



Problem L. First Work

Alice is a proficient programmer and she always finishes her tasks very quickly at work. Getting bored by her jobs, she often tries to make her tasks more complicated and difficult to spend the remaining time solving those. Today, her boss assigns her a simple that sort an array of words lexicographically. As always, this task is totally simple and meaningless to her. After completing it, she questions herself that, if a word can come first after sorting by changing the order of alphabet characters?

She starts with a list of words “acm”, “mcc”, “amc”, “ama”, “acmma”. She found that, “ama” can come first if she swaps ‘m’ and ‘c’ in the alphabet order. Now, she decides to write a program that finds every string which can come first after reorder the alphabet.

Unfortunately, this problem is too difficult for her so she asks for your help.

Input

The first line shows the number of words in her list N ($1 \leq N \leq 3 \times 10^4$)

The next N lines specify her words. Length of each word doesn’t exceed 10 characters with all lowercase characters. It is guarantee that there is no duplicate word in her list.

Output

In the first line, print the number of words P that can come first.

In the next P lines, you should list all the words that can come first by making swaps in the alphabet table. You should list the words in the order that they come in the input.

Examples

Standard Input	Standard Output
5 acm mcc amc ama acmma	3 acm mcc ama