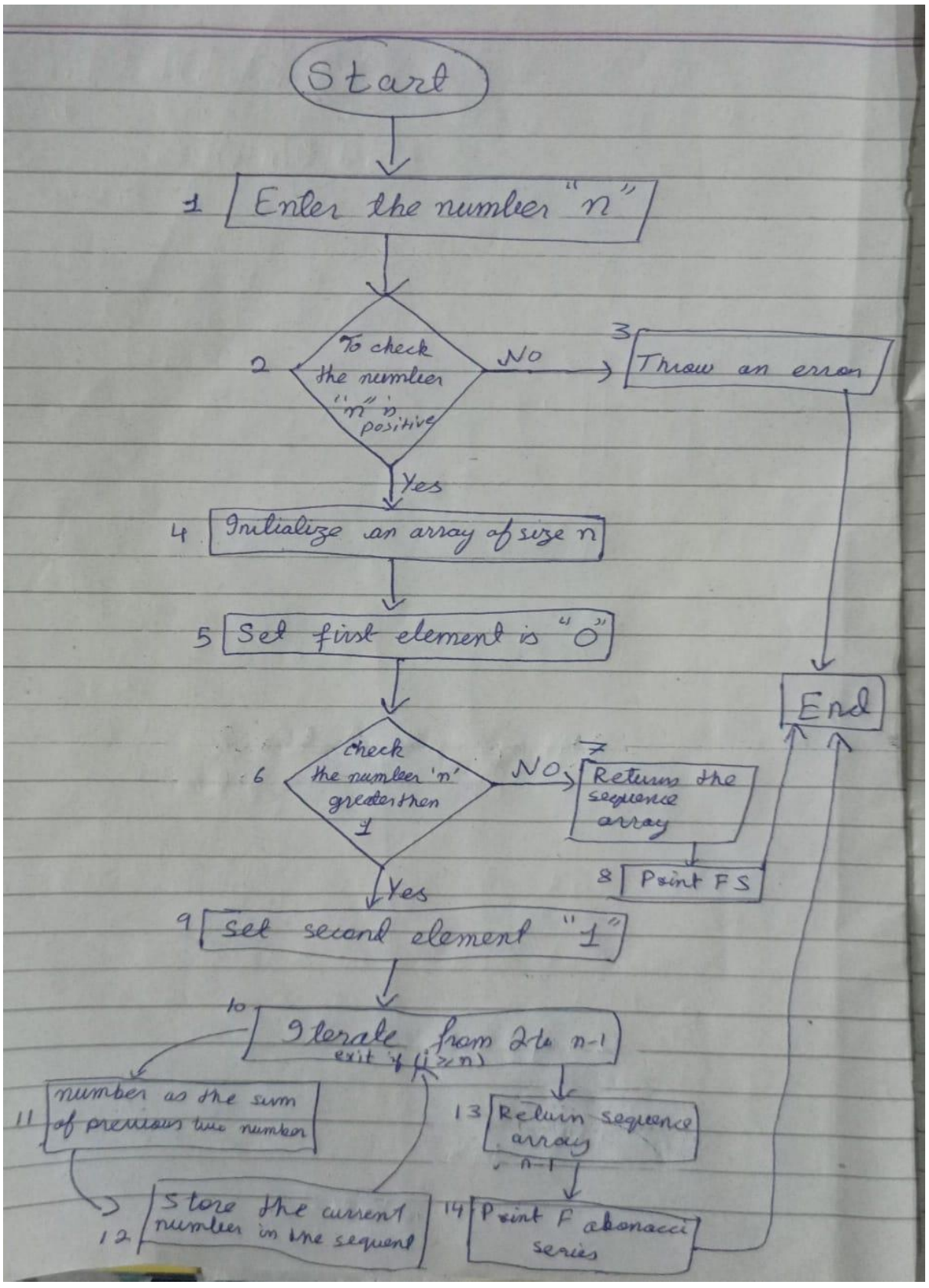
Fibonacci Series

CODE:

Main.java

```java
import java.util.Scanner;

public class Fibonacci {

    private int n;

    public Fibonacci() {

        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the number of terms in the Fibonacci Series: ");
        n = scanner.nextInt();

        if (n <= 0) {
            throw new IllegalArgumentException("Number of terms must be positive.");
        }
    }


    public int[] getSequence() {
        int[] sequence = new int[n];
        sequence[0] = 0;
        if (n > 1) {
            sequence[1] = 1;
            for (int i = 2; i < n; i++) {
                sequence[i] = sequence[i - 1] + sequence[i - 2];
            }
        }
        return sequence;
    }

    public static void main(String[] args) {
        Fibonacci fibonacci = new Fibonacci();
        int[] sequence = fibonacci.getSequence();
        System.out.print("Fibonacci Series (First " + fibonacci.n + " terms): ");
        for (int number : sequence) {
            System.out.print(number + " ");
        }
    }
}

```

Control Flow Graph:



Paths:

Path 1 → 1, 2, 3.

Path 2 → 1, 2, 4, 5, 6, 7, 8.

Path 3 → 1,2,4,5,6,9,10,11,12,13 ,14.

Test Cases:

Test Case ID	Description	Input Data	Expected Output	Actual Output	Status
TC_001	Entering the number to get the Fibonacci series	Entered number is positive	Fibonacci series as outcome	Series of number	pass
TC_002	Entering the number to get the Fibonacci series	Entered number is negative	Error is thrown	Error is thrown	Pass
TC_003	Entering the number to get the Fibonacci series	Entered number is zero	Error is thrown	Error is thrown	pass