Experiment-6

Student Name: Shristi Rai

UID: 22BCS15330

Branch: BE-CSE

Section/Group: 22BCS_NTPP-602-A

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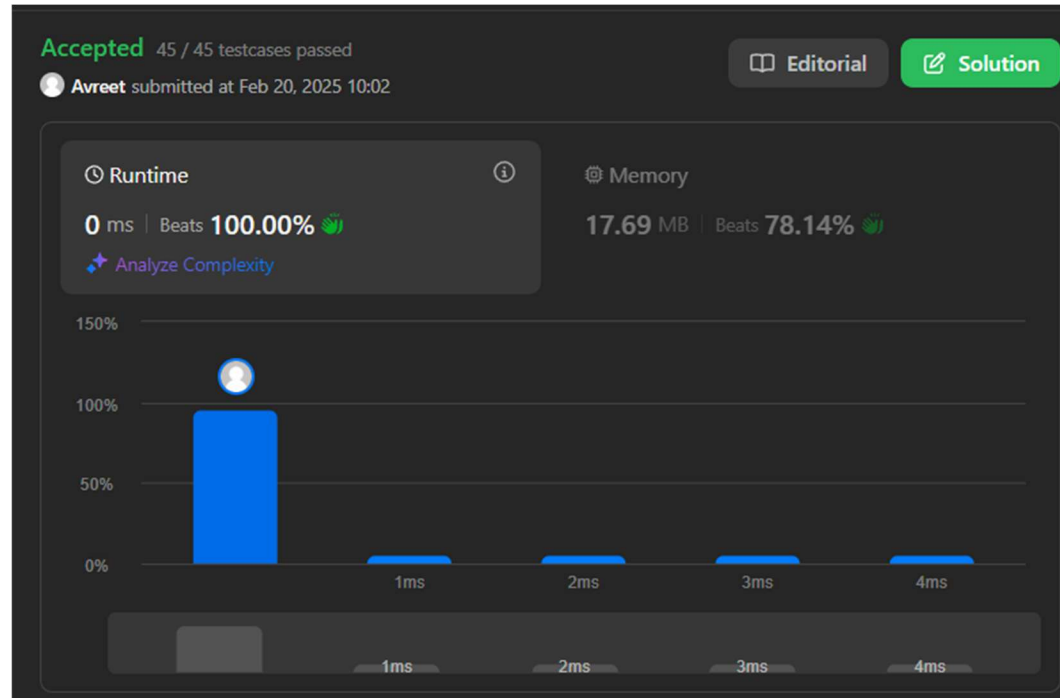
Subject Name: AP LAB - II

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:**

```python
class Solution:

    def climbStairs(self, n: int) -> int:

        if n == 1:

            return 1

        a, b = 1, 2

        for _ in range(3, n + 1):

            a, b = b, a + b

        return b
```

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.

Source Code:

```python
class Solution:
    def maxProfit(self, prices: List[int]) -> int:
        min_price = float('inf')
        max_profit = 0
        for price in prices:
            min_price = min(min_price, price)
            profit = price - min_price
            max_profit = max(max_profit, profit)
        return max_profit
```

Screenshots of outputs: