



1st North African Olympiad in Informatics 2025

Tiles

Time limit: 2 seconds

Memory limit: 256 MB

Baguhaye board y'utuzu $n \times m$, aho $1 \leq n \leq 2$. Utuzu tumwe na tumwe turafunze, mugihe utundi twose dufunguye. Ushobora gushyira domino (rectangle ifite size ya 1×2 cyangwa 2×1) kutuzu tubiri twegeranye twose dufunguye. Iyo ushyize domino kuri board, utuzu tubiri ifata duhita dufungwa. Set ya dominoes tuyita **good** kuri board dufite iyo nyuma yo gushyiraho domino zose zo muri ya set biba bidashoboka kuba washyiraho indi domino y'ingongerwa kuri board.

Uhawe board runaka, ni ama sets angahe ari **good** y'amadomino ashobora kuboneka kuri iyo board? Urabarira muri modulo $10^9 + 7$. Amadomino abiri aba atandukanye iyo imwe muri yo ifata akazu indi domino idafata. Ama set y'amadomino aba atandukanye iyo hari domino iri muri set yambere ariko itari muri set yakabiri cyangwa iri muri set yakabiri ariko itari muri set yambere.

Input

Umurongo wambere ufite ama integer abiri n na m ($1 \leq n \leq 2$, $1 \leq m \leq 10^5$).
Buri murungo mu mirungo n ikurikira ufite inyuguti m , buri nyuguti ni '.' cyangwa '#'.
Inyuguti iri kumwanya wa j kumurungo wa i -th ni '.' niba akazu (i, j) gafunguye, cyangwa '#' niba akazu (i, j) gafunze.

Output

Vuga integer imwe - umubare wa good sets za dominoes muri modulo $10^9 + 7$

Constraints

- $1 \leq n \leq 2$
- $1 \leq m \leq 10^5$

Subtasks

| Subtask | Score | Constraints |
|---------|-------|--|
| 1 | 6 | $m \leq 2$ |
| 2 | 14 | $n = 1$ |
| 3 | 12 | $m \leq 7$ |
| 4 | 8 | $3 \mid m$, for $j = 3k$ (k ihera kuri 1 kugera $\frac{m}{3}$) utuzu $(1, j - 2)$, $(1, j - 1)$ na $(2, j - 2)$ turafunguye, utundi tuzu twose turafunze |
| 5 | 12 | Utuzu twose turafunguye |
| 6 | 18 | $n \leq 10^3$ |
| 7 | 30 | Ntazindi constraints ziyongereyeho |

Ingero

Input 1

```
2 2
..
..
```

Output 1

```
2
```

Input 2

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

Output 2

```
1
```

Input 3

```
1 8
....#...
```

Output 3

```
4
```

Ubusobanuro

- Murugero rwambere, hari good sets ebyiri zishoboka: set imwe ifite amadomino ahagaze indi set ifite amadomino atambitse.
- Murugero rwakabiri, set yonyine iri good ni set irimo ubusa (empty set).