

Shell programs

Problem 1: Write a shell program to compute the GCD of two given positive integers.

Program:

```
echo "Enter two positive integer: "  
read a  
read b  
r=`echo $b%$a|bc`  
while [ $r -ne 0 ]  
do  
    b=$a  
    a=$r  
    r=`echo $b%$a|bc`  
done  
echo "GCD=$a"
```

Output:

```
[sumit@localhost ~]$ sh gcd.sh  
Enter two positive integer:  
25  
55  
GCD=5  
[sumit@localhost ~]$ sh gcd.sh  
Enter two positive integer:  
101  
21  
GCD=1  
[sumit@localhost ~]$
```

Problem 2: Write a shell program to compute the sum of the series

$s = 1 + x + x^2 + x^3 + \dots + x^n$

Program:

```
echo "Enter the values of x and n: "  
read x  
read n  
s=1  
k=1  
t=1  
while [ $k -le $n ]  
do  
    t=`echo $t*$x|bc`  
    s=`echo $s+$t|bc`  
    k=`echo $k+1|bc`  
done  
echo "Sum = $s "
```

Output:

```
[sumit@localhost ~]$ sh sum1.sh  
Enter the values of x and n:  
1  
2  
Sum = 3  
[sumit@localhost ~]$ sh sum1.sh  
Enter the values of x and n:  
2  
3  
Sum = 15  
[sumit@localhost ~]$
```