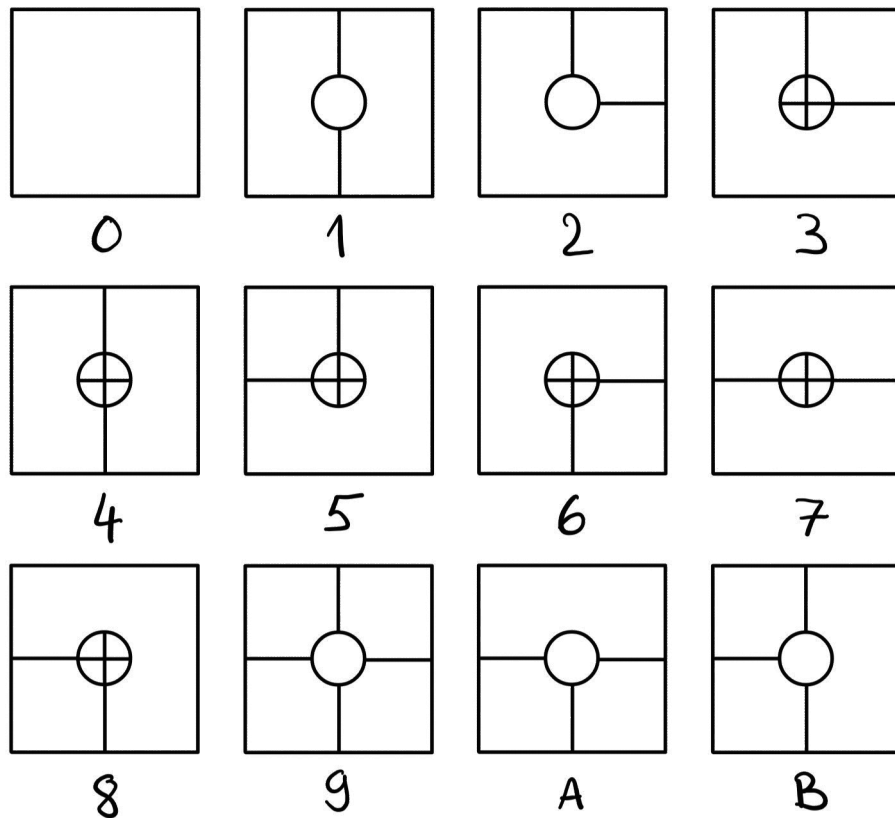


Loop Land

Input file: standard input
Output file: standard output
Time limit: 2 seconds
Memory limit: 1024 megabytes

Mr. Nežmah received a puzzle for his birthday. The puzzle can be represented as a grid with n rows and m columns. Each cell can be one of 12 types, labeled with numbers from 0 to 9 and with A and B . Some of the cells are static, some can be rotated by specific degrees, and some function as switches. A detailed explanation of all the types follows this graphic:



Graphic of all types of cells

All cell types except 0 have a positive number of arms. The goal of the puzzle is to pair up all the arms inside the grid. The cells can be transformed according to their type.

- Cell types 0 and 9 are static and cannot be changed.
- Cell types 3, 4, 5, 6, 7, and 8 are switches, meaning that the **single** arm must be in exactly one of the two drawn positions.
- Cell types 1 and 2 can be rotated by 0° , 90° , 180° , and 270° .
- Cell types A and B can be rotated by 0° , 180° .

Nežmah wants to solve the puzzle, so he needs your help!

Input

The first line contains a single integer t ($1 \leq t \leq 2 \cdot 10^4$), the number of test cases.

The first line of each test case contains integers n and m ($1 \leq n, m \leq 10^3$).

The following n lines contain strings of length m describing the n rows of the grid. The j -th character in the i -th string denotes the type of the cell in the i -th row and j -th column.

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

Output

For each test case, output $2n - 1$ lines. Each line should contain a string of length $2m - 1$. If the cell in the i -th row and j -th column is of non-zero type, the character in the $(2i - 1)$ -th string on the $(2j - 1)$ -th position should be 'o'. Each 'o' should have a possible construction of arms going out of it (according to the type of the appropriate cell). Vertical arms are denoted with '|' and horizontal ones with '-'. All other characters should be '.'.

A solution is guaranteed to exist, and if there are multiple solutions, you can output any of them.

Example

standard input	standard output
3	o-o-o..
4 4
2A70	o-o-o.o
2A58
87A2	o.o-o-o
21A5
2 2	o-o-o-o
68	o.o
35	.
7 6	o.o
065258	..o-o.o-o.o
622143
B9BBB0	o.o-o.o.o.o
5B2B20
7B3A86	o-o-o.o-o..
432A12
282A15	o.o-o.o-o..

	o-o.o-o-o.o

	o.o.o-o-o-o

	o-o.o-o-o-o