```c
#include <stdio.h>

int recursive(int a, int b)
{
    if (b == 0)
    return a;
    int p=a/b;
    int q=a-p*b;
    return recursive(b,q);
}
int main()
{
    int a,b;
    printf("Enter the two Positive numbers : \n");
    scanf("%d %d",&a,&b);
    printf("Gcd of the two numbers is : %d\n",recursive(a,b));
    return 0;
}
```

C:\WINDOWS\SYSTEM32\cmd.exe

```
Enter the two Positive numbers :
12 9
Gcd of the two numbers is : 3


------------------
(program exited with code: 0)

Press any key to continue . . .
```

```c
#include <stdio.h>

void towers(int,char,char,char);
int main()
{
  int num;
  printf("Enter the number of disks : ");
  scanf("%d",&num);
  towers(num,'S','T','D');
  return 0;
}


void towers(int num,char src,char temp,char dest)
{
  if(num==1)
  {
   printf("Move disk 1 from %c to %c\n",src,dest);
   return;
  }
  towers(num-1,src,dest,temp);
  printf("Move disk %d from %c to %c\n",num,src,dest);
  towers(num-1,temp,src,dest);
}
```

```
Enter the number of disks : 5
Move disk 1 from S to D
Move disk 2 from S to T
Move disk 1 from D to T
Move disk 3 from S to D
Move disk 1 from T to S
Move disk 2 from T to D
Move disk 1 from S to D
Move disk 4 from S to T
Move disk 1 from D to T
Move disk 2 from D to S
Move disk 1 from T to S
Move disk 3 from D to T
Move disk 1 from S to D
Move disk 2 from S to T
Move disk 1 from D to T
Move disk 5 from S to D
Move disk 1 from T to S
Move disk 2 from T to D
Move disk 1 from S to D
Move disk 3 from T to S
Move disk 1 from D to T
Move disk 2 from D to S
Move disk 1 from T to S
Move disk 4 from T to D
Move disk 1 from S to D
Move disk 2 from S to T
Move disk 1 from D to T
Move disk 3 from S to D
Move disk 1 from T to S
Move disk 2 from T to D
Move disk 1 from S to D


------------------
(program exited with code: 0)

Press any key to continue . . . _
```

```c
1    #include <stdio.h>
2    #include <math.h>
3    int main()
4    {
5      int num;
6      int result;
7
8      printf("Enter the number of disks : ");
9      scanf("%d",&num);
10     result=pow(2,num)-1;
11     printf("The No: of recursive calls are :%d",result);
12     return 0;
13   }
14
15
16   void towers(int num,char src,char temp,char dest)
17   {
18     if(num==1)
19     {
20       printf("The No: of Recursive calls are 1");
21       return;
22     }
23     towers(num-1,src,dest,temp);
24     printf("Move disk %d from %c to %c\n",num,src,dest);
25     towers(num-1,temp,src,dest);
26   }
27
28
```

```
C:\WINDOWS\SYSTEM32\cmd.exe

Enter the number of disks : 5
The No: of recursive calls are :31

------------------
(program exited with code: 0)

Press any key to continue . . . _
```