# TwoSum

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## Q1

Given an array of integers nums and an integer target, return indices of the two numbers such that they add up to *target*.

You may assume that each input would have **exactly one solution**, and you may not use the same element twice.

You can return the answer in any order.

Solution note:

* Use the **original list to minus the target value** and conduct the search if the complement of each value is in the new subtracted list.
* It only takes one for-loop if use list.
* We can also use hashable table (python implementation of hashable table is dictionary)

## Q167

Use hashable dictionary with one for loop.

for i, val in enumerate(numbers):

num = target - val # the complement value

if num in numMap.keys(): # design a hashable dictionary, put the number as the key of the dictionary.

return [numMap.get(num)+1, i+1] # numMap.get(num) get the value(index) of a given key(number)

# add 1 to meet the non-zero index requirement

numMap[val] = i # each time, put the number as a key in the hashable data structure (dictionary in python)

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