SHELL PROGRAMMING LAB

ASSIGNMENT -8

SUBMITTED BY:

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EXPERIMENT – 10
TITLE: Shell Scripts implementing Looping Structure
Activities:

1. Write a shell that demonstrates the use of logical operators in shell programming.

```
#!/bin/bash

#reading data from the user
read -p 'Enter a : ' a
read -p 'Enter b : ' b

echo "AND"
if [ $a -gt 10 ] & [ $b -gt 20  ]
then
 echo Both are true.
else
 echo Both are not true.
fi

echo "OR"
if [ $a -gt 10 ] || [ $b -gt 20  ]
then
 echo Atleast one of them is true.
else
 echo None of them is true.
fi

```

```
root@Ayush500086400:~/Desktop/lab8# bash ./1.sh
Enter a : 12
Enter b : 15
AND
Both are not true.
OR
Atleast one of them is true.
root@Ayush500086400:~/Desktop/lab8# bash ./1.sh
Enter a : 20
Enter b : 21
AND
Both are true.
OR
Atleast one of them is true.
root@Ayush500086400:~/Desktop/lab8#
```

2. Write an algorithm and appropriate shell script to compute the factorial of a number entered by the user.

```
#! /bin/sh
echo "Enter a number"
read num

fact=1

while [ $num -gt 1 ]
do
  fact=$((fact * num))  #fact = fact * num
  num=$((num - 1))      #num = num - 1
done

echo $fact
```

```
root@Ayush500086400:~/Desktop/lab8# ./2.sh
Enter a number
3
6
root@Ayush500086400:~/Desktop/lab8# ./2.sh
Enter a number
4
24
root@Ayush500086400:~/Desktop/lab8#
```

3. Generate the Fibonacci series for an integer entered by the user.

```
#! /bin/sh
read -p "Enter the number : " base
N=`expr $base`
a=0
b=1

echo "The Fibonacci series is : "

for (( i=0; i<N; i++ ))
do
 echo -n "$a "
 fn=$((a + b))
 a=$b
 b=$fn
done
```

```
root@Ayush500086400:~/Desktop/lab8# bash ./3.sh
Enter the number : 5
The Fibonacci series is :
0 1 1 2 3 EXIT
root@Ayush500086400:~/Desktop/lab8#
```

4. Draw Pascal's Triangle.

```
#! /bin/sh
rows=5
for((i=1; i<=rows; i++))
do
  for((j=1; j<=5-i; j++))
  do
    echo -n " "
  done
  for((j=i; j>=2; j--))
  do
    echo -n "$j"
  done
  for((j=1; j<=i; j++))
  do
    echo -n "$j"
  done
  echo
done
```

```
root@Ayush500086400:~/Desktop/lab8# bash ./4.sh
    1
   212
  32123
 4321234
543212345
root@Ayush500086400:~/Desktop/lab8#
```