C. Swap Letters

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Monocarp has got two strings s and t having equal length. Both strings consist of lowercase Latin letters "a" and "b".

Monocarp wants to make these two strings s and t equal to each other. He can do the following operation any number of times: choose an index pos_1 in the string s, choose an index pos_2 in the string t, and swap s_{pos_1} with t_{pos_2}.

You have to determine the minimum number of operations Monocarp has to perform to make s and t equal, and print any optimal sequence of operations — or say that it is impossible to make these strings equal.

Input

The first line contains one integer n $(1 \le n \le 2 \cdot 10^5)$ — the length of s and t.

The second line contains one string s consisting of n characters "a" and "b".

The third line contains one string t consisting of n characters "a" and "b".

Output

If it is impossible to make these strings equal, print -1.

Otherwise, in the first line print k — the minimum number of operations required to make the strings equal. In each of the next k lines print two integers — the index in the string s and the index in the string t that should be used in the corresponding swap operation.

Examples

input (Copy)
```
4
abab
aabb
```
output (Copy)
```
2
3 3
3 2
```

input (Copy)
```
1
a
b
```
output (Copy)
```
-1
```

input (Copy)
```
8
babbaabb
abababaa
```
output (Copy)
```
3
2 6
1 3
7 8
```

Note

In the first example two operations are enough. For example, you can swap the third letter in s with the third letter in t. Then s = "abbb", t = "aaab". Then swap the third letter in s and the second letter in t. Then both s and t are equal to "abab".

In the second example it's impossible to make two strings equal.

- Tutorial (en)