EXERCISE-5

5.Write a c program of find a factorial of a given number using recursion.

AIM: To write a C program to find the factorial of a given number using recursion.

Algorithm:

1. Start the program.
2. Define a recursive function factorial(n):
    - If n <= 1, return 1.
    - Else return n * factorial(n - 1).
3. In main, input a number n.
4. Call factorial(n) and print the result.
5. End the program**.**

Program Code:

```
#include <stdio.h>
int factorial(int n) {
   if (n <= 1)
      return 1;
   else
      return n * factorial(n - 1);
}
int main() {
   int num;
```

```
    printf("Enter a number: ");
    scanf("%d", &num);
    if (num < 0) {
        printf("Factorial is not defined for negative numbers.\n");
    } else {
        printf("Factorial of %d is %d\n", num, factorial(num));
    }
    return 0;
}
```

Input and Output:

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

Result:

The program correctly computes the factorial of a number using recursion.