Problem H. Perfect Lodging

Input file:	`perfect.in`
Output file:	`perfect.out`
Time limit:	3 seconds
Memory limit:	256 megabytes

Every year Giggle company arranges the sponsored celebration event for the winners of the International Laughing Contest. The participants are invited to visit Giggle office in a nice Swamp Smell town.

And every year the event manager Serge faces the same problem: he must lodge $2n$ participants in n twin rooms. When filing a travel request each participant indicates the list of other participants that he would agree to live in one room with.

Before making arrangements, Serge needs to divide all participants to pairs, so that each participant lives in a room with the one from the list he specified in his travel request.

Help him to find out whether it is possible.

Input

The first line of the input file contains $2n$ — the number of participants ($2 \le 2n \le 200$). The following $2n$ lines describe participant preferences, each line starts with k_i — the number of other participants, the i-th one would agree to live with, followed by k_i integer numbers — the numbers of the corresponding participants. All participants are numbered from 1 to n in order they are given in the input file.

Output

Output "`YES`" if it is possible to lodge all participants with respect to their requests, or "`NO`" if it is not.

Example

perfect.in	perfect.out
4 2 2 3 2 3 4 3 1 2 4 3 1 2 3	YES
4 1 2 1 3 1 4 1 1	NO

In the first example Serge can, for example, lodge participants 1 and 3 together, and 2 and 4 together.