In [1]:
```
#Q1)Write a Python Program to Find the Factorial of a Number?
```

In [2]:
```
def factorial(number):
    try:
        if(number==1):
            return 1
        else:
            fact = (number)*(factorial(number-1))
            return fact

        print(fact)


    except Exception as e:
        print(e)
```

In [4]:
```
#Example1: 5
number = int(input("Enter a number to find the factorial\n"))
factorial(number)
```

```
Enter a number to find the factorial
5
```

Out[4]:
```
120
```

In [5]:
```
#Example2: 10
number = int(input("Enter a number to find the factorial\n"))
factorial(number)
```

```
Enter a number to find the factorial
10
```

Out[5]:
```
3628800
```

In [ ]:

In [6]:
```
#Q2)Write a Python Program to Display the multiplication Table?
```

In [7]:
```
def multiplication_table(number):
    try:
        for i in range(1,11):
            print(f' {number}*{i} = {number*i}')
    except Exception as e:
        print(e)
```

In [10]:
```
#Example1:2
number = int(input("Enter a number to find multiplication of a number\n"))
multiplication_table(number)
```

```
Enter a number to find multiplication of a number
2
 2*1 = 2
 2*2 = 4
 2*3 = 6
 2*4 = 8
 2*5 = 10
 2*6 = 12
 2*7 = 14
 2*8 = 16
 2*9 = 18
 2*10 = 20
```

In [11]:
```
#Example1:12
number = int(input("Enter a number to find multiplication of a number\n"))
multiplication_table(number)
```

```
Enter a number to find multiplication of a number
12
 12*1 = 12
 12*2 = 24
 12*3 = 36
 12*4 = 48
 12*5 = 60
 12*6 = 72
 12*7 = 84
 12*8 = 96
 12*9 = 108
 12*10 = 120
```

In [ ]:

In [12]:
```
#Q3)Write a Python Program to Print the Fibonacci sequence?
```

In [22]:
```
def fibbonacci_sequence(number):
    try:
        for i in range(number):
            if(i==0):
                print(f'The fibbonacci_sequence of a given number {number} is')
                print(i)
                previous = i

            elif(i==1):
                print(i)
                present = i


            else:
                future = previous+present
                print(future)
                previous = present
                present = future

    except Exception as e:
        print(e)
```

In [23]:
```
#Example1: 5
number = int(input("Enter the number to find out fibbanoci series\n"))
fibbonacci_sequence(number)
```

```
Enter the number to find out fibbanoci series
5
The fibbonacci_sequence of a given number 5 is
0
1
1
2
3
```

In [24]:
```
#Example1: 8
number = int(input("Enter the number to find out fibbanoci series\n"))
fibbonacci_sequence(number)
```

```
Enter the number to find out fibbanoci series
8
The fibbonacci_sequence of a given number 8 is
0
1
1
2
3
5
8
13
```

In [ ]:

In [25]:
```
#Q4)Write a Python Program to Check Armstrong Number?
```

In [47]:
```
def Amstrong_Number(Number):
    try:
        total = 0
        list_1 = list(str(Number)) #Dividing number into list example 153 = ['1','5','3']
        for i in  list_1:


        if(total==Number):
            print("It is an Amstrong Number")

        else:
            print("It is not a Amstrong Number")

    except Exception as e:
        print(e)
```

In [48]:
```
#Example1:if it is not an amstrong number:
Number = int(input("Enter a number to check amstrong number or not\n"))
Amstrong_Number(Number)
```

```
Enter a number to check amstrong number or not
143
It is not a Amstrong Number
```

In [49]:
```
#Example1:if it is an amstrong number:
Number = int(input("Enter a number to check amstrong number or not\n"))
Amstrong_Number(Number)
```

```
Enter a number to check amstrong number or not
153
It is an Amstrong Number
```

In [ ]:

In [50]:
```
#Q5)Write a Python Program to Find Armstrong Number in an Interval?
```

In [51]:
```
def Amstrong_Interval(num1,num2):
    try:
        for number in range(num1,num2):
            total = 0
            list_1 = list(str(number))
            for i in list_1:
                total = total + int(i)*int(i)*int(i)

            if(total==number):
                print(f' {number} is an amstrong number')

    except Exception as e:
        print(e)
```

In [54]:
```
#Example1: [0-1000]
num1,num2 = map(int, input("Enter an interval to find out amstrong numbers").split())
Amstrong_Interval(num1,num2)
```

```
Enter an interval to find out amstrong numbers0 1000
 0 is an amstrong number
 1 is an amstrong number
 153 is an amstrong number
 370 is an amstrong number
 371 is an amstrong number
 407 is an amstrong number
```

In [56]:
```
#Example1: [0-999999]
num1,num2 = map(int, input("Enter an interval to find out amstrong numbers").split())
Amstrong_Interval(num1,num2)
```

```
Enter an interval to find out amstrong numbers0 99999
 0 is an amstrong number
 1 is an amstrong number
 153 is an amstrong number
 370 is an amstrong number
 371 is an amstrong number
 407 is an amstrong number
```

In [ ]:

In [57]:
```
#Q6)Write a Python Program to Find the Sum of Natural Numbers?
```

In [58]:
```
def sum_of_natural_numbers(Number):
    try:
        total = (Number*(Number+1))/2 #sum of natural numbers is equal to n(n+1)/2
        print(total)

    except Exception as e:
        print(e)
```

In [59]:
```
#Example1 :10
Number = int(input("Enter a number to calculate the sum of natural numbers\n"))
sum_of_natural_numbers(Number)
```

```
Enter a number to calculate the sum of natural numbers
10
55.0
```

In [60]:
```
#Example1 :500
Number = int(input("Enter a number to calculate the sum of natural numbers\n"))
sum_of_natural_numbers(Number)
```

```
Enter a number to calculate the sum of natural numbers
500
125250.0
```

In [ ]: