1. Write a Python Program to Display Fibonacci Sequence Using Recursion?

**Ans**:

In [11]:
```
n = int(input('Enter number of terms '))
def Fib(n):
    if n <= 1:
        return n
    else:
        return(Fib(n-1) + Fib(n-2))
print("Fibonacci sequence: ")
for i in range(n):
    print(Fib(i))
```

```
Enter number of terms 10
Fibonacci sequence:
0
1
1
2
3
5
8
13
21
34
```

2. Write a Python Program to Find Factorial of Number Using Recursion?

**Ans**:

In [12]:
```
n = int(input('Enter a number '))
def fact(n):
    if n == 1:
        return 1
    else:
        return (n * fact(n-1))
print("The factorial of ", n, " is", fact(n))
```

```
Enter a number 4
The factorial of  4  is 24
```

3. Write a Python Program to calculate your Body Mass Index?

**Ans**:

In [13]:
```
mass = float(input('Enter your mass in kg: '))
height = float(input('Enter your height in m: '))
def BMI(m,h):
    BMI = m/(pow(h,2))
    print('Your BMI is: ', BMI)
BMI(mass,height)
```

```
Enter your mass in kg: 52
Enter your height in m: 1.62
Your BMI is:  19.81405273586343
```

4. Write a Python Program to calculate the natural logarithm of any number?

**Ans**:

In [15]:
```
import numpy as np
n = int(input('Enter a number: '))
print('Natural logarithm of ', n, ' is ', np.log(n))
```

```
Enter a number: 1517
Natural logarithm of  1517  is  7.324489979348532
```

5. Write a Python Program for cube sum of first n natural numbers?

**Ans**:

In [21]:
```
n = int(input('Enter number of natural numbers: '))
def sumofcubes(n):
    sum = 0
    for i in range(n+1):
        sum += pow(i,3)
    return sum
sumofcubes(n)
```

```
Enter number of natural numbers: 10
```

Out[21]:
```
3025
```