
9 * 5 = 45
9 * 6 = 54
9 * 7 = 63
9 * 8 = 72
9 * 9 = 81
9 * 10 = 90
mca@csc2d60:~$
```

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

SOURCE CODE:

```
echo "enter a number : "
read n
c=$(echo "obase=2;$n" | bc)
echo binary $c
```

OUTPUT:

A terminal window with a black background and green text. The prompt is 'mca@csc2d60:~\$'. The user enters 'gedit DeciToBin.sh', then './DeciToBin.sh'. The script prompts 'enter a number :' and the user enters '12'. The script then displays 'binary 1100'. The prompt returns to 'mca@csc2d60:~\$' with a cursor.

```
mca@csc2d60:~$ gedit DeciToBin.sh
mca@csc2d60:~$ ./DeciToBin.sh
enter a number :
12
binary 1100
mca@csc2d60:~$
```