Please solve the following problem in your preferred coding language.

All problems are functional (Don't need to take any input from the user) Duration: 30 mins

Problem Statement

You are given an integer array of prices where prices[i] is the price of a given stock on the i^{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*

Function Signature

Python

```
def max_profit(prices: list) -> int:
```

Input
The list prices represent the prices of a stock on different days.

Output
Returns the maximum profit that can be achieved by buying and selling the stock on those days.

Example:

Python

```
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.
```

Constraints

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