COCI '10 Contest 6 #6 Voda

Time limit: 5.0s **Memory limit:** 128M

Mirko, the mad plumber, was hired to construct a water supply network between two locations in a city. The city map can be represented as an $R \times S$ grid. Some cells are **not suitable** for placing water pipes. Locations Mirko needs to connect are placed **directly above** the top left cell of the grid, and **directly below** the bottom right cell.

Each suitable cell Mirko can either **leave empty** or use it for placing **one of the following** 6 **pipe types**:

Find the number of ways that pipes can be placed to connect the two locations with a continuous pipe (water must not be spilled). All placed pipe parts **must be in use**.

Output the solution **modulo** $10\,007$.

Input Specification

The first line of input contains the integers R and S $(2 \leq R, S \leq 10)$, the number of rows and columns of the city grid, respectively. Each of the next R lines contains exactly S characters: `.` if the cell is suitable for placing pipes, and `#` if not.

Output Specification

The first and only line of output must contain the required number of ways modulo $10\,007$.

Sample Input 1

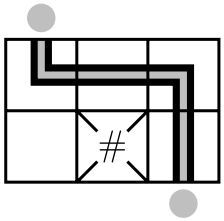
```
2 3
...
.#.
```

Sample Output 1

```
1
```

Explanation for Sample Output 1

This is the only possible solution:



Sample Input 2

```
3 3
...
...
...
```

Sample Output 2

```
12
```