



# Problem C. LaLa and Lamp

Input file:	standard input
Output file:	standard output
Time limit:	3 seconds
Memory limit:	1024 megabytes

When LaLa laid down on her pet Leo's back to fall asleep, she noticed that the lamp is all messed up, which must have been the act of her sister LiLi.

The lamp can be modeled as a regular triangular grid where each cell contains a bulb which is either **on** or **off**.

LaLa wants to turn off the lamp (that is, set the state of all bulbs to off). LaLa can pick any of the three directions parallel to the side of a lamp, pick any row parallel to that direction, and then flip the state of all the bulbs in the row (on to off and off to on) with her magic. LaLa also could just walk over to the lamp and manually turn every bulb off, but she would prefer not to.

Write a program that determines whether LaLa can turn off the lamp with her magic.

### Input

The input is given in the following format:

N  $S_0$   $S_1$   $\vdots$   $S_{N-1}$ 

where N is the number of bulbs in a side of the lamp, and  $S_i$  is the binary string of length i+1 representing the initial states of bulbs in the *i*-th row, where the *j*-th character of  $S_i$  is '1' if and only if the *j*-th bulb is on.

The input satisfies the following constraint:

- N is an integer.
- $2 \le N \le 2000$

#### Output

If LaLa can turn off the lamp with magic, print a single string "Yes". Otherwise, print a single string "No". You may print each character in either case (lower or upper).

## Example

standard input	standard output
6	Yes
0	
00	
000	
0110	
00100	
000000	

## Note

The following illustrates a sequence of magic LaLa should cast to turn off the lamp given in the sample. Empty circles denote the bulbs that are off, yellow circles denote the bulbs that are on, and red line is the choosen row for magic.





