

PROBLEM

Paths to reach origin



Medium Accuracy: 53.93% Submissions: 30K+ Points: 4

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You are standing on a point (x, y) and you want to go to origin $(0, 0)$ by taking steps either **left** or **up** i.e. from each point you are allowed to move either in $(x-1, y)$ or $(x, y-1)$. Find the number of **paths** from **point** to **origin**.

Example 1:

Input:

$x = 3, y = 0$

Output:

1

Explanation: Path used was - $(3,0) \rightarrow (2,0) \rightarrow (1,0) \rightarrow (0,0)$. We can see that there is no other path than this, so we return 1.

Example 2:

Input:

$x = 3, y = 6$

Output:

84

Explanation:

There are total 84 possible paths.

Your Task:

Since, this is a function problem. You don't need to take any input, as it is already accomplished by the driver code. You just need to complete the function **ways()** that takes integer **x** and **y** as parameters and returns the total number of **paths** from **point** (x,y) to the **origin** $(0,0) \% 1000000007$.

Expected Time Complexity: $O(x*y)$.

Expected Auxiliary Space: $O(x*y)$.

Constraints:

$0 \leq x, y \leq 500$

CODE

```
#User function Template for python3
```

```
import math
```

```
class Solution:
```

```
    def ways(self, n,m):
```

```
        #write you code here
```

```
        mod=10**9+7
```

```
        paths = math.factorial(n + m) // (math.factorial(n) *  
math.factorial(m))
```

```
        return paths%mod
```

```
        #write you code here
```