Problem 121: Best Time to Buy and Sell Stock

Problem Information

Difficulty: Easy
Acceptance Rate: 55.99%
Paid Only: No
Tags: Array, Dynamic Programming

Problem Description

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 <= 105` * `0 <= prices[i] <= 104`

Code Snippets

C++:

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

}
};
```

Java:

```
class Solution {
public int maxProfit(int[] prices) {

}
}
```

Python3:

```
class Solution:
def maxProfit(self, prices: List[int]) -> int:
```