EXPERIMENT-10

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Subject Name: CC-II Lab **Subject Code: 20CSP-351**

PROBLEM-1: Best Time to Buy and Sell Stock

You are given an array `prices` where `prices[i]` is the price of a given stock on the i^{th} 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.

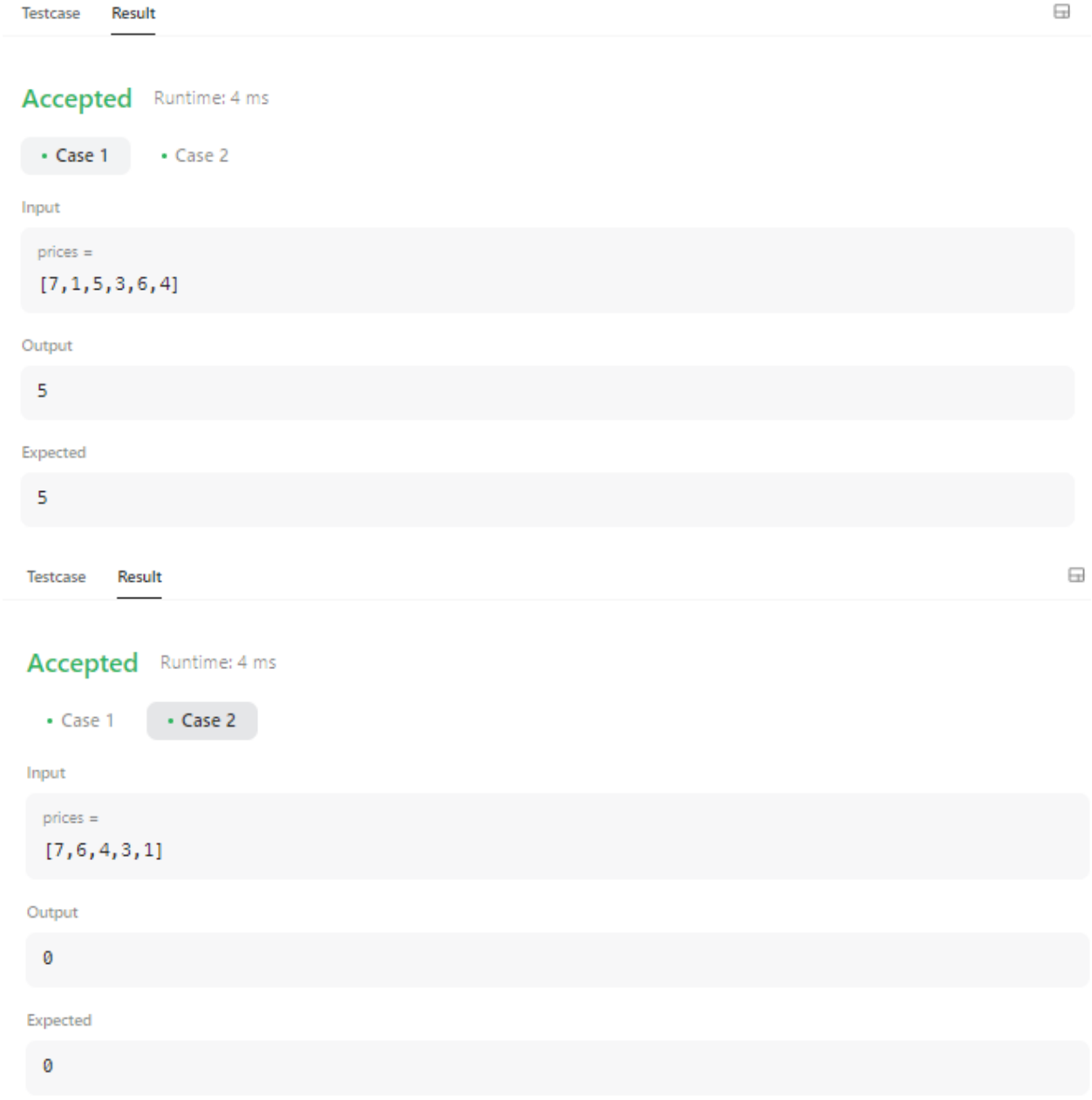
Return *the maximum profit you can achieve from this transaction.* If you cannot achieve any profit, return `0`.

CODE:-

```
class Solution {
public:
    int maxProfit(vector<int>& prices) {
        int lsf = INT_MAX;
        int op = 0;
        int pist = 0;

        for(int i = 0; i < prices.size(); i++){
            if(prices[i] < lsf){
                lsf = prices[i];
            }
            pist = prices[i] - lsf;
            if(op < pist){
                op = pist;
            }
        }
        return op;
    }
};
```

OUTPUT SCREENSHOT:-



PROBLEM-2: Climbing Stairs

CODE:

```
class Solution {
 public:
  int climbStairs(int n) {
    int prev1 = 1;  // dp[i - 1]
    int prev2 = 1;  // dp[i - 2]

    for (int i = 2; i <= n; ++i) {
      const int dp = prev1 + prev2;
      prev2 = prev1;
      prev1 = dp;
    }

    return prev1;
  }
};
```

OUTPUT SCREENSHOT:-