

2376 - I2P(I) 2021_Chen_final

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Clarification

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Overview

Problem ▾

13243 - AI Composer

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Description

I want my singing to bring happiness to everyone.

— Vivy

Vivy is a songstress AI, who put on a performance at the amusement park NiaLand in front of a small audience. Her duty is to make every happy with my singing. After she meets a cube AI, Matsumoto, who came from 100 years into the future, her centennial journey begins...

However, she's still a songstress AI, whatever Matsumoto asks her to do, her duty never change: to make every happy with her singing. Therefore, she wants to create her own song.

After a lot of effort, she finally compose the melody of her song, but she doesn't have any idea about the lyrics. You are a copy-paste AI, and you're asked to help her fill the lyrics in.

You've searched a bunch of lyrics along with its melody. What you need to do is to copy the lyrics to the corresponding melody that Vivy creates. Can you help her?

You will be given two strings s and t , the length of which is n and m , respectively. The strings contain only lowercase letters (i.e. a-z).

You can copy any number of any substring of s , and you can reverse the substrings. Your task is to reconstruct string t with the copied substrings of s .

- A substring of a string is a consecutive segmentation of a string. For example, cde is a substring of $bcdefg$, bde is not. And we call cde substring $[2, 4]$ of string $bcdefg$.
- The reversed substring is a substring that been reversed. For example, edc is a reversed substring of $bcdefg$. And we call edc reversed substring $[4, 2]$ of string $bcdefg$.

For simplicity, we want the number of substrings as small as possible.

For example, the first case:

```
3
xyz
6
xyzyx
```

We can slice a substring $[1, 3]$ of s (xyz) and a reversed substring $[3, 1]$ of s (zyx) and reconstruct the desired string t , so the minimum number of substrings is 2.

Note that although we can slice $[1, 2]$, $[3, 3]$, and $[3, 1]$ to get the string t , the number of substrings is not minimum.

Input

The first line is an integer T , indicates T testcases below.

For each testcase, there are n , s , m , t line by line, respectively.

$1 \leq T \leq 20$.

$n = |s|$, $m = |t|$, $1 \leq n, m \leq 3000$.

Output

For the first line of each testcase, output the minimum number of substrings.

For the next several lines, each line output the interval l and r of substrings, separated by space.

- l and r are the left and right boundaries of a substring. For usual substrings, output $l \leq r$, and $l \geq r$ for reversed substrings. Please refer to sample input and output.

If there are multiple answers, you may output any of them. For example, both slices $[3, 2]$, $[9, 8]$, $[3, 6]$, $[10, 10]$ and slices $[3, 1]$, $[8, 8]$, $[3, 6]$, $[10, 10]$ are acceptable for the second testcase, you can output any of them.

Sample Input

Download (data:text/plain;charset=utf-8,3%0A3%0Axyz%0A6%0Axyzyx%0A10%0Aabyaccygax%0A9%0Aybagyaccx%0A5%0Aabcde%0A10%0Afgijklmno%0A)

```
3
3
xyz
6
xyzyx
10
abyaccygax
9
ybagyaccx
5
abcde
10
fgijklmno
```

Sample Output

Download (data:text/plain;charset=utf-8,2%0A1%203%0A3%201%0A4%0A3%202%0A9%208%0A3%206%0A10%2010%0A-1%0A)

```
2
1 3
3 1
4
3 2
9 8
3 6
10 10
-1
```

Discuss