Super Humble Matrix

Sherry likes matrices a lot, but her favorite ones are *humble matrices*. An $N \times M$ matrix (we'll call it A) is *humble* if:

- It contains all the elements in range $[1 , N \times M]$ exactly once.
- For any 2 elements (i_1, j_1) and (i_2, j_2) in matrix A:
  If $i_1 + j_1 \lt i_2 + j_2$, then $A_{i_1, j_1} \lt A_{i_2, j_2}$ should hold.

Given N and M, find and print the total number of possible humble matrices; as this number can be quite large, print your answer modulo 10^9+7.

Input Format

Two space-separated integers, N and M, respectively.

Constraints

- $1 \le N,M \le 10^6$

Scoring

- $1 \le N,M \le 10^3$ for 30% of the test data.
- $1 \le N,M \le 10^6$ for 100% of the test data.

Output Format

Print the total number of humble matrices possible, modulo 10^9+7.

Sample Input 0

```
2 2
```

Sample Output 0

```
2
```

Sample Input 1

```
3 2
```

Sample Output 1

```
4
```

Explanation

There are 2 possible 2×2 humble matrices:

1. **[1, 2]**
   [3, 4]
2. **[1, 3]**

[2, 4]

Thus, we print the result of $2 \ \% \ (10^9+7)$, which is 2.