Problem E. Perfect Scoreboard

TimeLimit: 0.5 seconds
MemoryLimit: 256 megabytes

There are n teams participating in a contest that has n problems. For each team, you are given the time it takes for them to solve each problem.

You need to decide the problem-solving order for each team (i.e., which problem they should solve first, next, and so on). After deciding the problem-solving order, teams must solve the problem in the given order; they cannot switch to another problem before finishing the current one. After completing a problem, the team should immediately start on the next one.

Determine whether it is possible to assign problem-solving orders for all teams so that the scoreboard becomes a **perfect scoreboard**.

	A	B	C	D
Team 1	6 1 try	10 2 tries	24 3 tries	15 1 try
Team 2	7 1 try	8 1 try	17 2 tries	20 1 try
Team 3	8 1 try	10 1 try	12 1 try	19 1 try
Team 4	5 1 try	9 2 tries	19 1 try	23 1 try

An example of a perfect scoreboard.

A **perfect scoreboard** means that each team achieves exactly one first solve, and each problem's first solve is achieved by a different team.

A team is considered to have achieved a first solve for a problem if it solves the problem at the earliest time during the contest. If multiple teams solve it at the same earliest minute, they all are considered to have achieved a first solve.

You may assume the contest duration is long enough for every team to solve all problems.

Input

The first line contains a single integer n — The number of teams (and also the number of problems).

Each of the next n lines contains n integers a_{ij}. The j-th integer on the i-th line represents the time (in minutes) that team i takes to solve the j-th problem, where the problems are labeled A, B, C,$\cdots$, up to the n-th one.

- $1 \leq n \leq 9$
- $1 \leq a_{ij} \leq 1000$

Output

If it is impossible to assign solving orders such that every team achieves exactly one first solve, print "`Can't make a perfect scoreboard`".

Otherwise, print "`It's a perfect scoreboard!`", followed by n lines, where the i-th line describes the problem-solving order for team i from earliest to latest.

If there are multiple solutions, you can print any of them.

Examples

standard input	standard output
3 1 2 3 2 3 1 3 2 1	It's a perfect scoreboard! ACB BAC CAB
5 1 2 3 4 5 2 3 4 5 6 5 1 2 3 4 6 7 1 1 2 9 6 3 2 4	It's a perfect scoreboard! ACDEB BACDE CADEB DABCE EABCD
2 1 1 2 2	Can't make a perfect scoreboard
4 50 300 300 300 1 50 5 100 100 100 100 1 1 30 30 100	It's a perfect scoreboard! ABCD BADC CABD DABC