

# Problem REACHABLE: Reachable Symbols

Assume you are working for Chomsky Inc., a company developing contextfree grammars for their customers. The last programmer you fired was really bad. His grammars contain a lot of rules that can not be used.

A contextfree rule consists of a left hand side containing one symbol and a right hand side containing one to four hundred symbols. The start symbol of all grammars is  $s$ . A symbol is reachable if it occurs in any derivation starting with the start symbol  $s$ .

You are given a big grammar containing up to four thousand rules. Your task is to find all the symbols in the grammar that are reachable from the start symbol  $s$ .

## Input

In the first line the number of rules is given. Then each rule is given in one line. The symbols of the rule are separated with one space. The first symbol is the left hand side, all following symbols form the right hand side of a rule. All symbols are words formed of lower case letters  $a - z$ . The grammar given in the example input generates the language  $ab, aabb, aaabbb, \dots$ . It contains three unreachable rules starting from  $s$ :  $x y z$ ,  $z no no$  and  $y not better$ .

## Output

The output should contain all symbols reachable from  $s$  in the given grammar. No difference is made between terminal and nonterminal symbols. The symbols are ordered lexicographically and separated with space. The output ends with newline. In the example the symbols  $a, b, s$  are reachable from  $s$ .

### Sample Input 1

```
5
x y z
s a s b
z no no
s a b
y not better
```

### Sample Output 1

```
a b s
```