Programming Basic Assignment 6

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

In [1]:
```
# Python program to display the Fibonacci sequence
def recur_fibo(n):
    if n <= 1:
        return n
    else:
        return(recur_fibo(n-1) + recur_fibo(n-2))
nterms = 10
# check if the number of terms is valid
if nterms <= 0:
    print("Plese enter a positive integer")
else:
    print("Fibonacci sequence:")
    for i in range(nterms):
        print(recur_fibo(i))
```

```
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]:
```
# Factorial of a number using recursion
def recur_factorial(n):
    if n == 1:
        return n
    else:
        return n*recur_factorial(n-1)
num = 7
# check if the number is negative
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))
```

```
The factorial of 7 is 5040
```

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

In [3]:
```
def BMI(height, weight):
    bmi = weight/(height**2)
    return bmi
# Driver code
height = 1.79832
weight = 70
# calling the BMI function
bmi = BMI(height, weight)
print("The BMI is", format(bmi), "so ", end='')
```

```
The BMI is 21.64532402096181 so
```

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

In [4]:
```
import math
number = int(input("Enter the number: "))
ans = math.log(number)
print("The value is:",ans)
```

```
Enter the number: 20
The value is: 2.995732273553991
```

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

In [5]:
```
def sumofcubes(num: int):
    for i in range(1, num):
        print(i ** 3, end = ' ')
# Driver's code
inp = int(input(("Enter a number : ")))
sumofcubes(inp)
```

```
Enter a number : 7
1 8 27 64 125 216
```

In [ ]:
```

```