16 Palindrome Parade

7 points

Introduction

Welcome to the Palindrome Parade, where words of all shapes and sizes march together, celebrating their symmetrical beauty! Your task is to organize the parade by creating a special merger for this grand event.

Given two lists, each filled with palindromic and non-palindromic words, the merging process is unique: we want to merge the lists based on whether each word is a palindrome or not. Palindromic words lead the parade, followed by non-palindromic words. So, keeping the original order from the lists, the parade will move as: first palindromic words from first list, followed by palindromic words from second list, then non-palindromic words from first list and finally non-palindromic words from second list.

Some words can appear in both lists. So, be careful that they do not appear repeated along the merged parade. Only the first appearance of a word is allowed.

Can you write a program to organize the Palindrome Parade?

Input

The input is composed by several lines: the first line contains the number of elements of first list. Followed by the list of words of first list. Next line will contain the number of elements of second list. Finally, there is the list of words from second list.

Output

The output is composed by several lines with a single word per line which considers the original order of appearance. First palindromic words from first list, followed by palindromic words from second list, then non-palindromic words from first list and finally non-palindromic words from second list.

Example 1

Input

```
6
radar
apple
deed
banana
level
civic
8
orange
radar
noon
kayak
grape
table
hello
grape
```

Output

```
radar
deed
level
civic
noon
kayak
apple
banana
orange
grape
table
hello
```