Problem I. Intervals

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	512 mebibytes

bobo draws n intervals on the axis, which are conveniently numbered by $1, 2, \ldots, n$. As an excellent mathematician, he managed to set all n intervals of length 10^6.

Then bobo carefully computes $I_{i,j}$, the length of the intersection of intervals i and j, and discards all intervals. However, bobo wants to check his calculations and he is eager to know whether the result **can be** correct.

In another word, determine if there exists n intervals of length 10^6 providing the same result.

Input

The first line contains an integer n ($1 \le n \le 1000$).

Each of the following n lines contains n integers $I_{i,1}, I_{i,2}, \ldots, I_{i,n}$ ($0 \le I_{i,j} \le 10^6$).

Since bobo knows math well, it is guaranteed that $I_{i,j} = I_{j,i}$ and $I_{i,i} = 10^6$.

Output

If for given $I_{i,j}$ it is possible to find at least one appropriate set of intervals, print "`Yes`". Otherwise, print "`No`".

Examples

standard input	standard output
3 1000000 500000 0 500000 1000000 500000 0 500000 1000000	Yes
3 1000000 500000 500000 500000 1000000 500000 500000 500000 1000000	No