# 1. Two Sum

Question | My Submissions

Total Accepted: **167543** Total Submissions: **841349** Difficulty: **Medium**

> Given an array of integers, find two numbers such that they add up to a specific target number.
>
> The function twoSum should return indices of the two numbers such that they add up to the target, where index1 must be less than index2. Please note that your returned answers (both index1 and index2) are not zero-based.
>
> You may assume that each input would have exactly one solution.
>
> **Input:** numbers={2, 7, 11, 15}, target=9
>
> **Output:** index1=1, index2=2

Analysis:
Loop through the array to check every element
We use a dictionary to store the element and its index we have checked.
Every time we check an element in the array, we also need to check if the answer is in the dictionary. If the answer is in the dictionary, we find the answer.
For example, the target == e, and we are checking c in the array, so we also need to check if e-c is in the dictionary. If yes, we are done, if not, we store the c and index of c into the dictionary.

```
2  def twoSum(nums, target):
3      n = len(nums)
4      dic = dict()
5
6      if n < 2:
7          return None
8
9      for i in range(0, n):
10         x = nums[i]
11         if (target-x) in dic:
12             return [dic.get(target-x)+1, i+1]
13         dic[x]=i
14     return None
```