**Best time to buy and sell stock:**

Given:

We have an array of items. Each of the items indicates the price of a stock on a given day.

Goal/Objective:

We need to calculate the possible maximum profit when we choose a day to buy the stock and sell on a different day in the future

Solution:

To implement this, here is the logic. Compare the items in an array and find what day we should buy and sell the stock in the future to get maximum profit.

Assumptions:

* We have to buy first and sell later.
* This process should be done only once.
* Since we are talking about the prices of a stock, the values are not negative

**Contains duplicate:**

Given:

I have an array of items that consists of all types of numbers and integers can be repeated or may not be repeated.

Goal/Objective:

I need to find out whether the integers were repeated or not. If repeated then the output should be true or else it should be false.

Solution:

To implement this problem,

* We are using 4 ways

1. Brute force method:

* We first check the length of the array
* Next, in the for loop, we assign the range of the variable “I” as the length of the array -1
* Next, we assign the next “for” loop and assign the range of another variable “j” as i+1 till the length of the array
* I compare the value using the if condition if the integers are the same it returns as true or else it returns as false and it will be exited from the loops.

*undergoes multiple loops checks every item in an array and displays the output.*

1. Sorting:  
     *the item checks the other items in an order without having multiple loops.*

* This process will happen with only one for-loop where we are assigning the range of I as 1 to the length of the array

1. Hash Set:  
   *the item checks the other items in the stack and defines the duplicate.*
2. Hash Map:  
   *the array is arranged in a stack and the stack is any duplicates in that. If there is any duplicate it shows as true or else false.*

Assumptions:

* If it finds a match the loop should be returned
* The output should be true or false not in the 0’s and 1’s