

# 2291. Maximum Profit From Trading Stocks Premium

Medium Topics Companies Hint

You are given two **0-indexed** integer arrays of the same length `present` and `future` where `present[i]` is the current price of the `ith` stock and `future[i]` is the price of the `ith` stock a year in the future. You may buy each stock at most **once**. You are also given an integer `budget` representing the amount of money you currently have.

Return *the maximum amount of profit you can make*.

### Example 1:

**Input:** `present = [5,4,6,2,3]`, `future = [8,5,4,3,5]`, `budget = 10`  
**Output:** 6  
**Explanation:** One possible way to maximize your profit is to:  
Buy the 0<sup>th</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> stocks for a total of  $5 + 2 + 3 = 10$ .  
Next year, sell all three stocks for a total of  $8 + 3 + 5 = 16$ .  
The profit you made is  $16 - 10 = 6$ .  
It can be shown that the maximum profit you can make is 6.

### Example 2:

**Input:** `present = [2,2,5]`, `future = [3,4,10]`, `budget = 6`  
**Output:** 5  
**Explanation:** The only possible way to maximize your profit is to:  
Buy the 2<sup>nd</sup> stock, and make a profit of  $10 - 5 = 5$ .  
It can be shown that the maximum profit you can make is 5.

### Example 3:

**Input:** `present = [3,3,12]`, `future = [0,3,15]`, `budget = 10`  
**Output:** 0  
**Explanation:** One possible way to maximize your profit is to:  
Buy the 1<sup>st</sup> stock, and make a profit of  $3 - 3 = 0$ .  
It can be shown that the maximum profit you can make is 0.

### Constraints:

- `n == present.length == future.length`
- `1 <= n <= 1000`
- `0 <= present[i], future[i] <= 100`
- `0 <= budget <= 1000`

Seen this question in a real interview before? 1/5

Yes No

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Companies

0 - 3 months

BlackRock2

6 months ago

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Hint 1

Think of the 0-1 Knapsack Problem.

Hint 2

For the `i`th stock, the weight is `present[i]`, and the value is `future[i] - present[i]`.

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