

# 070. Climbing Stairs

## 070 Climbing Stairs

- 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 };
```