## Experiment No: 20

## **Experiment Name:** Find Factorial of given number n

## **Objective:**

The objective of this lab experiment is to implement a C program that calculates the factorial of a given number using an iterative approach. The factorial of a non-negative integer *n*, denoted as n!, is the product of all positive integers up to *n*.

# **Code:**

#include <stdio.h>

int main()

{

int c, n, f = 1;

printf("Enter a number : \n");

scanf("%d", &n);

for (c = 1; c <= n; c++)

{

f = f \* c;

}

printf("Factorial of %d = %d\n", n, f);

return 0;

}

# **Input:**

Enter a number :

5

# **Output:**

Factorial of 5 = 120

## **Discussion:**

The recursive approach used in the code provides an intuitive way to compute factorials. However, it's important to note that for large values of

n, recursion may lead to a stack overflow due to excessive function calls. In practice, an iterative approach or memoization may be more suitable for handling large values.