In [1]:
```
#WRITE A PROGRAM TO FIND THE FACTORIAL OF A NUMBER
def factorial(n):
    return 1 if (n==1 or n==0) else n * factorial(n - 1);
num = 5;
print("Factorial of",num,"is",
factorial(num))
```

```
Factorial of 5 is 120
```

In [2]:
```
#WRITE A PROGRAM TO PRINT THE FABONACCI SERIES USING RECURSION
def recur_fibo(n):
   if n <= 1:
       return n
   else:
       return(recur_fibo(n-1) + recur_fibo(n-2))

nterms = int(input("How many terms? "))

if nterms <= 0:
   print("Plese enter a positive integer")
else:
   print("Fibonacci sequence:")
   for i in range(nterms):
       print(recur_fibo(i))
```

```
How many terms? 5
Fibonacci sequence:
0
1
1
2
3
```

In [8]:
```
#WRITE A PROGRAM TO FIND THE GCD OF TWO NUMBER USING RECURSION
def gcd(a,b):
    if(b==0):
        return a
    else:
        return gcd(b,a%b)
a=int(input("Enter first number:"))
b=int(input("Enter second number:"))
GCD = gcd(a,b)
print("GCD is: ")
print(GCD)
```

```
Enter first number:5
Enter second number:15
GCD is:
5
```

In [9]:
```
#WRITE A PROGRAM TO FIND THE POWER OF TWO NUMBERS USING RECURSION
def power(n, e):
    if e == 0:
        return 1
    elif e == 1:
        return n
    else:
        return (n*power(n, e-1))
n = 4
p = 2
print(power(n, p))
```

```
16
```

In [10]:
```
#WRITE A PROGRAM TO CHECK A NUMBER IS PRIME OR NOT USING RECURSION
def check(n, div = None):
    if div is None:
        div = n - 1
    while div >= 2:
        if n % div == 0:
            print("Number not prime")
            return False
        else:
            return check(n, div-1)
    else:
        print("Number is prime")
        return 'True'
n=int(input("Enter number: "))
check(n)
```

```
Enter number: 54
Number not prime
```

Out[10]:
```
False
```

In [12]:
```
#WRITE A PROGRAM TO FIND THE SUM OF N NATURAL NUMBERS
def rsum(n):
    if n <= 1:
        return n
    else:
        return n + rsum(n-1)

num = int(input("Enter a number: "))
ttl=rsum(num)
print("The sum is",ttl)
```

```
Enter a number: 10
The sum is 55
```