Problem L. Jason ABC

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

You are given a string S of length $3n$, consisting of the characters `A`, `B` and `C`. You are allowed to perform the following operation:

- Select some subsegment of this string and a character c (one of `A`, `B` and `C`). Then, replace all the characters on the subsegment with c.

Find the smallest number of times that you would have to apply the operation above to get a string which contains each of characters `A`, `B` and `C` exactly n times. It can be shown that it is always possible to get such a string.

In addition, find a sequence of operations of the smallest possible length. If there are many such sequences, you can output any of them.

Input

The first line of input contains a single integer n ($1 \le n \le 3 \cdot 10^5$).

The second line of the input contains a string S of length $3n$, consisting of the characters `A`, `B` and `C`.

Output

In the first line print the minimum number of operations k.

In the i-th of the next k lines print 2 integers l_i, r_i and a character c_i ($1 \le l_i \le r_i \le 3n$, $c_i \in \{\texttt{A}, \texttt{B}, \texttt{C}\}$), denoting that in the i-th operation you will replace each of the characters $S_{l_i}, S_{l_i+1}, \ldots, S_{r_i}$ with c_i.

If there is more than one solution with a minimum number of operations, you can print any one of them.

Examples

standard input	standard output
1 AAA	2 2 3 B 3 3 C
1 CAB	0
3 ABABCABAB	1 1 2 C

Note

In the first sample, the string will undergo the following transformations:

`AAA` $\rightarrow$ `ABB` $\rightarrow$ `ABC`.

In the second sample, the string already contains exactly one `A`, one `B` and one `C`.

In the third sample, the string will undergo the following transformation:

`ABABCABAB` $\rightarrow$ `CCABCABAB`. Now, it contains each letter 3 times.