Problem A. Anthem

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

Dwarf the Piper has been playing the Dwarf National Anthem (DNA) on his giant pipe organs every morning for centuries. But now, he has to move to a new cave with limited space, where his original pipe organs no longer fit.

The DNA is a sequence of notes (letters from `a` to `z`), and each pipe of the organ can play a specific note. Dwarf the Piper must build a compact organ with the smallest number of pipes that can play the entire DNA.

Organ pipes are stored in a row. To play the DNA, Dwarf the Piper can start at any pipe. Once he has blown the pipe making the appropriate note, he can stay in the same place, move to the next pipe to the left, or move to the next pipe to the right. He can stop playing at any place. Help the Piper to build the shortest pipe-organs that can play the DNA.

Input

The first line of input contains an integer number N representing the number of notes in the DNA. The second input line contains the DNA as a string of N lowercase letters.

Limits $1 \leq N \leq 500\,000$.

Output

The first line of the output should contain an integer K which is the smallest number of pipes in an organ that can be used to play the DNA. The second line of the output should contain the description of such organs: a string of K lowercase letters which are the notes assigned to the pipes from left to right. If there are many possible shortest organs, your program can print any of them.

Example

standard input	standard output
14 ecerrcwrwcwror	7 cercwro