EXERCISE -6

Write a C program to find Fibonacci series using Recursion

AIM:

To write a C program that displays the Fibonacci series using recursion.

ALGORITHM :

1. Start the program.
2. Create a function named fibonacci(n):
    - If n is 0, return 0.
    - If n is 1, return 1.
    - For any other value, return the sum of the previous two terms: fibonacci(n - 1) + fibonacci(n - 2).
3. In the main() function:
    - Ask the user to enter the number of terms.
    - Use a loop to call the fibonacci() function and print each term one by one.
4. End the program.

INPUT:

Enter the number of terms: 6

PROGRAM:

```
#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, i;
   printf("Enter the number of terms: ");
   scanf("%d", &n);
   if (n <= 0) {
      printf("Please enter a positive number.\n");
   } else {
      printf("Fibonacci Series: ");
      // Print each term using the recursive function
      for (i = 0; i < n; i++) {
         printf("%d ", fibonacci(i));
      }
      printf("\n");
   }
   return 0;
}
```

INPUT AND OUTPUT:

```
Enter the number of terms: 6
Fibonacci Series: 0 1 1 2 3 5


=== Code Execution Successful ===
```

RESULT:

The program successfully prints the Fibonacci series using recursion.