JAVA CASE STUDY

Problem

BOOBLE is a search engine which consist of a search bar and space for 3 suggestions. The suggestions work as follows: Suppose a character is typed in the search bar than the 3 most searched strings starting with that character appear in the suggestion list. If less than 3 strings are searched starting by that character than suggestion displays **null**. For Example: If the strings **apple** and **ability** are searched 5 and 3 times respectively and then the character **a** is typed in the search bar than the 3 suggestions will be **apple**, **ability** and **null** from top to bottom.

You have to process **q** queries of the type

1 String → It means that the particular string is searched in the search engine.

2 Character → It means that this particular character is typed in the search bar and you have to answer three suggestions from top to bottom that will appear in the suggestion list. **If more than one string is searched the same number of time than you have to print them in lexicographic order** i.e. the one which would come in dictionary first should be printed first.

Input:

The first line of the input file contains the single integer **q** denoting the number of queries to be processed. Next q lines contains the queries to be processed in the above mentioned format.

Output:

For each query of type 2, the output should contain 3 space separated strings, the answer to the query.

Constraints:

1<=q<=200000.

The length of string in type 1 query is 10.

Sample Input	Sample Output
6 1 xcaysqugqb 2 k 1 fmykdfsubd 1 xcaysqugqb 2 x 2 f	null null null xcaysqugqb null null fmykdfsubd null null