Problem B – Blackboard Game

Carlinhos and Equalizer are playing a game. The game begins with $3N$ elements, which are integer numbers, written on a blackboard. Then, for N rounds, the following two steps are repeated.

1. Carlinhos, the first player, selects an unchosen element and marks it with a red circle.
2. Equalizer, the second player, picks two unchosen elements, marks one of them with a blue square, and erases the other from the blackboard.

At the end of these rounds, the blackboard contains N red-marked elements and N blue-marked elements, with no moves left. The game concludes with a clear winner: if the sum of the red-marked elements differs from the sum of the blue-marked elements, Carlinhos emerges victorious; otherwise, Equalizer takes the win.

The figure below depicts the only possible outcome for the first sample. In this case Equalizer wins for sure, no matter how they play both sums will be equal to 25.



Carlinhos, feeling the game is imbalanced, seeks to determine whether he can secure a victory when both players play optimally. Can you help him with this task?

Input

The first line contains an integer N ($1 \leq N \leq 1000$).

The second line contains $3N$ integers $B_1, B_2, \ldots, B_{3N}$ ($-10^5 \leq B_i \leq 10^5$ for $i = 1, 2, \ldots, 3N$), representing the numbers initially written on the blackboard.

Output

Output a single line with the uppercase letter "`Y`" if Carlinhos can win the game and the uppercase letter "`N`" otherwise, assuming both players play optimally.

Sample input 1	**Sample output 1**
5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	N

Sample input 2	**Sample output 2**
2 1 2 4 8 16 32	Y

Explanation of sample 2:
Carlinhos wins no matter how he plays, since all subsets have distinct sums.

Sample input 3	**Sample output 3**
1 2 3 3	Y

Explanation of sample 3:
Carlinhos can win by picking the number 2. Notice that he would have lost if he picked a 3.