In kindergarten, children are learning how to color. They have several colors available and each receives a different drawing that requires different colors. For each drawing it is specified with what colors each area should be colored. Unfortunately, due to the funding cuts for pencils, some colors are missing, and some of the drawings will remain incompletely colored. The children, being inventive, learned that they can get some colors using combinations of the ones they already have. However, in some cases, this trick is not enough either.

Requirement

Given the colors available to the children, as well as the types of drawings and colors needed for each drawing, write a program that determines which children can finish the coloring. As they learned from art class, they can combine colors to get some of the ones they don't have, like this:

- red + blue = purple
- yellow + red = orange
- yellow + blue = green
- red + yellow + blue = brown

Input Data

On the first line there is a positive integer **C** representing the number of colors available. On the second line there are the **C** available colors, separated by one or more spaces. From the third line to the end of the input stream are the information about each child and drawing: the child's name, the number N_i of colors required for the drawing, then N_i colors, all separated by one or more spaces.

Output Data

The names of the children who can finish the drawing, each name on a new line, in the order in which they appear in the input stream, will be displayed on the standard output stream.

MAKE SURE to carefully meet the requirement of the problem: the display of the results must be done EXACTLY in the way indicated! In other words, nothing in addition to the problem requirement will be displayed on the standard output stream; as a result of the automatic evaluation, any additional character displayed, or a different display than the one indicated, will lead to an erroneous result and therefore to be "Rejected".

Restrictions

1. The names of children and colors are made up of a single word.
2. $0 < \mathbf{C} <= 10$
3. $0 < \mathbf{N_i} <= 10$
4. The number of children is in interval [0; 10]
5. **Warning**: According to the chosen programming language, the file containing the code must have one of the extensions .c, .cpp, .java, .py or .m. The web editor does not add automatically these extensions and the lack of the extensions leads to the impossibility of program compilation!
6. **Warning:** For those using Matlab, it is recommended that the source file be named <name>.m

Examples

Input	Output	Explanation
3 pink green blue mihai 1 blue andra 1 pink	mihai andra	The "blue" color required for Mihai is in the list of available colors. The "pink" color required by Andrei is in the list of available colors. Both children can finish the drawing, so both their names are displayed.
4 pink blue red yellow marin 4 blue green pink orange ion 5 cyan green blue red yellow marina 2 red green	marin marina	Marin can create orange from red and yellow and green from blue and yellow, so he can finish his drawing. Ion, on the other hand, can't get the "cyan" color so he can't finish his drawing.

Working time: 150 minutes