1555. Number of Ways of Cutting a Pizza

Difficulty : Hard

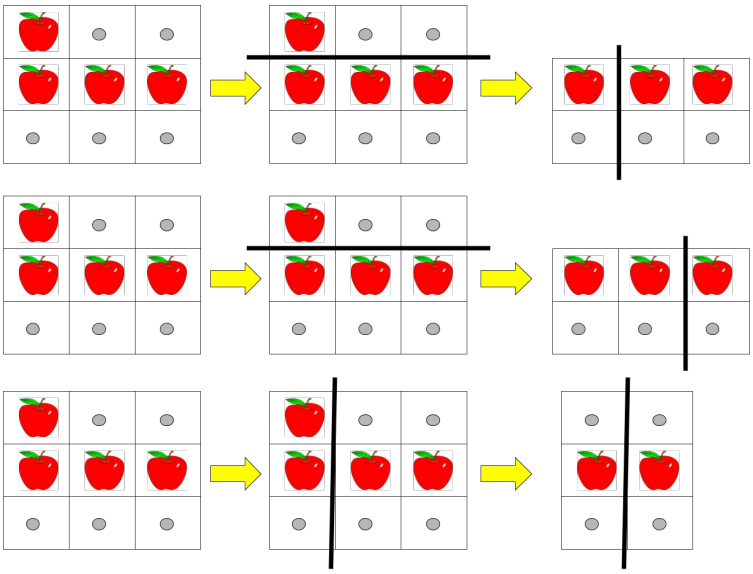
https://leetcode.com/problems/number-of-ways-of-cutting-a-pizza

Given a rectangular pizza represented as a `rows x cols` matrix containing the following characters: `'A'` (an apple) and `'.'` (empty cell) and given the integer `k`. You have to cut the pizza into `k` pieces using `k-1` cuts.

For each cut you choose the direction: vertical or horizontal, then you choose a cut position at the cell boundary and cut the pizza into two pieces. If you cut the pizza vertically, give the left part of the pizza to a person. If you cut the pizza horizontally, give the upper part of the pizza to a person. Give the last piece of pizza to the last person.

*Return the number of ways of cutting the pizza such that each piece contains **at least** one apple.* Since the answer can be a huge number, return this modulo 10^9 + 7.

Example 1:



```
Input: pizza = ["A..","AAA","..."], k = 3
Output: 3
Explanation: The figure above shows the three ways to cut the pizza. Note that pieces must contain at least one apple.
```

Example 2:

```
Input: pizza = ["A..","AA.","..."], k = 3
Output: 1
```

Example 3:

```
Input: pizza = ["A..","A..","..."], k = 1
Output: 1
```

Constraints:

- `1 <= rows, cols <= 50`
- `rows == pizza.length`
- `cols == pizza[i].length`
- `1 <= k <= 10`
- `pizza` consists of characters `'A'` and `'.'` only.