## Satisfiability P93741_en

Write a program to find all the solutions to a set of $m$ three–literal clauses $c_1, \ldots, c_m$ in conjunctive normal form.

For instance, $\{a = true, b = false, c = true, d = true\}$ is a possible solution for the three clauses

$$a \text{ or } b \text{ or } c, \quad \text{not } a \text{ or } b \text{ or } c, \quad b \text{ or not } c \text{ or } d.$$

As another example, $\{a = true, b = false\}$ is a possible solution for the clause

$$b \text{ or not } a \text{ or } a.$$

Stricktly speaking, this clause does not have three literals (in fact it is equal to *true*, which has no literals at all), but in this exercise it is allowed to have repeated literals in the same clause.

### Input

Input consists of a natural number $1 \leq n \leq 20$, followed by a natural number $m > 0$, followed by $c_1, \ldots, c_m$. The names of the variables are the first $n$ lowercase letters, and all of them appear in the input at least once. A negative literal is indicated by a minus symbol in front of the variable.

### Output

Print all the possible solutions of the set of clauses. The literals of each solution must appear in alphabetical order. If there is no solution, print a hyphen.

### Information about the checker

You can print the solutions to this exercise in any order.

### Sample input 1

```
4
7
a b c
-a -d c
a c c
-c b -b
a -b -c
-b -c -d
-d -d -d
```

### Sample output 1

```
a b c -d
a b -c -d
a -b c -d
a -b -c -d
-a -b c -d
```

### Sample input 2

```
3
5
c c a
a b -c
-a b b
```

```
-b -b -b
-c -c -b
```

**Sample output 2**

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## Problem information

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