DAA-Practical - 1

//Program to display the Fibonacci sequence up to n-th term using non-recursive

CODE

```
import java.util.Scanner;

public class FibonacciSeries {
   static void printFibonacci(int nterms) {
      int n1 = 0, n2 = 1, count = 0;

      if (nterms <= 0) {
         System.out.println("Please enter a positive integer");
      }
      else if (nterms == 1) {
         System.out.println("Fibonacci sequence up to " + nterms + " term:");
         System.out.println(n1);
      }
      else {
         System.out.println("Fibonacci sequence:");
         while (count < nterms) {
            System.out.print(n1 + " ");
            int nth = n1 + n2;
            n1 = n2;
            n2 = nth;
            count++;
         }
      }
   }
   public static void main(String[] args) {
      Scanner sc = new Scanner(System.in);
      System.out.print("Enter number of terms: ");
      int nterms = sc.nextInt();
      printFibonacci(nterms);
   }
}
```

Output

```
Enter number of terms: 8
Fibonacci sequence:
0 1 1 2 3 5 8 13
```

//Program to display the Fibonacci sequence up to n-th term using recursive method

CODE

```
import java.util.Scanner;

public class FibonacciRecursive {

    static int fibonacci(int n) {
        if (n <= 1)
            return n;
        else
            return fibonacci(n - 1) + fibonacci(n - 2);
    }
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter number of terms: ");
        int n = sc.nextInt();

        System.out.println("Fibonacci sequence:");
        for (int i = 0; i < n; i++) {
            System.out.print(fibonacci(i) + " ");
        }
    }
}
```

Output

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