

Art

After realising he is not talented enough to be a sportsman, Ivancho decided to try his luck with art. Abstract art. He heard the works there were sold for millions and after seeing a few of them he thought there was nothing special in them.

Ivancho went straight to the art shop and bought a huge canvas on which he drew a large rectangle table with **N** rows and **M** columns. His plan was to fill the single small squares of the table with 2 colours - red and black. Without much thinking he filled some of the squares in black and went to sleep with the hope to dream about another money making strategy.

Unsurprisingly, that is exactly what happened. After looking at what he had so far, Ivancho thought he should better start coloring the squares in red under the following two constraints (there must be something abstract in the picture, remember?):

- A square which has been already filled cannot be refilled again (i.e. he cannot change the colour of the cells from black to red).
- Two neighbouring squares (sharing a common side) cannot be red.

Ivancho is interested in the total number of possible paintings he can create from now on obeying the rules above. Please note he might choose not to fill any new square in red (leaving the picture as it was).

Input: Two natural numbers **N** - number of rows and **M** - number of columns of the table will be written on the first line of the input file **art.in**. On the next **N** lines there will be **M** numbers, 0 or 1, separated by a blank space. If the corresponding cell is already filled in black, the number in the input will be 0. Otherwise, if the cell is free to be coloured, its number will be 1.

Output: On the single line of the output file **art.out**, please print the number of all possible valid pictures Ivancho can paint beginning from the starting configuration given in the input. As this number may be too large, print the answer modulo 1,000,000,007.

Constraints:

$1 \leq N \leq 12$

$1 \leq M \leq 12$

Time limit: 1.0 cek

Memory limit: 256 MB

Preliminary test cases: 5

Final test cases: 20

Example:

art.in	art.out
2 3 1 1 0 0 1 0	5

Explanation of the output:

The possible final pictures are the following:

