Rajalakshmi Engineering College

Name: Joe Benedict A
Email: 241901042@rajalakshmi.edu.in
Roll no:
Phone: 6381868628
Branch: REC
Department: CSE (CS) - Section 2
Batch: 2028
Degree: B.E - CSE (CS)

Scan to verify results

2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 9_Q1

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Bobby is tasked with processing a sequence of numbers from a monitoring system. He needs to extract a strictly increasing subsequence using an ArrayList. The program should dynamically add numbers to the ArrayList only if they are greater than the last number currently stored in the list. Bobby aims to efficiently utilize the dynamic resizing and indexing features of the ArrayList to solve this problem.

Help Bobby implement this solution.

Input Format

The first line of input consists of an integer N, representing the number of elements.

The second line consists of N space-separated integers, representing the elements.

Output Format

The output prints the list of integers in increasing sequence, ignoring out-of-order elements.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 7
3 5 9 1 11 7 13
Output: [3, 5, 9, 11, 13]

Answer

```
 import java.util.ArrayList;
import java.util.Scanner;

 class IncreasingSubsequence {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Read number of elements
        int N = scanner.nextInt();

        // Read the sequence of numbers
        ArrayList<Integer> sequence = new ArrayList<>();
        for (int i = 0; i < N; i++) {
            sequence.add(scanner.nextInt());
        }

        // Extract strictly increasing subsequence
        ArrayList<Integer> increasingSubsequence = new ArrayList<>();
        for (int num : sequence) {
            if (increasingSubsequence.isEmpty() || num >
increasingSubsequence.get(increasingSubsequence.size() - 1)) {
                increasingSubsequence.add(num);
            }
        }
```

```
        // Print the result
        System.out.println(increasingSubsequence);
    }
}
```

Status : Correct **Marks : 10/10**