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

#Recursion Function means a defined function can call itself.

In [1]:

```
def recur_fibo(n):
    if n <= 1:
        return n
    else:
        return(recur_fibo(n-1) + recur_fibo(n-2))

nterms = int(input("Enter a Number"))

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

```
Enter a Number10
Fibonacci sequence:
0 1 1 2 3 5 8 13 21 34
```

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

In [2]:

```
def recur_factorial(n):
   if n == 1:
       return n
   else:
       return n*recur_factorial(n-1)

num = int(input("Enter a Number"))

if num < 0:
   print("Sorry, factorial does not exist for negative numbers")
elif num == 0:
   print("The factorial of 0 is 1")
else:
   print("The factorial of", num, "is", recur_factorial(num))

```

```
Enter a Number5
The factorial of 5 is 120
```

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

In [3]:

```
#BMI
mass = int(input("Enter Weight in kg : "))
height = int(input("Enter Height in centimeter : "))

bmi = mass/((height/100)**2)

print ("Body Mass Index is ", bmi )

if bmi>=30:
    print("BMI Class : Obesity")
elif 25<=bmi<29.9:
    print("BMI Class : Over Weight")
elif 18.5<=bmi<24.9:
    print("BMI Class : Healthy Weight")
elif bmi<18.5:
    print("BMI Class : Under Weight")
```

```
Enter Weight in kg : 65
Enter Height in centimeter : 165
Body Mass Index is  23.875114784205696
BMI Class : Healthy Weight
```

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

In [4]:

```
import math
math.log(20)
```

Out[4]:

```
2.995732273553991
```

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

In [5]:

```
num = int(input("Enter a number : "))
nat_list = []
sum1 = 0
for i in range(0,num+1):
    j = i**3
    nat_list.append(j)
    print(nat_list)
    sum1 = sum1 + nat_list[i]
print()
print(sum1, "is the cube sum of first", i,  "natural numbers" )
```

```
Enter a number : 5
[0]
[0, 1]
[0, 1, 8]
[0, 1, 8, 27]
[0, 1, 8, 27, 64]
[0, 1, 8, 27, 64, 125]

225 is the cube sum of first 5 natural numbers
```

In [ ]:

```

```