

Password

SEASON 7 – ROUND FOUR



As you know, Ivancho is a great hacker. His current task is to break a password. Until now he has gathered the following information about the password.

- The password is a substring of a string of non-decreasing digits
- The password is as long as possible
- The password is a palindrome

Palindrom is a string that is read in the same way from the left and right. Examples of palindromes are for example 'bob' and 'racecar'.

Help Ivancho find all the passwords that meet the conditions.

Input

The first row of the file `password.in` contains the length of the given string. A string of length N . is entered from the next line. **The string consists of non-decreasing digits (each digit except the first one is greater than or equal to the previous one).**

Output

In the output file `password.out` print the number of passwords that are eligible. In the next line, print the possible in lexicographical order.

Constraints

$$1 \leq N \leq 100000$$

Time limit: 1.0 sec

Memory limit: 256 MB

Example test

Input (<code>password.in</code>)	Output (<code>password.out</code>)
7 1223447	2 22 44
1 8	1 8

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Clarifications

In the first example the longest substrings that are palindromes are 2 – “22” and “44”.