

Problem 3021: Alice and Bob Playing Flower Game

Problem Information

Difficulty: Medium

Acceptance Rate: 60.07%

Paid Only: No

Tags: Math

Problem Description

Alice and Bob are playing a turn-based game on a field, with two lanes of flowers between them. There are `x` flowers in the first lane between Alice and Bob, and `y` flowers in the second lane between them.

The game proceeds as follows:

1. Alice takes the first turn.
2. In each turn, a player must choose either one of the lane and pick one flower from that side.
3. At the end of the turn, if there are no flowers left at all in either lane, the **current** player captures their opponent and wins the game.

Given two integers, `n` and `m`, the task is to compute the number of possible pairs `(x, y)` that satisfy the conditions:

* Alice must win the game according to the described rules.
* The number of flowers `x` in the first lane must be in the range `[1,n]`.
* The number of flowers `y` in the second lane must be in the range `[1,m]`.

Return _the number of possible pairs_ `(x, y)` _that satisfy the conditions mentioned in the statement_.

Example 1:

****Input:**** n = 3, m = 2 ****Output:**** 3 ****Explanation:**** The following pairs satisfy conditions described in the statement: (1,2), (3,2), (2,1).

****Example 2:****

****Input:**** n = 1, m = 1 ****Output:**** 0 ****Explanation:**** No pairs satisfy the conditions described in the statement.

****Constraints:****

* `1 <= n, m <= 105`

Code Snippets

C++:

```
class Solution {
public:
    long long flowerGame(int n, int m) {
        }
    };
}
```

Java:

```
class Solution {
    public long flowerGame(int n, int m) {
        }
    }
}
```

Python3:

```
class Solution:
    def flowerGame(self, n: int, m: int) -> int:
```