## EXPERIMENT NO: 9 Factorial Generator

**AIM:** Develop a python program to compute the factorial of a given integer .

## Theory:

The **factorial** of a number **(n!)** is the product of all positive integers from **1 to n**.

Mathematically,

$$n!=n\times(n-1)\times(n-2)\times...\times1$$

- **Example:**
  - **5! = 5 × 4 × 3 × 2 × 1 = 120**
  - **4! = 4 × 3 × 2 × 1 = 24**
  - **1! = 1**
  - **0! = 1 (By definition)**

**Algorithm:**

1. **Start**
2. **Input**: Read an integer **n**
3. If **n = 0 or 1**, return **1**
4. Initialize `fact = 1`
5. Use a **loop** from `i = 1` to `n`:
6. Multiply `fact = fact * i`
7. Print the **factorial** result.
8. **End**

**Program:**

```
# Factorial using for loop

num = int(input("Enter a number: "))


# Check if number is negative

if num < 0:

   print("Factorial is not defined for negative numbers")

else:

   fact = 1

   for i in range(1, num + 1):

      fact *= i

   print(f"The factorial of {num} is {fact}")
```

Flowchart :- For factorial Generator.