

121. Best Time to Buy and Sell Stock

🕒 Created	@June 23, 2021 9:07 PM
📌 Difficulty	Easy
🔗 LC Url	https://leetcode.com/problems/best-time-to-buy-and-sell-stock/
📌 Importance	
🏷️ Tag	Sliding Window
📺 Video	

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`.

Example 1:

```
Input: prices = [7,1,5,3,6,4]
Output: 5
Explanation: Buy on day 2 (price = 1) and sell on day 5 (price = 6), profit = 6-1 = 5.
Note that buying on day 2 and selling on day 1 is not allowed because you must buy before you sell.
```

Example 2:

```
Input: prices = [7,6,4,3,1]
Output: 0
Explanation: In this case, no transactions are done and the max profit = 0.
```

Constraints:

- `1 <= prices.length <= 10 5`
- `0 <= prices[i] <= 10 4`

```
class Solution:
    def maxProfit(self, prices: List[int]) -> int:
        max_profit, min_price = 0, float('inf')

        for price in prices:
            min_price = min(min_price, price)
            max_profit = max(max_profit, price - min_price)

        return max_profit
```