1. Two Sum <https://leetcode.com/problems/two-sum/>

Hash table, array

Brute Force O(n^2)

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| Time Submitted | Status | Runtime | Memory | Language |
| 03/06/2021 16:59 | [Accepted](https://leetcode.com/submissions/detail/464419570/) | 28 ms | 13.6 MB | python |

class Solution(object):

def twoSum(self, nums, target):

"""

:type nums: List[int]

:type target: int

:rtype: List[int]

"""

for i in range(0, len(nums)-1):

for j in range(i+1, len(nums)):

if nums[i] + nums[j]==target:

return [i,j]

O(n) time

Took it from discussion from.

[2,11,15,7] and target 9, if subtract list from target we will have [7,-2,-6,2]

If the sum of two items are equal to target they will appear in target - list.

Starting with empty dict and fill with value and index

If diff=-2 in {2:0} return [dic[diff],i]

So we will have {2:0, 11:1, :15:2} because diff hasn't been in key

Next diff will be diff = 9-2=7

Diff is in {2:0, 11:1, :15:2}

Return [dic[diff] >> 0, i] >> where i is 3

def twosum(nums, target):

dic = {}

for i, n in enumerate(nums):

diff = target - n

if diff in dic:

return [dic[diff],i]

dic[n]=i

return