

Play with Strings

All you have to do is implement the following algorithm ,which is a very popular compression technique.

1.You are given an input string A. (For eg. ababc)

2.Find all the rotations of A (In this case, it is ababc,babca,abcab,bcaba,cabab)

- Now sort them (After sorting, we have ababc,abcab,babca,bcaba,cabab)

- Then arrange them as follows:

ababc

abcab

babca

bcaba

cabab

- Now pick out the last column. It is 'cbaab'. It is the result of this algorithm

- Also observe that the 1st row has the original string.(Use 1 indexing)

Now, for this problem, you are given the output and the row number that has the original string.

For the above example , it is 'cbaab' and 1.

Given these 2 parameters, you just need to decode it. (ie.,find the original string.)

Input:

Each test case has 2 lines.

1st line – An integer R that represents the row that contains the original string.

2nd line - A string that represents the output of the above algorithm. (Length of string ≤ 2000) (All characters are lower case).

The input is terminated with R=-1.

Output:

The original string.

Sample Input:

1

cbaab

3

mnoag

-1

Sample Output:

ababc

mango