

<https://course.acciojob.com/idle?question=94806d1f-1cff-4d55-af00-b0fbf33572f3>

- MEDIUM

- Max Score: 40 Points

Best Time to Buy and Sell Stock II

You are given an integer array `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.

Input Format

Input consists of two lines.

First line contains an integer `n`.

Next line contains `n` spaced integers.

You need to complete `maxProfit` function which contains array `prices` and return the maximum profit you can achieve

Output Format

Print the maximum profit

Example 1

Input

```
6
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

5
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

10
10 9 8 6 7 5 4 3 2 1

Output

0

Explanation

No way to achieve any profit.

Constraints

$1 \leq n \leq 10^5$

$1 \leq \text{prices}[i] \leq 10^3$

Topic Tags

- Greedy
- DP
- Arrays

My code

```
// n java
import java.util.*;

class Accio {
    public int maxProfit(int[] arr) {
        //Write your code here
        int ans=0;
        int n=arr.length;
        int bay=arr[0];
        for(int i=1;i<n;i++)
        {
            if(arr[i]<bay)
```

```

        bay=arr[i];
    else
    {
        ans=ans+arr[i]-bay;
        bay=arr[i];
    }
}
return ans;
}
}

```

```

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n;
        n = sc.nextInt();
        int arr[] = new int[n];
        for(int i=0;i<n;i++)
            arr[i] = sc.nextInt();
        Accio Obj = new Accio();
        int result = Obj.maxProfit(arr);
        System.out.println(result);
    }
}

```