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/*
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 */
package edu.slcc.asdv.caleb.lab_calebfontenot_maximumorderedstring;

import java.util.ArrayList;
import java.util.Collections;
import java.util.Comparator;
import java.util.Scanner;

/**
 *
 * @author caleb
 */
public class FindMax {
    public static String findMax(String input) {
        ArrayList<String> possibleSubStr = new ArrayList<>();
        String currentStr = "";
        for (int i = 0; i < input.length() - 2; ++i) {  $O(n)$ 
            currentStr = input.charAt(i) + "";
            for (int j = i + 1; j < input.length() - 1; ++j) {  $O(n)$ 
                if (input.toLowerCase().charAt(i) < input.toLowerCase().charAt(j)) {
                    currentStr += input.charAt(j);
                } else {
                    possibleSubStr.add(currentStr);
                    break;
                }
            }
        }
        Collections.sort(possibleSubStr, new CompareSize());
        //System.out.println(possibleSubStr);
        return possibleSubStr.get(0);
    }

    public static void main(String[] args)
    {
        //System.out.print("Enter a string: ");
        //Scanner input = new Scanner(System.in);
        String inputString = "abcdabcdefgabcdefadcfab";  $26 \text{ chars}$ 
        //input.nextLine();
        System.out.print("The maximum sorted subString is: ");
        System.out.println(findMax(inputString));
    }
}

class CompareSize implements Comparator {

    @Override
    public int compare(Object o1, Object o2)
    {
        int str1 = ((String) o1).length();
        int str2 = ((String) o2).length();
        if (str1 > str2) {
            return -1;
        } else if (str1 == str2) {
            return 0;
        } else if (str1 < str2) {
            return 1;
        }
        return Integer.MAX_VALUE;
    }
}

```