INSTITUTE OF ENGINEERING & MANAGEMENT
DEPARTMENT OF COMPUTER SCIENCE
OPERATING SYSTEM LAB CS693

DATE :- 27.02.2019

1. Write a shell program to calculate the factorial of a number.

Source Code : -

```
echo "Enter Number : "
read x
temp=1
if [ $x -eq 0 ]
then
    echo "Factorial is : 1";
else
    for var in `seq 1 $x`
    do
      temp=`expr $var \* $temp`
    done
    echo "Factorial is : $temp"
fi
```

Sample Output :-

```
root@Swapnil:~/Downloads# sh OS_04_01.sh
Enter Number :
6
Factorial is : 720
root@Swapnil:~/Downloads#
```

2. Write a shell menu driven program to do the following:

a. Display the current working directory.
b. Check whether an input number is even or odd.
c. Display the number of counts of all the files in the directory.
d. Print the long listing of all the files.

Source Code :-

```
op=0
while [ $op != 5 ]:
do
  echo "01. Display Current Working Directory"
  echo "02. Check number is odd or even"
  echo "03. Display No of files in the directory"
  echo "04. Long Listing of all Files"
  echo "05. Exit"
  read op
  case $op in
      1)
       var=$(pwd)
```

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```
    echo $var
    ;;
  2)
    read x
    if [ $(( $x % 2 )) -eq 0 ]
    then
       echo "$x is Even"
    else
       echo "$x is Odd"
    fi
    ;;
  3)
    v=$(ls | wc -l)
    echo "$v"
    ;;
  4)
    va=$(ls -la)
    echo $va
    ;;
  esac
done
```

Sample Output :-

```
root@Swapnil:~/Downloads# sh OS_04_02.sh
01. Display Current Working Directory
02. Check number is odd or even
03. Display No of files in the directory
04. Long Listing of all Files
05. Exit
1
/root/Downloads
01. Display Current Working Directory
02. Check number is odd or even
03. Display No of files in the directory
04. Long Listing of all Files
05. Exit
2
5
5 is Odd
01. Display Current Working Directory
02. Check number is odd or even
03. Display No of files in the directory
04. Long Listing of all Files
05. Exit
3
39
```

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3. Write a shell program to display all the prime numbers between 1 to 100 using while loop.

Source Code :-

```
temp=1
for var in `seq 2 100`
do
  flag=1
  les=`expr $var - 1`
  for val in `seq 2 $les`
  do
    if [ $(($var % $val)) -eq 0 ]
    then
        flag=0
    fi
  done
  if [ $flag -eq 1 ]
  then
      echo $var
  fi
done
```

Sample Output :-

```
root@Swapnil:~/Downloads# sh OS_04_03.sh
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97 root@Swap
nil:~/Downloads#
```

4. Write a menu program to find out whether a given letter is vowel or not.

Source Code :-

```
echo -n "Enter a alphabet : "
read x
case $x in
a) echo "It is a vowel" ;;
e) echo "It is a vowel" ;;
i) echo "It is a vowel" ;;
o) echo "It is a vowel" ;;
u) echo "It is a vowel" ;;
*) echo "It is a consonant" ;;
esac
```

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Sample Output :-

```
root@Swapnil:~/Downloads# sh OS_04_04.sh
Enter a alphabet : a
It is a vowel
root@Swapnil:~/Downloads# sh OS_04_04.sh
Enter a alphabet : b
It is a consonant
root@Swapnil:~/Downloads#
```

5. Write a shell script which will generate the output as follows:

```
*
* *
* * *
* * * *
```

Source Code :-

```
echo "Enter a Number : "
read n
for i in `seq 1 $n`
do
   for var in `seq 1 $i`
   do
      echo -n "* "
   done
   echo ""
done
```

Sample Output :-

```
root@Swapnil:~/Downloads# sh OS_04_05.sh
Enter a Number :
5
*
* *
* * *
* * * *
* * * * *
```