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P1S3P1.java

```java
package javapract;
import java.util.*;

public class P1S3P1 {

    public static List<Integer> findLongestIncreasingSubsequence(int[] nums) {
        if (nums == null || nums.length == 0)
            return new ArrayList<>();

        int n = nums.length;
        List<List<Integer>> subsequences = new ArrayList<>();
        List<Integer> longestIncreasingSubsequence = new ArrayList<>();

        for (int i = 0; i < n; i++) {
            List<Integer> currentSubsequence = new ArrayList<>();
            currentSubsequence.add(nums[i]);

            for (int j = 0; j < i; j++) {
                if (nums[i] > nums[j] && subsequences.get(j).size() >= currentSubsequence.size()) {
                    currentSubsequence = new ArrayList<>(subsequences.get(j));
                    currentSubsequence.add(nums[i]);
                }
            }

            subsequences.add(currentSubsequence);

            if (currentSubsequence.size() > longestIncreasingSubsequence.size()) {
                longestIncreasingSubsequence = currentSubsequence;
            }
        }

        return longestIncreasingSubsequence;
    }

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

        System.out.print("Enter the number of elements in the list: ");
        int n = scanner.nextInt();

        int[] nums = new int[n];
        System.out.println("Enter the elements of the list:");
        for (int i = 0; i < n; i++) {
```

Console

<terminated> P1S3P1 (1) [Java Application] C:\Program Files\Java\jdk-21\bin\javaw.exe (01-Apr-
Enter the number of elements in the list: 5
Enter the elements of the list:
5 6 7 1 2
Longest Increasing Subsequence:
[5, 6, 7]

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Console

<terminated> P1S3P1 (1) [Java Application] C:\Program Files\Java\jdk-21\bin\javaw.exe (01-Apr-
Enter the number of elements in the list: 8
Enter the elements of the list:
1 2 3 4 5 6 7 8
Longest Increasing Subsequence:
[1, 2, 3, 4, 5, 6, 7, 8]