B. Finding Team Member

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

There is a programing contest named SnakeUp, $2n$ people want to compete for it. In order to attend this contest, people need to form teams of exactly two people. You are given the strength of each possible combination of two people. All the values of the strengths are **distinct**.

Every contestant hopes that he can find a teammate so that their team's strength is as high as possible. That is, a contestant will form a team with highest strength possible by choosing a teammate from ones who are willing to be a teammate with him/her. More formally, two people A and B may form a team if each of them is the best possible teammate (among the contestants that remain unpaired) for the other one.

Can you determine who will be each person's teammate?

Input

There are $2n$ lines in the input.

The first line contains an integer n ($1 \le n \le 400$) — the number of teams to be formed.

The i-th line ($i > 1$) contains $i - 1$ numbers $a_{i1}, a_{i2}, \ldots, a_{i(i-1)}$. Here a_{ij} ($1 \le a_{ij} \le 10^6$, all a_{ij} are distinct) denotes the strength of a team consisting of person i and person j (people are numbered starting from 1.)

Output

Output a line containing $2n$ numbers. The i-th number should represent the number of teammate of i-th person.

Examples

input
2 6 1 2 3 4 5
output
2 1 4 3

input
3 487060 3831 161856 845957 794650 976977 83847 50566 691206 498447 698377 156232 59015 382455 626960
output
6 5 4 3 2 1

Note

In the first sample, contestant 1 and 2 will be teammates and so do contestant 3 and 4, so the teammate of contestant $1, 2, 3, 4$ will be $2, 1, 4, 3$ respectively.