188. Best Time to Buy and Sell Stock IV

Description

You are given an integer array `prices` where `prices[i]` is the price of a given stock on the `i th` day, and an integer `k`.

Find the maximum profit you can achieve. You may complete at most `k` transactions: i.e. you may buy at most `k` times and sell at most `k` times.

Note: You may not engage in multiple transactions simultaneously (i.e., you must sell the stock before you buy again).

Example 1:

```
Input: k = 2, prices = [2,4,1]
Output: 2
Explanation: Buy on day 1 (price = 2) and sell on day 2 (price = 4), profit = 4-2 = 2.
```

Example 2:

```
Input: k = 2, prices = [3,2,6,5,0,3]
Output: 7
Explanation: Buy on day 2 (price = 2) and sell on day 3 (price = 6), profit = 6-2 = 4. Then buy on day 5 (price = 0) and sell on day 6 (price = 3),
profit = 3-0 = 3.
```

Constraints:

- `1 <= k <= 100`
- `1 <= prices.length <= 1000`
- `0 <= prices[i] <= 1000`