

# 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

```
class Solution {
public:
    int climbStairs(int n) {
        // f[n] = f[n-1] + f[n-2]
        vector<int> ladder(n+1);
        ladder[1] = 1, ladder[2] = 2;
        for (int i = 3; i <= n; ++i){
            ladder[i] = ladder[i-1] + ladder[i-2];
        }
        return ladder[n];
    }
};
```

