

COSC 1304: C Programming
Homework 4: Error Correction

Description:

A Boolean matrix has the parity property when each row and each column has an even sum, i.e. contains an even number of bits which are set. Here's a 4 x 4 matrix which has the parity property:

$$\begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 1 & 1 & 1 & 1 \\ 0 & 1 & 0 & 1 \end{bmatrix}$$

The sums of the rows are 2, 0, 4 and 2. The sums of the columns are 2, 2, 2 and 2.

In this homework, you are asked to write a program that reads in a matrix to a **multiple-subscripted array** and checks if it has the parity property.

Input:

The first line of each test case contains one integer n (n<100), representing the size of the matrix. On the next n lines, there will be n integers per line. No other integers than 0 and 1 will occur in the matrix.

Output:

For the matrix in the input, print one line. If the matrix already has the parity property, print "Yes", print "No" otherwise.

Sample Input I:

```
4
1 0 1 0
0 0 0 0
1 1 1 1
0 1 0 1
```

Sample Output I:

```
Yes
```

Sample Input II:

```
4
1 0 1 0
0 1 1 0
1 1 1 1
0 1 0 1
```

Sample Output II:

```
No
```

Due Date:

See TA's webpage.