Arrays

1. **Move Zeros**

Given an array nums, write a function to move all 0's to the end of it while maintaining the relative order of the non-zero elements.

**Example:**

**Input:** [0,1,0,3,12]

**Output:** [1,3,12,0,0]

**Note**:

1. You must do this **in-place** without making a copy of the array.
2. Minimize the total number of operations.

Logic:

1. Loop through the array
2. If a[i]!=0 copy to an existing array and increment the count from zero
3. And copy the zeros to remaining elements of the array.
4. **Add Binary**

Given two binary strings, return their sum (also a binary string).

The input strings are both non-empty and contains only characters 1 or 0.

Example 1:

Input: a = "11", b = "1"

Output: "100"

Example 2:

Input: a = "1010", b = "1011"

Output: "10101"

Logic:

1. Loop through the one array after ending small array it will just add zero to the sum
2. Have the carry initialized to zero
3. Add the digits from last index
4. A+b+carry
5. Carry = 1 if result is >1
6. If we add binary the possible values can be either 0,1,2,3. The modulus of the number will be 1 for the number 3, for the number 2 its zero. Less than 2 is the number itself.
7. Add the result into stringbuilder. sb.Insert(0, 1);method not append.
8. **Intersection of Two Arrays II**

Given two arrays, write a function to compute their intersection.

**Example 1:**

**Input:** nums1 = [1,2,2,1], nums2 = [2,2]

**Output:** [2,2]

**Example 2:**

**Input:** nums1 = [4,9,5], nums2 = [9,4,9,8,4]

**Output:** [4,9]

**Note:**

* Each element in the result should appear as many times as it shows in both arrays.
* The result can be in any order.

**Follow up:**

* What if the given array is already sorted? How would you optimize your algorithm?
* What if *nums1*'s size is small compared to *nums2*'s size? Which algorithm is better?
* What if elements of *nums2* are stored on disk, and the memory is limited such that you cannot load all elements into the memory at once?

Logic:

1. Copy the one (smaller) array to Dictionary
2. Have a list, run through the other array if values contain in the dictionary add to list.
3. Return the list.