Weekly Challenge 1

Leaps and Bounds

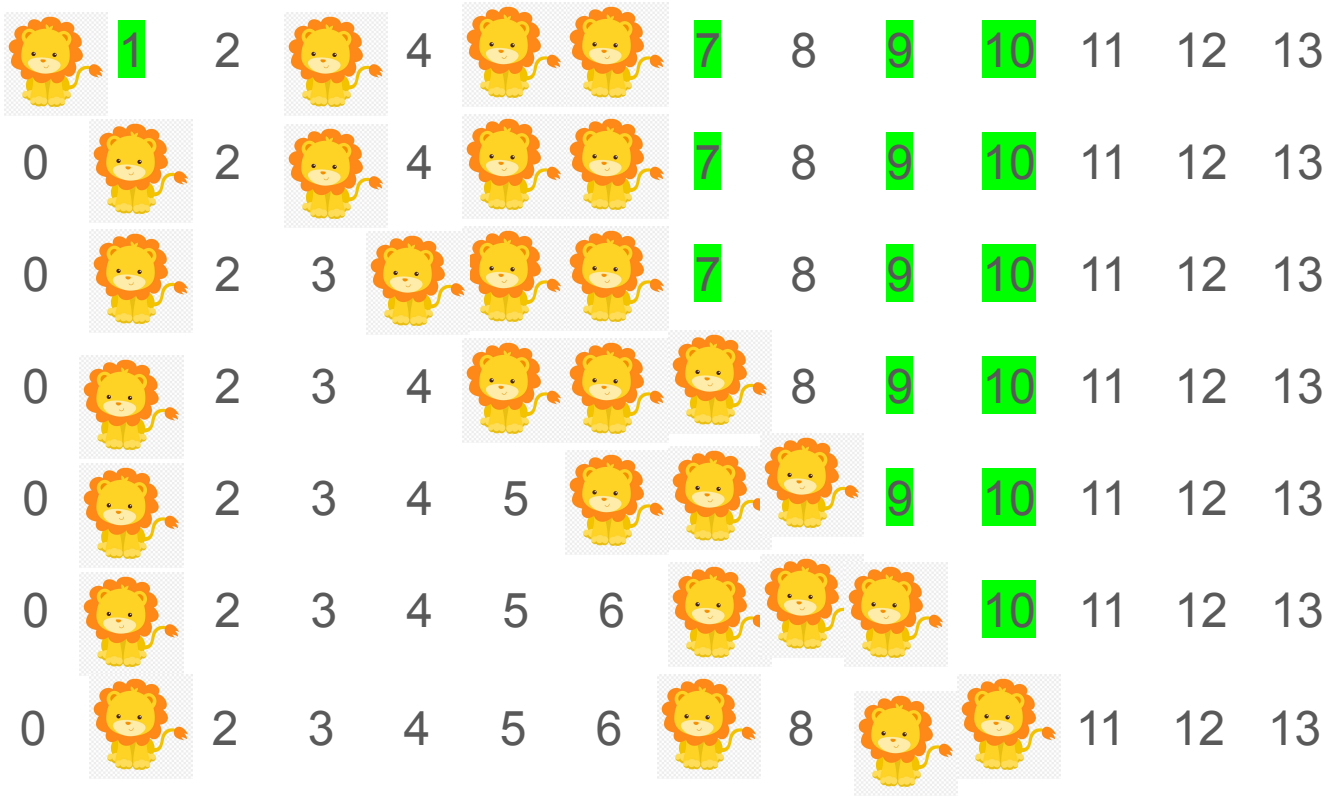
Statement

N  are standing on the number line playing leapfrog.

They want to have a  standing on each of N spots on the number line.

Is it possible for this to occur?

Example: Possible



Example

This example is impossible because lions can’t go backwards, so either 1 or 2 will not have a lion on it.

Bonus Problem

If it is possible, what is the minimum number of moves to let all the lions get to the spots they would like to get to?

Input

On a line, the number N.

On the next line, N space separated integers: the positions of the lions, space separated (less than 1000). No 2 lions are on the same position

On the last line, N space separated integers: the positions the lions wish to be, space separated (less than 1000).
The last example could be given as

4

4 1 6 5

10 9 1 7

Output

If it’s not possible, output “NO” without quotes.

If it is possible, output “YES” or a number equal to the minimum number of moves it would take.

Submitting

Checker: https://forms.gle/mbH6aJxX5e3crr1B8

Input: https://github.com/OSUACM/Weekly_Events/blob/master/2019-09-06/LeapsAndBoundsInput

Next Week: CP lecture! (By Alex)

Next meeting is on Tuesday (so soon!). It starts at 5:30 in Hitchcock 035.

The lecture will be about game theory. It’s mostly intuition but you will learn basic DP on the way.