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

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

nterms = int(input("Enter the number of terms to generate in the sequence: "))

# check if the number of terms is valid
if nterms <= 0:
    print("Invalid input. Please enter a positive integer.")
else:
    print("Fibonacci sequence:")
    for i in range(nterms):
        print(fibonacci(i))
```

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)

# Take user input
num = int(input("Enter a non-negative integer to find its factorial: "))

# Output the factorial of num
print("The factorial of", num, "is", factorial(num))
```

```
Enter a non-negative integer to find its factorial: 66
The factorial of 66 is 544344939077443064003729240247842752644293064388798874532860126869671081148416000000000000000
```

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

In [5]:
```
# BMI Calculator

height = float(input("Enter your height in meters: "))
weight = float(input("Enter your weight in kilograms: "))

# Calculate BMI
bmi = weight / (height ** 2)

# Print result
print("Your BMI is: {:.2f}".format(bmi))
```

```
Enter your height in meters: 2.1
Enter your weight in kilograms: 80
Your BMI is: 18.14
```

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

In [6]:
```
import math

number = float(input("Enter a number: "))
natural_log = math.log(number)

print("The natural logarithm of", number, "is", natural_log)
```

```
Enter a number: 23
The natural logarithm of 23.0 is 3.1354942159291497
```

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

In [7]:
```
def cube_sum(n):
    """
    This function calculates the cube sum of first n natural numbers.
    """
    sum = 0
    for i in range(1, n+1):
        sum += i**3
    return sum

# Example usage:
n = 5
print(f"The cube sum of first {n} natural numbers is: {cube_sum(n)}")
```

```
The cube sum of first 5 natural numbers is: 225
```

In [ ]:
```

```