PROBLEMS   SUBMIT CODE   MY SUBMISSIONS   STATUS   STANDINGS   CUSTOM INVOCATION

F. Diagonals of Light

time limit per test: 1 second

memory limit per test: 256 megabytes

In the heart of an ancient city, during the blessed nights of Ramadan, a grand mosque courtyard is lit by rows of beautiful lanterns "Fawanees" arranged in a grid. Each lantern in the courtyard is either lit (represented by 1) or $unlit$ (represented by 0).

One night, a young caretaker named $Kareem$ was given a special task by $Reda$:

"Ensure that every lantern that shares a **diagonal** with an initially lit one remains lit. But remember! Only the **original** lit lanterns should spread their light, not the newly illuminated ones."

$Kareem$, eager to fulfill his duty before the Taraweeh prayers, must carefully traverse the courtyard, identifying which diagonals need to remain lit.

Can you help $Kareem$ ensure that the light spreads correctly, preserving the original pattern of brightness along the diagonals?

Input
The first line contains t $(1 \le t \le 10^5)$, the number of test cases.

The second line contains n rows and m columns $(1 \le n, m \le 1000)$.

The next n lines each contain m space-separated integers 0 or 1 representing the grid.

It is guaranteed that the sum of $n \cdot m$ over all test cases does not exceed $2 \cdot 10^6$.

Output
Print the updated $n * m$ grid, ensuring that all lanterns in the **diagonals** of initially lit lanterns remain lit.

Example

input	Copy

```
2
3 3
010
010
000
1 2
01
```

output	Copy

```
111
111
101
01
```