Almost Equal Strings

locked

We define two strings A and B as *almost equal* if and only if they have the same length and they differ on at most one position.

You are given a string S of length N and an integer Q. You have to perform Q queries on S. Each query consists of four integers, i, j, k, and l. For each such query, your task is to decide if the substrings $S[i, j]$ and $S[k, l]$ are almost equal.

Input Format

In the first line there is one integer N, denoting the length on the input string S. In the second line there is a string S, consisting of letters *a* and *b* only. In the third line there is one integer Q, denoting the number of queries. Q lines follow. Each of them represents one query and consists of four integers, i, j, k, and l, denoting the substrings for which you have to perform the query.

Constraints

- $1 \leq N \leq 10^6$
- S consists only of letters {a, b}
- $1 \leq Q \leq 10^5$
- $1 \leq i \leq j \leq N$
- $1 \leq k \leq l \leq N$

Output Format

Output exactly Q lines. In the i^{th} of them print *"SIMILAR"* if the substrings corresponding to this query differ by at most one character. Otherwise, print *"DIFFERENT"*.

Sample Input

```
10
abbaabbaab
3
1 2 9 10
1 3 8 10
1 4 7 10
```

Sample Output

```
SIMILAR
SIMILAR
DIFFERENT
```

Explanation

- In the first query, the correspondings substrings, $S[1, 2]$ and $S[9, 10]$, are equal.
- In the the second query, $S[1, 3] =$ *"abb"*, while $S[8, 10] =$ *"aab"*, so the differ only on one possition, hence they are almost equal.
- In the third query, $S[1, 4] =$ *"abba"*, while $S[7, 10] =$ *"baab"* and they differ on all 4 positions, so they are not almost equal.