



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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WORKSHEET 6

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Branch: BE-CSE

Section/Group: 22BCS_NTPP-602-A

Semester: 6th

Date of Performance: 20/02/2025

Subject Name: AP LAB - II

Subject Code: 22CSP-351

1. Aim:

You are climbing a staircase. It takes n steps to reach the top. Each time you can either climb 1 or 2 steps. In how many distinct ways can you climb to the top?

2. Source Code:

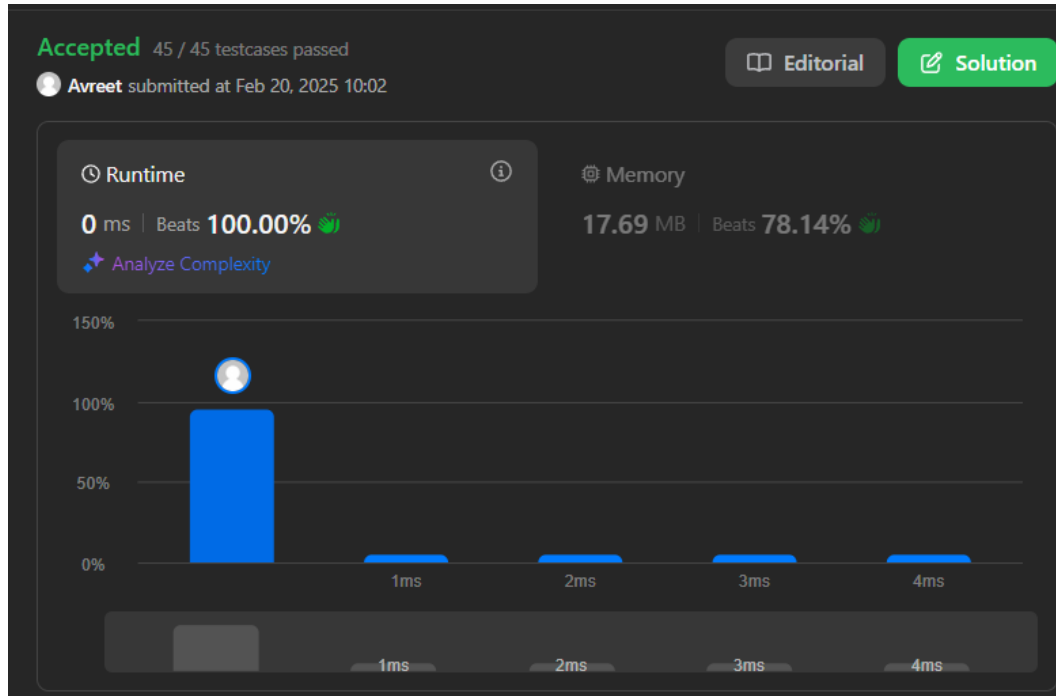
```
class Solution {  
public:  
    int climbStairs(int n) {  
        if (n == 1) {  
            return 1;  
        }  
        int a = 1, b = 2;  
        for (int i = 3; i <= n; i++) {  
            int temp = b;  
            b = a + b;  
            a = temp;  
        }  
        return b;  
    }  
};
```



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3. Screenshots of outputs:



2.

Aim: You are given an array prices where prices[i] is the price of a given stock on the ith day. You want to maximize your profit by choosing a single day to buy one stock and choosing a different day in the future to sell that stock. Return the maximum profit you can achieve from this transaction. If you cannot achieve any profit, return 0.

4. Source Code:

```
#include <vector>

#include <limits>

using namespace std;

class Solution {
public:
    int maxProfit(vector<int>& prices) {
```



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```
int min_price = numeric_limits<int>::max();  
  
int max_profit = 0;  
  
for (int price : prices) {  
    min_price = min(min_price, price);  
    int profit = price - min_price;  
    max_profit = max(max_profit, profit);  
}  
  
return max_profit;  
}
```

5. Screenshots of outputs:



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Accepted 212 / 212 testcases passed

Avreet submitted at Feb 20, 2025 10:37

Editorial

Solution

Runtime

133 ms | Beats 23.52%

Analyze Complexity

Memory

26.91 MB | Beats 33.50%

