Problem 1475: Final Prices With a Special Discount in a Shop

Problem Information

Difficulty: Easy
Acceptance Rate: 83.66%
Paid Only: No
Tags: Array, Stack, Monotonic Stack

Problem Description

You are given an integer array `prices` where `prices[i]` is the price of the `ith` item in a shop.

There is a special discount for items in the shop. If you buy the `ith` item, then you will receive a discount equivalent to `prices[j]` where `j` is the minimum index such that `j > i` and `prices[j] <= prices[i]`. Otherwise, you will not receive any discount at all.

Return an integer array `answer` where `answer[i]` is the final price you will pay for the `ith` item of the shop, considering the special discount.

Example 1:

Input: prices = [8,4,6,2,3] **Output:** [4,2,4,2,3] **Explanation:** For item 0 with price[0]=8 you will receive a discount equivalent to prices[1]=4, therefore, the final price you will pay is 8 - 4 = 4. For item 1 with price[1]=4 you will receive a discount equivalent to prices[3]=2, therefore, the final price you will pay is 4 - 2 = 2. For item 2 with price[2]=6 you will receive a discount equivalent to prices[3]=2, therefore, the final price you will pay is 6 - 2 = 4. For items 3 and 4 you will not receive any discount at all.

Example 2:

Input: prices = [1,2,3,4,5] **Output:** [1,2,3,4,5] **Explanation:** In this case, for all items, you will not receive any discount at all.

Example 3:

Input: prices = [10,1,1,6] **Output:** [9,0,1,6]

Constraints:

* `1 <= prices.length <= 500` * `1 <= prices[i] <= 1000`

Code Snippets

C++:

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

}
};
```

Java:

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

}
}
```

Python3:

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