1. Write a Python Program to Find the Factorial of a Number?

In [1]:
```
num = int(input("Enter a number: "))

factorial = 1

if num < 0:
    print("Factorial is not defined for negative numbers")
elif num == 0:
    print("Factorial of 0 is 1")
else:
    for i in range(1, num + 1):
        factorial = factorial * i
    print("Factorial of", num, "is", factorial)
```

```
Enter a number: 5
Factorial of 5 is 120
```

2. Write a Python Program to Display the multiplication Table?

In [2]:
```
num = int(input("Enter a number: "))

print("Multiplication Table of", num)

for i in range(1, 11):
    print(num, "x", i, "=", num * i)
```

```
Enter a number: 3
Multiplication Table of 3
3 x 1 = 3
3 x 2 = 6
3 x 3 = 9
3 x 4 = 12
3 x 5 = 15
3 x 6 = 18
3 x 7 = 21
3 x 8 = 24
3 x 9 = 27
3 x 10 = 30
```

3. Write a Python Program to Print the Fibonacci sequence?

In [3]:
```
n = int(input("Enter the number of terms: "))

# initialize the first two terms
n1, n2 = 0, 1
count = 0

# check if the number of terms is valid
if n <= 0:
   print("Please enter a positive integer")
elif n == 1:
   print("Fibonacci sequence up to", n, ":")
   print(n1)
else:
   print("Fibonacci sequence:")
   while count < n:
       print(n1)
       nth = n1 + n2
       # update values
       n1 = n2
```

```
        n2 = nth
        count += 1
```

```
Enter the number of terms: 5
Fibonacci sequence:
0
1
1
2
3
```

4. Write a Python Program to Check Armstrong Number?

In [4]:
```
num = int(input("Enter a number: "))

# initialize sum and number of digits
sum = 0
n = len(str(num))

# iterate over each digit
temp = num
while temp > 0:
    digit = temp % 10
    sum += digit ** n
    temp //= 10

# check if the number is an Armstrong number
if num == sum:
    print(num, "is an Armstrong number")
else:
    print(num, "is not an Armstrong number")
```

```
Enter a number: 153
153 is an Armstrong number
```

5. Write a Python Program to Find Armstrong Number in an Interval?

In [5]:
```
lower = int(input("Enter the lower limit: "))
upper = int(input("Enter the upper limit: "))

print("Armstrong numbers in the interval", lower, "to", upper, "are:")
for num in range(lower, upper + 1):
    # initialize sum and number of digits
    sum = 0
    n = len(str(num))

    # iterate over each digit
    temp = num
    while temp > 0:
        digit = temp % 10
        sum += digit ** n
        temp //= 10

    # check if the number is an Armstrong number
    if num == sum:
        print(num)
```

```
Enter the lower limit: 5
Enter the upper limit: 15
Armstrong numbers in the interval 5 to 15 are:
5
6
7
8
9
```

6. Write a Python Program to Find the Sum of Natural Numbers?

In [6]:
```python
n = int(input("Enter a positive integer: "))

# initialize sum
sum = 0

# loop through natural numbers up to n and add to sum
for i in range(1, n+1):
    sum += i

print("The sum of the first", n, "natural numbers is", sum)
```

```
Enter a positive integer: 10
The sum of the first 10 natural numbers is 55
```

In [ ]:
```python

```