

3. Develop a recursive function FIBO (num) that accepts an integer argument. Write a C program that invokes this function to generate the Fibonacci sequence up to num.

```
#include <stdio.h>
int FIBO(int num) {
    if (num == 0)
        return 0;
    else if (num == 1)
        return 1;
    else
        return FIBO(num-1) + FIBO(num-2);
}
int main() {
    int n;
    printf ("Enter the number of terms in Fibonacci sequence : ");
    scanf ("%d", &n);
    printf ("Fibonacci Sequence up to %d terms :\n", n);
    for (int i = 0; i < n; i++) {
        printf ("%d", FIBO(i));
    }
    printf ("\n");
    return 0;
}
```

C exp6fib0.c > main()

```
1
2 #include <stdio.h>
3
4 // Recursive function to find Fibonacci number at position num
5 int FIBO(int num) {
6     if(num == 0)
7         return 0;
8     else if(num == 1)
9         return 1;
10    else
11        return FIBO(num - 1) + FIBO(num - 2);
12 }
13
14 int main() {
15     int n;
16
17     printf("Enter the number of terms in Fibonacci sequence: ");
18     scanf("%d", &n);
19
20     printf("Fibonacci sequence up to %d terms:\n", n);
21     for(int i = 0; i < n; i++) {
22         printf("%d ", FIBO(i));
23     }
24
25     printf("\n");
26     return 0;
27 }
28
```

```
PS C:\Users\abiga\OneDrive\Desktop\Absproj> cd "c:\Users\abiga\OneDrive\Desktop\Absproj\" ; if ($?) { gcc exp6fibo.c -o exp6fibo } ; if ($?) { .\exp6fibo }
Enter the number of terms in Fibonacci sequence: 5
Fibonacci sequence up to 5 terms:
0 1 1 2 3
PS C:\Users\abiga\OneDrive\Desktop\Absproj>
```