一、题目说明

题目121. Best Time to Buy and Sell Stock，有一列数，第i个元素是第i天股票的价格，只允许一次交易（买和卖），计算如何利润最大化。难度是Easy!

二、我的解答

不动脑子，用brute force方法:

```cpp
class Solution{
    public:
        int maxProfit(vector<int>& prices){
            int len = prices.size();
            if(len<=1) return 0;

            int max = 0;

            for(int i=0;i<len-1;i++){
                for(int j=i+1;j<len;j++){
                    if(prices[j]-prices[i]>max){
                        max = prices[j]-prices[i];
                    }
                }
            }
            return max;
        }
};
```

```
Runtime: 788 ms, faster than 11.32% of C++ online submissions for Best Time to
Buy and Sell Stock.
Memory Usage: 9.6 MB, less than 77.98% of C++ online submissions for Best Time
to Buy and Sell Stock.
```

三、优化措施

一遍扫描，计算最小值，计算最大利润:

```cpp
class Solution{
    public:
        int maxProfit(vector<int>& prices){
            int len = prices.size();
            if(len<=1) return 0;
            int minPrice=INT_MAX,maxProfit=0;
            for(int i=0;i<len;i++){
                if(prices[i]<minPrice){
                    minPrice = prices[i];
                }else if(prices[i]-minPrice>maxProfit) {
                        maxProfit = prices[i]-minPrice;
                }
            }

            return maxProfit;
        }
```

```
    };
```

性能如下:

```
Runtime: 4 ms, faster than 98.50% of C++ online submissions for Best Time to Buy
and Sell Stock.
Memory Usage: 9.5 MB, less than 86.24% of C++ online submissions for Best Time
to Buy and Sell Stock.
```

```
    };
```

性能如下:

```
Runtime: 4 ms, faster than 98.50% of C++ online submissions for Best Time to Buy
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