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package Lesson\_4;

import java.util.ArrayList;

public class p\_4\_19\_LISbsequnce {

final static int ArraySize = 100;

// genrate a random number

public static int randomNo() {

int min = -99;

int max = 99;

//Generate random int value from 50 to 100

int random\_int = (int)Math.floor(Math.random()\*(max-min+1)+min);

return random\_int;

}

// Create array of random numbers

public static int[] ranomArray() {

int[] arr = new int[ArraySize];

for (int i = 0; i < arr.length; i++) {

arr[i] = randomNo(); // storing random integers in an array

}

return arr;

}

// Find the Longest Increasing Subsequence

public static void findLIS() {

int[] RandomArray= ranomArray(); // The random array gnerated

int finalSize=0; // Max Subsequence size found yet

ArrayList<Integer> finalArray = new ArrayList<Integer>(); // Max Subsequence List found yet

for(int i=0 ; i < RandomArray.length;i++) { // to iterate the random array

int tempSize=0;

ArrayList<Integer> tempArray = new ArrayList<Integer>();

for(int j=i; j < RandomArray.length-1 ;j++) { // iterate to find the max subsequence size posible

if(j == i) { // add the first element the the array

tempArray.add(RandomArray[j]);

tempSize++;

}

int LargerValue=0;

for(int x : tempArray) { // get the max value in the temprary array

if(x > LargerValue) {

LargerValue = x;

}

}

if(RandomArray[j+1]>=LargerValue ) { // add to temprary array, new bigger value found

tempArray.add(RandomArray[j+1]);

tempSize++;

}

}// End j loop

if(tempSize > finalSize) { // swap with final array the new bigger array found

finalSize = tempSize;

finalArray= tempArray;

}

}// End i loop

System.out.println("Final Size: "+finalSize);

System.out.println("Final List: "+finalArray);

}

public static void main(String[] args) {

findLIS();

}

}