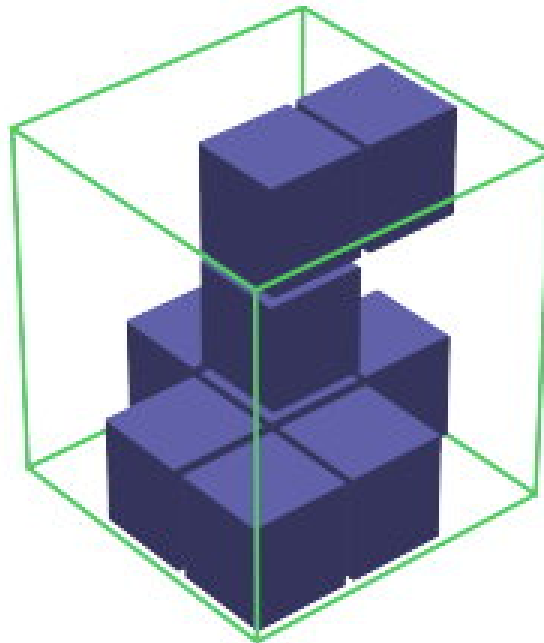


## Problem A. Axonometry

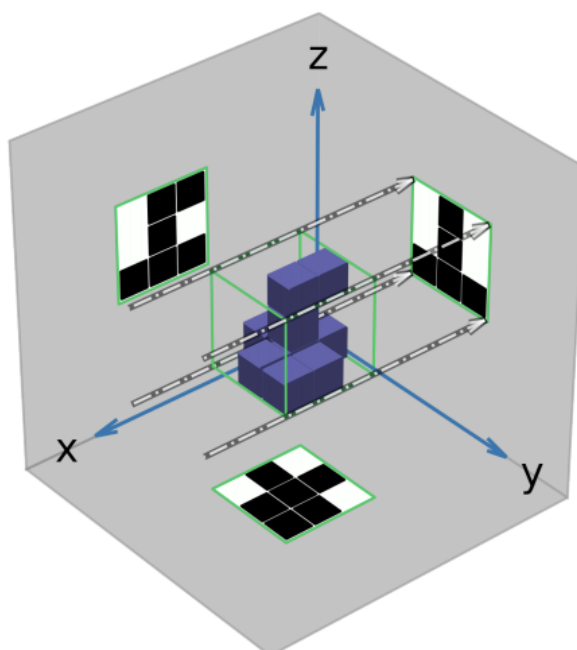
Input file: *standard input*  
Output file: *standard output*  
Time limit: 2 seconds  
Memory limit: 512 mebibytes

A friend of yours is an artist designing a crystal cubes with its side of integer length. Some of its regions are made opaque through an elaborate laser machining process. Each of the opaque regions is a cube of unit size aligned with integer coordinates.

Figure below depicts an art object as given in the Sample Input 1. Here, the green wires correspond to the edges of the crystal cube. The blue small cubes correspond to the cubic opaque regions inside the crystal.



Art objects are meant to enjoy the silhouettes of its opaque regions projected by three parallel lights perpendicular to its faces. Figure below depicts the cube and its three silhouettes.



Your job is to write a program that decides whether there exists an ICPC that makes the given silhouettes.

## Input

The first line of the input contains one integer  $n$  — the length of the edge of the cube, an integer between 1 and 100, inclusive.

The cube of size  $n$  makes three silhouettes of  $n \times n$  squares of dark and bright cells. Cells are dark if they are covered by the shadows of opaque unit cubes, and are bright, otherwise. The  $3n$  lines, each with  $n$  digits, starting from the second line of the input denote the three silhouettes of the cube, where ‘0’ represents a bright cell and ‘1’ represents a dark cell. At least one of the digits in the  $3n$  lines is ‘1’.

First comes the data for the silhouette on the  $yz$ -plane, where the first line  $s_1$  gives the cells of the silhouettes with the largest  $z$ -coordinate value. They are in the order of their  $y$ -coordinates. The following lines,  $s_2, \dots, s_n$ , give the cells with the decreasing values of their  $z$ -coordinates.

Then comes the data for the silhouette on the  $xz$ -plane, where the first line,  $t_1$ , gives the cells with the largest  $x$ -coordinate value, in the order of their  $z$ -coordinates. The following lines,  $t_2, \dots, t_n$ , give the cells with the decreasing values of their  $x$ -coordinates.

Finally comes the data for the silhouette on the  $xy$ -plane, where the first line,  $u_1$ , gives the cells with the largest  $y$ -coordinate value, in the order of their  $x$ -coordinates. The following lines,  $u_2, \dots, u_n$ , give the cells with the decreasing values of their  $y$ -coordinates.

## Output

Print “Yes” if it is possible to make an ICPC with the given silhouettes. Print “No”, otherwise.

## Examples

standard input	standard output
3 010 010 111 100 111 101 011 111 010	Yes
2 00 01 00 10 10 00	Yes
2 00 00 00 10 10 00	No
2 01 00 00 10 10 00	No