

## 526 String Distance and Transform Process

String Distance is a non-negative integer that measures the distance between two strings. Here we give the definition. A transform list is a list of strings, where each string, except for the last one, can be changed to the string followed by adding a character, deleting a character or replacing a character. The length of a transform list is the count of strings minus 1 (that is the count of operations to transform these two strings). The distance between two strings is the length of a transform list from one string to the other with the minimal length. You are to write a program to calculate the distance between two strings and give the corresponding transform list.

### Input

Input consists a sequence of string pairs, each string pair consists two lines, each string occupies one line. The length of each string will be no more than 80.

### Output

For each string pair, you should give an integer to indicate the length between them at the first line, and give a sequence of command to transform *string1* to *string2*. Each command is a line lead by command count, then the command. A command must be

Insert *pos,value*

Delete *pos*

Replace *pos,value*

where *pos* is the position of the string and *pos* should be between 1 and the current length of the string (in 'Insert' command, *pos* can be 1 greater than the length), and value is a character. Actually many command lists can satisfy the request, but only one of them is required.

Print a blank line between consecutive datasets.

### Sample Input

```
abcac
bcd
aaa
aabaaaa
```

### Sample Output

```
3
1 Delete 1
2 Replace 3,d
3 Delete 4

4
1 Insert 1,a
2 Insert 2,a
3 Insert 3,b
4 Insert 7,a
```