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

In [1]:
```
def fibonacci(n):
    if n <= 1:
        return n
    else:
        return fibonacci(n-1) + fibonacci(n-2)

nterms = int(input("Enter the number of terms you want to display: "))

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

```
Enter the number of terms you want to display: 6
Fibonacci sequence:
0
1
1
2
3
5
```

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

In [2]:
```
def factorial(n):
    if n == 0:
        return 1
    else:
        return n * factorial(n-1)

# test the function
num = 5
print(f"The factorial of {num} is {factorial(num)}")
```

```
The factorial of 5 is 120
```

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

In [3]:
```
height = float(input("Enter your height in meters: "))
weight = float(input("Enter your weight in kilograms: "))

bmi = weight / (height ** 2)

print("Your Body Mass Index (BMI) is: ", round(bmi, 2))

if bmi < 18.5:
    print("You are underweight.")
elif bmi >= 18.5 and bmi <= 24.9:
    print("You are healthy.")
elif bmi >= 25 and bmi <= 29.9:
    print("You are overweight.")
else:
    print("You are obese.")
```

```
Enter your height in meters: 5.7
Enter your weight in kilograms: 73
Your Body Mass Index (BMI) is:  2.25
You are underweight.
```

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

In [4]:
```
import math

num = float(input("Enter a number: "))

# Calculate natural logarithm
logarithm = math.log(num)

print(f"The natural logarithm of {num} is {logarithm}")
```

```
Enter a number: 5
The natural logarithm of 5.0 is 1.6094379124341003
```

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

In [5]:
```
def cube_sum(n):
    sum = 0
    for i in range(1, n+1):
        sum += i*i*i
    return sum

# Testing the function
n = 5
print("Cube sum of first", n, "natural numbers:", cube_sum(n))
```

```
Cube sum of first 5 natural numbers: 225
```

In [ ]: