

## **Writeup for File Handling Project:**

### **Project Objective:**

- Created a java project to find the longest increasing subsequence from a list of random numbers.
- The longest increasing subsequence problem is to find a subsequence of a given sequence in which the subsequence's elements are in sorted order, lowest to highest, and in which the subsequence is as long as possible. This subsequence is not necessarily contiguous or unique.

### **Approach Used:**

The idea is to use recursion to solve this problem. For each item, there are two possibilities:

- Include the current item in LIS if it is greater than the previous element in LIS and recur for the remaining items.
- Exclude the current item from LIS and recur for the remaining items.

Finally, return the maximum value we get by including or excluding the current item. The base case of the recursion would be when no items are left.