EXERCISE-6

6.Write a c program of find Fibonacci series using recursion.

AIM: To write a C program to generate the Fibonacci series using recursion.

Algorithm:

1. Start the program.
2. Define a recursive function fibonacci(n):
    - If n == 0, return 0.
    - If n == 1, return 1.
    - Else, return fibonacci(n - 1) + fibonacci(n - 2).
3. In main, input the number of terms n.
4. Use a loop to call fibonacci(i) for all terms from 0 to n - 1 and print them.
5. End the program.

Program Code:

```
#include <stdio.h>
int fibonacci(int n) {
   if (n == 0)
      return 0;
   else if (n == 1)
      return 1;
   else
      return fibonacci(n - 1) + fibonacci(n - 2);
```

```
}
int main() {
    int n;
    printf("Enter number of terms: ");
    scanf("%d", &n);
    if (n <= 0) {
        printf("Please enter a positive number.\n");
        return 0;
    }
    printf("Fibonacci Series: ");
    for (int i = 0; i < n; i++) {
        printf("%d ", fibonacci(i));
    }
    printf("\n");
    return 0;
}
```

Input and Output:

```
Enter number of terms: 7
Fibonacci Series: 0 1 1 2 3 5 8
```

Result:

The program successfully generates the Fibonacci series using a recursive function.