Introduction to Computer Science

Laboratory 11

1. Design and implement a C program that, given an integer sequence represented as an array, removes all the repeated elements in the sequence.

2. Develop a C program that takes as input an integer sequence "s" and calculates the longest ordered subsequence in s. For example, if s = 1, 2, 3, 4, 3, 2, 1, 0 the result should be 4, 3, 2, 1, 0.

3. Write a C program that calculates the cumulative sum for an integer sequence taken as parameter. For example if the sequence is 1,5,-2,7 the result should be 1, 6, 4, 11.

4. Without using arrays, develop a program that takes as an input a string "str" and a character "c". Then counts how many times c appears in str.

5. Write a C program that takes two string as input ("text" and "pattern") and decides if there is at least one occurrence of pattern in text.

6. Design and implement a C program that given a string, decides if is in lexicographical order. e.g. "Art" is in lexicographical order but is not the case for "Hello".

7. If you resolved the exercised 2 and for without using recursion, find a recursive solution for them. Otherwise, find an iterative solution for them.