

070. Climbing Stairs

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- Dynamic Programming

Description

You are climbing a stair case. It takes n steps to reach to the top.

Each time you can either climb 1 or 2 steps. In how many distinct ways can you climb to the top?

Note: Given n will be a positive integer.

Example 1:

Input: 2
Output: 2
Explanation: There are two ways to climb to the top.

1. 1 step + 1 step
2. 2 steps

Example 2:

Input: 3
Output: 3
Explanation: There are three ways to climb to the top.

1. 1 step + 1 step + 1 step
2. 1 step + 2 steps
3. 2 steps + 1 step

1. Thought line

2. Dynamic Programming

```
1 class Solution {
2 public:
3     int climbStairs(int n) {
4         // f[n] = f[n-1] + f[n-2]
5         vector<int> ladder(n+1);
6         ladder[1] = 1, ladder[2] = 2;
7         for (int i = 3; i<=n; ++i){
8             ladder[i] = ladder[i-1] + ladder[i-2];
9         }
10        return ladder[n];
11    }
12 };
```