Problem 3 - Memory game

The problem for exam preparation for the [Programming Fundamentals Course @SoftUni](.).
Submit your solutions in the SoftUni judge system at https://judge.softuni.org/Contests/Practice/Index/2517#1.

Write a program that recreates the **Memory game**.

On the first line, you will **receive a sequence of elements**. Each element in the sequence **will have a twin**. Until the player receives **"end"** from the console, you will receive **strings with two integers** separated by a space, representing **the indexes** of elements in the sequence.

If the player **tries to cheat** and enters **two equal indexes** or indexes which are **out of bounds of the sequence**, you should **add** two matching elements at the middle of the sequence in the following format:

"-{number of moves until now}a"

Then print this message on the console:

"Invalid input! Adding additional elements to the board"

Input

- On the **first** line**,** you will receive a **sequence of elements.**
- On the **following** lines, you will receive **integers** until the command **"end".**

Output

- Every time the player hit **two matching elements**, you should **remove** them from the sequence and **print** on the console the following message:

  "Congrats! You have found matching elements - {element}!"

- If the player hit **two different elements**, you should **print** on the console the following message:

  "Try again!"

- If the player hit **all matching elements** before he receives **"end"** from the console, you should **print** on the console the following message:

  "You have won in {number of moves until now} turns!"

- If the player receives **"end" before he hits all matching elements**, you should **print** on the console the following message:

  "Sorry you lose :(

  {the current sequence's state}"

Constraints

- **All elements in the sequence will always have a matching element.**

Examples

Input	Output
1 1 2 2 3 3 4 4 5 5	Congrats! You have found matching elements - 1!

1 0 -1 0 1 0 1 0 1 0 end	Invalid input! Adding additional elements to the board Congrats! You have found matching elements - 2! Congrats! You have found matching elements - 3! Congrats! You have found matching elements - -2a! Sorry you lose :(4 4 5 5

Comment
1) 1 0 1 1 2 2 3 3 4 4 5 5 –> 1 = 1, equal elements, so remove them. Moves: 1 2) -1 0 -1 is invalid index so we add additional elements 2 2 3 3 -2a -2a 4 4 5 5, Moves: 2 3) 1 0 2 2 3 3 -2a -2a 4 4 5 5 -> 2 = 2, equal elements, so remove them. Moves: 3 4) 1 0 3 3 -2a -2a 4 4 5 5 -> 3 = 3, equal elements, so remove them. Moves: 4 5) 1 0 -2a -2a 4 4 5 5 -> -2a = -2a, equal elements, so remove them. Moves: 5 6) You receive the end command. There are still elements in the sequence, so the player loses the game. Final state - 4 4 5 5

a 2 4 a 2 4 0 3 0 2 0 1 0 1 end	Congrats! You have found matching elements - a! Congrats! You have found matching elements - 2! Congrats! You have found matching elements - 4! You have won in 3 turns!

a 2 4 a 2 4 4 0 0 2 0 1 0 1 end	Try again! Try again! Try again! Try again! Sorry you lose :(a 2 4 a 2 4

JS Examples

Input	Output
["1 1 2 2 3 3 4 4 5 5", "1 0", "-1 0", "1 0", "1 0", "1 0", "end"	Congrats! You have found matching elements - 1! Invalid input! Adding additional elements to the board Congrats! You have found matching elements - 2! Congrats! You have found matching elements - 3! Congrats! You have found matching elements - -1a! Sorry you lose :(4 4 5 5

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Comment

1)
1 0
1 1 2 2 3 3 4 4 5 5 –> 1 = 1, equal elements, so remove them. Moves: 1
2)
-1 0
-1 is invalid index so we add additional elements
2 2 3 3 -2a -2a 4 4 5 5, Moves: 2
3)
1 0
2 2 3 3 -2a -2a 4 4 5 5 -> 2 = 2, equal elements, so remove them. Moves: 3
4)
1 0
3 3 -2a -2a 4 4 5 5 -> 3 = 3, equal elements, so remove them. Moves: 4
5)
1 0
-2a -2a 4 4 5 5 -> -2a = -2a, equal elements, so remove them. Moves: 5
6)
You receive the end command.
There are still elements in the sequence, so the player loses the game.
Final state - 4 4 5 5

["a 2 4 a 2 4", "0 3", "0 2", "0 1", "0 1", "end"]	Congrats! You have found matching elements - a! Congrats! You have found matching elements - 2! Congrats! You have found matching elements - 4! You have won in 3 turns!
["a 2 4 a 2 4", "4 0", "0 2", "0 1", "0 1", "end"]	Try again! Try again! Try again! Try again! Sorry you lose :(a 2 4 a 2 4