

## PROBLEM 2

Given a string consisting of decimal digits,  $0, 1, \dots, 9$ , such as 122244 and 4444444444, consider the following operation which produces from such a string a new string.

The operation begins with reading the digits of the given string from left to right. If a digit, say  $a$ , appears consecutively  $r$  times but not  $r + 1$  times for some positive integer  $r$ , then produce  $\bar{r}a$  without any space between digits, where  $\bar{r}$  is the string of digits representing integer  $r$  in decimal notation. Repeat this process on the remaining string (i.e., the substring of the given string beginning from the  $r + 1$ -st digit) until the remaining string become empty.

By concatenating all the strings produced in this way during the course of processes, without any space between them, a new string of digits is produced. We count the whole course of processes for one application of the operation.

For example, from 122244 a new string  $\bar{1}\bar{1}\bar{3}\bar{2}\bar{2}4 = 113224$  is produced by one application of the operation, and from 4444444444 a new string 114.

The operation may be applied repeatedly.

Your task is to write a program which, given a string of digits of length less than or equal to 100, outputs a new string that is obtained from the string by applying the operation  $n$  times, where  $n \leq 20$ .

### INPUT

The input file is `input.txt` which consists of 2 lines. The first line contains an integer  $n$ , the number of times for the operation to be applied. The second line contains a string to receive the operation.

### OUTPUT

The output file should be `output.txt` which should contain a single line containing the new string produced by applying the operation  $n$  times, followed by the Return code.

### EXAMPLE

Example Input:

5
11

Example output:

13112221
----------