B. OR in Matrix

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Let's define logical OR as an operation on two logical values (i. e. values that belong to the set $\{0, 1\}$) that is equal to 1 if either or both of the logical values is set to 1, otherwise it is 0. We can define logical OR of three or more logical values in the same manner:

where is equal to 1 if some $a_i = 1$, otherwise it is equal to 0.

Nam has a matrix A consisting of m rows and n columns. The rows are numbered from 1 to m, columns are numbered from 1 to n. Element at row i $(1 \le i \le m)$ and column j $(1 \le j \le n)$ is denoted as A_{ij}. All elements of A are either 0 or 1. From matrix A, Nam creates another matrix B of the same size using formula:

.

(B_{ij} is OR of all elements in row i and column j of matrix A)

Nam gives you matrix B and challenges you to guess matrix A. Although Nam is smart, he could probably make a mistake while calculating matrix B, since size of A can be large.

Input

The first line contains two integer m and n $(1 \le m, n \le 100)$, number of rows and number of columns of matrices respectively.

The next m lines each contain n integers separated by spaces describing rows of matrix B (each element of B is either 0 or 1).

Output

In the first line, print "NO" if Nam has made a mistake when calculating B, otherwise print "YES". If the first line is "YES", then also print m rows consisting of n integers representing matrix A that can produce given matrix B. If there are several solutions print any one.

Examples

input
2 2 1 0 0 0
output
NO

input
2 3 1 1 1 1 1 1
output
YES 1 1 1 1 1 1

input
2 3 0 1 0 1 1 1
output

Codeforces Round #277 (Div. 2)

Finished

→ **Virtual participation**

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ **Problem tags**

greedy hashing implementation

No tag edit access

→ **Contest materials**

- Announcement
- Tutorial

```
YES
0 0 0
0 1 0
```
