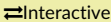


Concentration Game

Time limit: 1000 ms
Memory limit: 256 MB



Concentration is a card game in which a set of cards are laid face down on a surface and two cards are flipped face up over each turn. The objective of the game is to turn over pairs of matching cards.

There will be $2N$ cards of N different types labelled with integers from 1 to N .

Interaction

You should read an integer N .

A move consists in choosing two distinct card indices i_1 and i_2 and revealing them. To make a move, print a line with both indices separated by a space between them (and don't forget to flush the output!). If these cards have the same value written on them, the interactor will reply with `MATCH` and eliminate the cards from the surface. Otherwise, it will reply with two integers, the first representing the value of i_1 and the second representing the value of i_2 .

If at any point in time the interactor decides you've made an invalid move, it will print `-1` and exit. You must read this value and exit right away, otherwise you might get a verdict which does not properly reflect your invalid move.

You must print `-1` after you have decided to not make any more moves.

Constraints and notes

- $1 \leq N \leq 10^3$
- You are allowed at most $2N$ moves
- You may not ask to make a move with a card that has already been removed from the surface
- The card indices **DO NOT** change after other cards are removed from the surface

Interaction	Explanation
5	The initial order for the cards is [3, 4, 3, 4, 1, 2, 5, 5, 1, 2].
3 4	1 2
MATCH	2 4
MATCH	1 3
1 2	9 10
MATCH	5 9
MATCH	8 7
MATCH	10 6
	-1