```java
package com.simplilearn.demo;
class LIS {
    static int max_ref;

    static int _lis(int arr[], int n)
    {

        if (n == 1)
            return 1;


        int res, max_ending = 1;
        for (int i = 1; i < n; i++) {
            res = _lis(arr, i);
            if (arr[i - 1] < arr[n - 1] && res + 1 > max_ending)
                max_ending = res + 1;
        }

        if (max_ref < max_ending)
            max_ref = max_ending;

        return max_ending;
    }


    static int lis(int arr[], int n)
    {

        max_ref = 1;
        _lis(arr, n);
        return max_ref;
    }


    public static void main(String args[])
    {
        int arr[] = { 10, 22, 9, 33, 21, 50, 41, 60, 80 };
        int n = arr.length;
        System.out.println("Length of lis is :"+ lis(arr, n) );
    }
}
```