**LAB EXERCISES**

**EX.NO:05**

**FACTORIAL USING RECURSION**

**AIM:**

**To write a C program to find factorial of a given number using recursion.**

**PROCEDURE:**

1. **Start the program.**
2. **Declare the functions fact (int) which:**

* **Returns 1 if n==0 (base case).**
* **Otherwise returns n\*fact (n-1) (recursive call).**

1. **In main () ;**

* **Declare Variables n (input) & f(result).**
* **Get the value of n form the user.**
* **Call fact (n) and store result in f.**

1. **Prompt the user to enter a positive integer.**
2. **Read and store the input value in n**.
3. **Print the factorial result.**
4. **End the program.**

**PROGRAM:**

**#include <stdio.h>**

**#include <conio.h>**

**long int fact(int);**

**void main() {**

**int n;**

**long int f;**

**clrscr();**

**printf("\nEnter the value of n: ");**

**scanf("%d", &n);**

**f = fact(n);**

**printf("\nThe factorial value of %d is %ld", n, f);**

**getch();**

**}**

**long int fact(int n) {**

**if (n == 0)**

**return 1;**

**else**

**return n \* fact(n - 1);**

**}**

**RESULT:**

**Thus the above C program is executed and the output is obtained.**