ICPC Assiut University Community

Ramadan Kareem



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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	Сору
2	
3 3	
010	
010	
000	
1 2	
01	
output	Сору
111	
111	
101	
01	

ICPC Assiut Ramadan Marathons

Private

Participant



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→ Group Contests

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- Ramadan Marathon 2025
- Ramadan Marathon 2024
- Ramadan Marathon 2023
- Ramadan Marathon 2021
- Ramadan Marathon Juniors 2020
- Ramadan Marathon Newcomers 2020
- Ramadan Marathon Newcomers 2019
- Ramadan Marathon Juniors 2019
- Ramadan Kareem Marathon 2017

Ramadan Marathon 2025

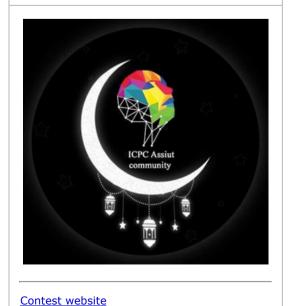
Contest is running

3 weeks

Contestant



→ About Contest



→ Submit?