2184. Number of Ways to Build Sturdy Brick Wall Premium

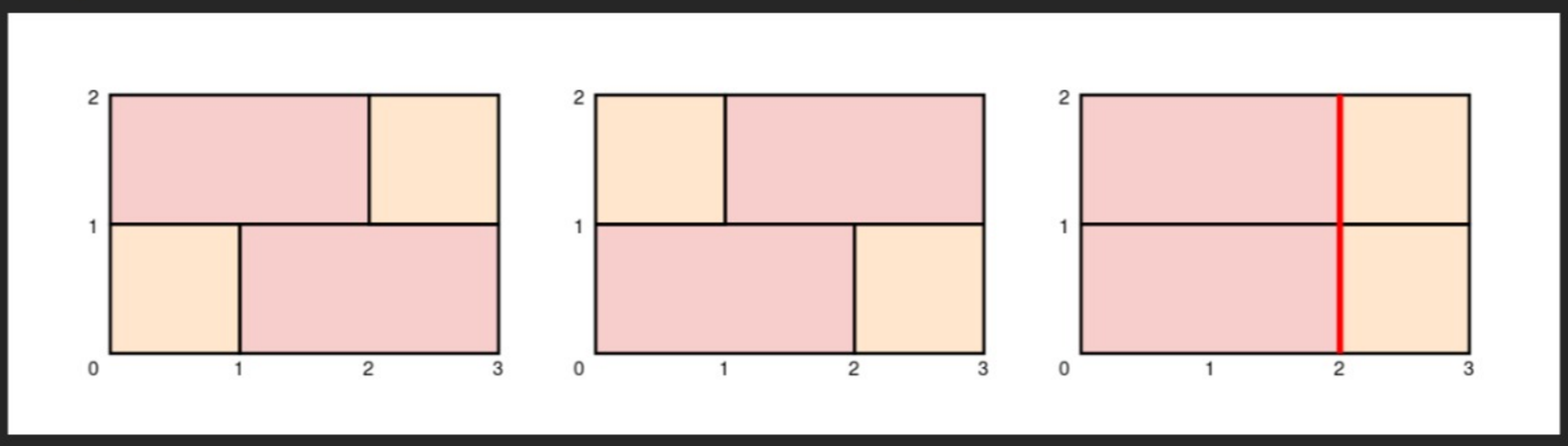
Medium | Topics | Companies | Hint

You are given integers `height` and `width` which specify the dimensions of a brick wall you are building. You are also given a **0-indexed** array of **unique** integers `bricks`, where the i^{th} brick has a height of `1` and a width of `bricks[i]`. You have an **infinite** supply of each type of brick and bricks may **not** be rotated.

Each row in the wall must be exactly `width` units long. For the wall to be **sturdy**, adjacent rows in the wall should **not** join bricks at the same location, except at the ends of the wall.

Return *the number of ways to build a **sturdy** wall.* Since the answer may be very large, return it **modulo** $10^9 + 7$.

Example 1:




```
Input: height = 2, width = 3, bricks = [1,2]
Output: 2
Explanation:
The first two walls in the diagram show the only two ways to build a sturdy brick wall.
Note that the third wall in the diagram is not sturdy because adjacent rows join bricks 2 units from the left.
```

Example 2:

```
Input: height = 1, width = 1, bricks = [5]
Output: 0
Explanation:
There are no ways to build a sturdy wall because the only type of brick we have is longer than the width of the wall.
```

Constraints:

- `1 <= height <= 100`
- `1 <= width <= 10`
- `1 <= bricks.length <= 10`
- `1 <= bricks[i] <= 10`
- All the values of `bricks` are **unique**.

Seen this question in a real interview before? 1/5

Yes No

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Hint 1

A row of bricks can be represented uniquely by the points where two bricks are joined together.

Hint 2

For a given row of bricks, how many configurations of bricks could you have put below this row such that the wall is sturdy?

Hint 3

Use dynamic programming to store the number of possible sturdy walls with a given height and configuration of bricks on the top row.

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