

# Best Time to Buy and Sell Stock II

## Solution

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

On each day, you may decide to buy and/or sell the stock. You can only hold **at most one** share of the stock at any time. However, you can buy it then immediately sell it on the **same day**.

Find and return *the **maximum** profit you can achieve*.

### Example 1:

**Input:** `prices = [7,1,5,3,6,4]`

**Output:** 7

**Explanation:** Buy on day 2 (price = 1) and sell on day 3 (price = 5), profit =  $5 - 1 = 4$ .

Then buy on day 4 (price = 3) and sell on day 5 (price = 6), profit =  $6 - 3 = 3$ .

Total profit is  $4 + 3 = 7$ .

### Example 2:

**Input:** `prices = [1,2,3,4,5]`

**Output:** 4

**Explanation:** Buy on day 1 (price = 1) and sell on day 5 (price = 5), profit =  $5 - 1 = 4$ .

Total profit is 4.

### Example 3:

**Input:** `prices = [7,6,4,3,1]`

**Output:** 0

**Explanation:** There is no way to make a positive profit, so we never buy the stock to achieve the maximum profit of 0.

**Constraints:**

- `1 <= prices.length <= 3 * 104`
- `0 <= prices[i] <= 104`

```
public class Solution {  
    public int MaxProfit(int[] prices) {  
        int maxProfit = 0;  
  
        for (int i = 1; i < prices.Length; i++) {  
            if (prices[i] > prices[i - 1]) {  
                maxProfit += prices[i] - prices[i - 1];  
            }  
        }  
  
        return maxProfit;  
    }  
}
```