EXERCISE -4

Write a C program to find Fibonacci series without using Recursion

AIM:

To write a C program to generate the Fibonacci series without using recursion.

ALGORITHM:

1. Start the program.
2. Declare variables n, a = 0, b = 1, and next.
3. Read the number n from the user (number of terms in the Fibonacci series).
4. Print the first two terms (a and b).
5. Use a loop from 3 to n:
    - Calculate next = a + b
    - Print next
    - Update a = b and b = next
6. End the program.

PROGRAM (Non-recursive Fibonacci Series):

```
#include <stdio.h>
int main() {
   int n, i;
   int a = 0, b = 1, next;
   printf("Enter the number of terms: ");
   scanf("%d", &n);
   if (n <= 0) {
      printf("Please enter a positive integer.\n");
   } else {
      printf("Fibonacci Series: ");
```

```
    for (i = 1; i <= n; ++i) {
        printf("%d ", a);
        next = a + b;
        a = b;
        b = next;
    }
    printf("\n");
  }

  return 0;
}
```

INPUT AND OUTPUT:

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


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

RESULT:

The program successfully generates the Fibonacci series without using recursion.