Assignment 6 Solutions

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

In [1]:

```
# Program to generate the Fibonacci sequence using recursion

def gen_seq(length):
    if(length <= 1):
        return length
    else:
        return (gen_seq(length-1) + gen_seq(length-2))

length = int(input("Enter number of terms:"))

print("Fibonacci sequence using Recursion :")
for iter in range(length):
    print(gen_seq(iter))
```

```
Enter number of terms:12
Fibonacci sequence using Recursion :
0
1
1
2
3
5
8
13
21
34
55
89
```

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

In [2]:

```
# Factorial of a number
num = int(input("enter a number: "))

fact = 1
i = 1

while i <= num:
fact = fact * i
 i = i + 1

 print ("Factorial of the number %d is %d" %(num, fact))
```

```
enter a number: 10
Factorial of the number 10 is 3628800
```

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

In [3]:

```
# BMI = weight / Height * height

height = float(input("Enter your height(m): "))
weight = float(input("Enter your weight(kg): "))
print("Your BMI is: ", round(weight / (height * height), 2))
```

```
Enter your height(m): 5.4
Enter your weight(kg): 49
Your BMI is:  1.68
```

4. Write a Python Program to Calculate the Natural Logarithm of any Number ?

In [4]:

```
import math
x = int(input(("Enter a number : ")))
log = math.log(x)
print("Log of {} is {}".format(x, log))
```

```
Enter a number : 6
Log of 6 is 1.791759469228055
```

5. Write a Python Program for Cube sum of first n Natural Numbers ?

In [9]:

```
def cubeOfNaturalNumbers():
    in_num = int(input("Enter the no of Natural Numbers: "))
    result = pow(((in_num * (in_num +1))/2),2)
    print(f'The Cube Sum of First {in_num} Natural Numbers is {result}')

cubeOfNaturalNumbers()
```

```
Enter the no of Natural Numbers: 88
The Cube Sum of First 88 Natural Numbers is 15335056.0
```