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Batch: A3

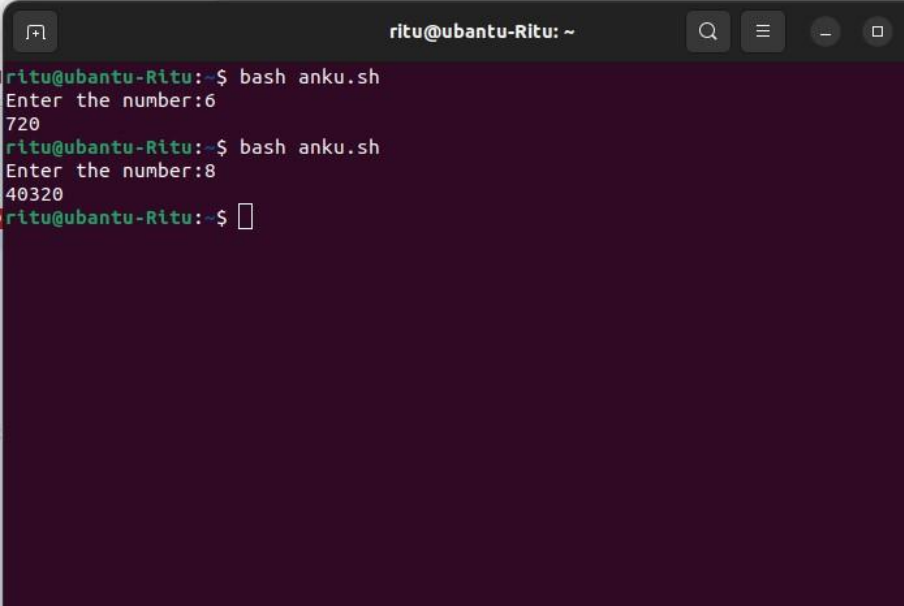
Q1. *a) Shell script to print Fibonacci series*

```
echo "How many number of terms to be generated ?"
read n
function fibonacci
{
    x=0
    y=1
    i=2
    echo "Fibonacci Series up to $n terms :"
    echo "$x"
    echo "$y"
    # -lt stands for equal to
    while [ $i -lt $n ]
    do
        i=`expr $i + 1 `
        z=`expr $x + $y `
        echo "$z"
        x=$y
        y=$z
    done
}
r=`fibonacci $n`
echo "$r"
```

```
ritu@ubuntu-Ritu:~$ bash ank.sh
How many number of terms to be generated ?
7
Fibonacci Series up to 7 terms :
0
1
1
2
3
5
8
ritu@ubuntu-Ritu:~$
```

b) Shell script to find the factorial of a number using recursion

```
1 #!/bin/bash
2 #Recursive factorial function
3 factorial()
4 {
5     local=$1
6     if((local<=2)); then
7         echo $local
8     else
9         f=$((local -1))
10        #Recursive call
11        f=$(factorial $f)
12        f=$((f*local))
13        echo $f
14    fi
15 }
16 #main script
17 read -p "Enter the number:" n
18 if((n==0)); then
19     echo 1
20 else
21     #calling factorial function
22     factorial $n
23 fi
24
25
```



A terminal window titled "ritu@ubuntu-Ritu: ~" with standard Ubuntu window controls. The user runs "bash anku.sh". The script prompts "Enter the number:" and the user enters "6". The script outputs "720". The user runs "bash anku.sh" again, enters "8", and the script outputs "40320". The prompt "ritu@ubuntu-Ritu:~\$" is shown at the end of the second run.

```
ritu@ubuntu-Ritu:~$ bash anku.sh
Enter the number:6
720
ritu@ubuntu-Ritu:~$ bash anku.sh
Enter the number:8
40320
ritu@ubuntu-Ritu:~$
```