

Harry Potter has damaged his magic wand in a fight with Lord Voldemort. He has decided to get a new wand in Olivander's wand shop. On the floor of the shop, he saw N wands and N wand boxes. The lengths of the wands are, respectively, $X_1, X_2 \dots X_n$, and the box sizes are $Y_1, Y_2 \dots Y_n$. A wand of length X can be placed in a box of size Y if $X \leq Y$. Harry wants to know if he can place all the wands in boxes so that each box contains exactly one wand.

Help him solve this difficult problem.

INPUT

The first line of input contains the positive integer N ($1 \leq N \leq 100$), the number from the task.

The second line contains N positive integers X_i ($1 \leq X_i \leq 10^9$), the numbers from the task.

The third line contains N positive integers Y_i ($1 \leq Y_i \leq 10^9$), the numbers from the task.

OUTPUT

If Harry can place all the wands in boxes, output "DA" (Croatian for yes), otherwise output "NE" (Croatian for no).

SCORING

In test cases worth 60% of total points, it will hold $N \leq 9$.

SAMPLE TESTS

input

3
7 9 5
6 13 10

output

DA

input

4
5 3 3 5
10 2 10 10

output

NE

input

4
5 2 3 2
3 8 3 3

output

DA

Clarification of the first test case:

Harry can place the wands in boxes. For example, he can place the wand of length 5 in a box of size 6, wand of length 7 in a box of size 13, and wand of length 9 in a box of size 10.

Clarification of the second test case:

Harry can't place the wands in boxes because the box of size 2 can't fit any of the wands.