1 Programming Basic Assignment 6

1.0.1 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))
n = int(input("Enter number of terms:"))
print("Fibonacci sequence:")
for i in range(n):
    print(fibonacci(i))
```

```
Enter number of terms:3
Fibonacci sequence:
0
1
1
```

1.0.2 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
```

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

In [3]:
```
the_height = float(input("Enter the height in cm: "))
the_weight = float(input("Enter the weight in kg: "))
# defining a function for BMI
the_BMI = the_weight / (the_height/100)**2
# printing the BMI
print("Your Body Mass Index is", the_BMI)
# using the if-elif-else conditions
if the_BMI <= 18.5:
    print("Oops! You are underweight.")
elif the_BMI <= 24.9:
    print("Awesome! You are healthy.")
elif the_BMI <= 29.9:
    the_print("Eee! You are over weight.")
else:
    print("Seesh! You are obese.")
```

```
Enter the height in cm: 175
Enter the weight in kg: 63
Your Body Mass Index is 20.571428571428573
Awesome! You are healthy.
```

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

In [4]:
```
# Python code to demonstrate the working of
# log(a,Base)

import math

# Printing the log base e of 14
print ("Natural logarithm of 14 is : ", end="")
print (math.log(14))

# Printing the log base 5 of 14
print ("Logarithm base 5 of 14 is : ", end="")
print (math.log(14,5))

```

```
Natural logarithm of 14 is : 2.6390573296152584
Logarithm base 5 of 14 is : 1.6397385131955606
```

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

In [7]:
```
def sumOfSeries(n):
    sum = 0
    for i in range(1, n+1):
        sum +=i*i*i
    return sum
n = 3
print(sumOfSeries(n))
```

```
36
```

In [ ]:
```

```