PROBLEM 3
TSP

Input File: `tspin.txt`
Output File: `tspout.txt`

Time and Memory Limits: 1 second, 1 GB

Congratulations! You got a job working as a Tomato Salesperson (TSP) for the next N days. Your boss has given you two requirements:

- On the ith day, you must sell at least L_i and at most R_i tomatoes $(L_i \leq R_i)$.
- Each day, you must sell as many tomatoes as you did the previous day, or more.

Is it possible to meet these requirements?

Input

- The first line of input contains the integer N.
- The second line of input contains N integers describing the minimum number of tomatoes you must sell each day. The ith of these is L_i.
- The third line of input contains N integers describing the maximum number of tomatoes you must sell on each day. The ith of these is R_i.

Output

If it is possible to meet the requirements, your program must output YES. Otherwise, it must output NO.

Sample Input 1	**Sample Input 2**	**Sample Input 3**
4	4	3
1 3 4 3	3 1 2 1	10 15 65
8 4 7 5	3 2 2 4	10 15 65

Sample Output 1	**Sample Output 2**	**Sample Output 3**
YES	NO	YES

Explanation

In the first sample case, you can choose to sell two tomatoes on the first day, four tomatoes on the second day, four tomatoes on the third day, and five tomatoes on the fourth day.

L_i	R_i	Tomatoes sold
1	8	2
3	4	4
4	7	4
3	5	5

Note that there are other ways to meet the requirements, such as 1 3 4 4.

In the second sample case, if you sell three tomatoes on the first day, the requirements dictate that you must sell three or more tomatoes on the second day. This means that you cannot possibly satisfy the requirement of selling at most two tomatoes on the second day, so the output is NO.

In the third sample case, you can choose to sell 10 tomatoes on the first day, 15 tomatoes on the second day and 65 tomatoes on the third day.

L_i	R_i	Tomatoes sold
10	10	10
15	15	15
65	65	65

Subtasks & Constraints

For all subtasks:

- $2 \le N \le 100\,000$.
- $1 \le L_i \le R_i \le 1\,000\,000\,000$ for all i.

Additionally:

- For Subtask 1 (30 marks), $L_i = R_i$ for all i.
- For Subtask 2 (30 marks), $N = 2$ and $R_i \le 100$ for all i.
- For Subtask 3 (40 marks), no special constraints apply.