Transformer AI

The Leet-Code Engineer

A Book

Brian Abbott, October 2024

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# Overview

Leet-Code has changed the coding landscape. The level of skill and quality of engineering delivered to organizations has revolutionized the Technology Industry Landscape. What the leet-code practiced engineer can render to any problem-domain, the speed at which they can do it and the quality of code that they deliver is the reason and motivation behind this book.

## Leet-Code Problem Sets

* Amazon Problems
  + 1, Two-Sum
  + 3, Longest Substring without Repeating Chars
  + 8, String to Integer
  + 11, Container with the Most Water
  + 12, Integer to Roman
  + 13, Roman to Integer
  + 15, 3-Sum
  + 16, 3-Sum Closest
  + , Implement StrStr
  + 48, Rotate Image
  + 49, Group Anagrams
  + 76, Minimum Window Substring
  + 165, Compare Version Numbers
  + 238, Product of Array Except Self
  + 268, Missing Number
  + 273, Integer to English Words
  + 387, First Unique Character in a String
  + 678, Valid Parenthesis
  + 819, Most Common Word
  + 937, Re-Order Log Files
  + 42, Trapping Rain Water
  + 2, Add Two Numbers
  + 21, Merge Two Sorted Lists
  + 25, Reverse Nodes in K-Group
  + 138, Copy List with Random Pointer
  + 206, Reverse Linked Lists
  + 23, Merge K-Sorted Lists
  + 98, Validate Binary Search Tree
  + 101, Symmetric Tree
  + 102, Binary Tree, Level Order Traversal
  + 103, Binary Tree, ZigZag Order Traversal
  + 124, Binary Tree, Maximum Path Sum
  + 126, Word Ladder II
  + 127, Word Ladder
  + 200, Number of Islands
  + 207, Course Schedule
  + 236, Lowest Common Ancestor of Binary Tree
  + 543, Diameter of Binary Tree
  + 675, Cut-Off Trees for Golf Event
  + 733, Flood Fill
  + 17, Letter Combinations of a Phone Number
  + 22, Generate Parenthesis
  + 79, Word Search
  + 212, Word Search II
  + 4, Median of Two Sorted Arrays
  + 33, Search in Rotated Sorted Array
  + 56, Merge Intervals
  + 167, Two Sum II, input array is sorted
  + 215, Kth largest element in an array
  + 253, Meeting Rooms II
  + 347, Top K Frequent Elements
  + 973, K closest points to origin
  + 5, Longest Palindrome Substring
  + 53, Maximum Subarray
  + 121, Best Time to Buy and Sell a Stock
  + 139, Word Break
  + 322, Coin Change
  + 146, LRU Cache
  + 155, Min Stack
  + 295, Find Median from Data Stream
  + 297, Serialize and Deserialize a Binary Tree
  + 348, Design Tic-Tac-Toe
  + 642, Design Search Auto-Complete System
  + 895, Maximum Frequency Stack
  + 7, Reverse Integer
  + 176, Second Highest Salary
  + 763, Partition Labels
  + 957, Prison Cells after N Days
* Meta Problems
  + Stone Game II
  + Spiral Matrix
  + 01 Matrix
  + Toeplitz Matrix
  + Transpose Matrix
  + Spiral Matrix II
  + Set Matrix Zeroes
  + Sparse Matrix Multiplication
  + Reshape the Matrix
  + Pyramid Transition Matrix
  + Random Flip Matrix
  + Spiral Matrix III
  + Matrix Block Sum
  + Matrix Diagonal Sum
  + Maximum Matrix Sum
  + Spiral Matrix IV
  + Construct Product Matrix
  + Modify the Matrix
  + Snake in Matrix
  + Search a 2D Matrix
  + Score after Flipping Matrix
  + Sort the Matrix Diagonally
  + Sum in a Matrix
  + Search a 2D Matrix II
  + Matrix Cells in Distance Order
  + Shortest Path in Binary Matrix
  + Rank transform of a Matrix
  + Lucky Numbers in a Matrix
  + Check if Matrix is X-Matrix
  + Build a Matrix with Conditions
  + Array of Objects to Matrix
  + Sum of Matrix after Queries
  + Matrix Similarity with Cycle Shifts
  + Match Alpha-Numeric Pattern in Matrix I
  + Longest increasing path in a Matrix
  + Reconstruct a 2-row binary matrix
  + Special positions in a binary matrix
  + Largest local values in a Matrix
  + Kth Smallest element in a sorted stack
  + Longest Line of Consecutive one in Matrix
  + Cells with odd values in a Matrix
  + The K weakest rows in a Matrix
  + Count Negative numbers in a Matrix
  + Maximum non-negative product in a Matrix
  + Median of a row-wise sorted Matrix
  + Maximum Strictly Increasing cells in a Matrix
  + Find a good subset of the Matrix
  + Find valid Matrix given row and column sums
  + Determine weather Matrix can be obtained by Rotation
  + Minimum operations to remove Adjacent Ones in Matrix
  + Minimum number of Flips to Convert Binary Matrix to Zero Matrix
  + Paths in Matrix who’s sum is divisible by K
  + Find the Kth smallest sum of a matrix with sorted rows
  + Disconnect Path in a Binary Matrix by at most one flip
  + Wildcard Matching
  + Camelcase Matching
  + Regular Expression Matching
  + Matchsticks to Square
  + Output Contest Matches
  + Repeated String Match
  + DI String Match
  + Number of Matching Sub-Sequences
  + Match Substring after Replacement
  + String Matching in an Array
  + Count of Matches in a Tournament
  + Count items matching a rule
  + All the matches of the league
  + Maximum matching of Players with Trainers
  + Flip binary tree to match pre-order traversal
  + The Score of Students Solving Math Expression
  + Numbers of Sub-arrays that match a pattern I
  + Numbers of Sub-arrays that match a pattern II

# 1, Two-Sum

## Description

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.

## Test Examples and Constraints

**Example 1:**

**Input:** nums = [2,7,11,15], target = 9

**Output:** [0,1]

**Explanation:** Because nums[0] + nums[1] == 9, we return [0, 1].

**Example 2:**

**Input:** nums = [3,2,4], target = 6

**Output:** [1,2]

**Example 3:**

**Input:** nums = [3,3], target = 6

**Output:** [0,1]

**Constraints:**

* 2 <= nums.length <= 104
* -109 <= nums[i] <= 109
* -109 <= target <= 109
* **Only one valid answer exists.**

**Follow-up:**Can you come up with an algorithm that is less than O(n2) time complexity?

## Solution

from typing import List

class Solution:

    def twoSum(self, nums: List[int], target: int) -> List[int]:

        i = 0

        nxt = i + 1

        while nxt < len(nums):

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

                return [i, nxt]

            i += 1

            nxt += 1

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11, Container with the Most Water

12, Integer to Roman

13, Roman to Integer

15, 3-Sum

16, 3-Sum Closest

, Implement StrStr

48, Rotate Image

49, Group Anagrams

76, Minimum Window Substring

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268, Missing Number

273, Integer to English Words

387, First Unique Character in a String

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819, Most Common Word

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642, Design Search Auto-Complete System

895, Maximum Frequency Stack

7, Reverse Integer

176, Second Highest Salary

763, Partition Labels

957, Prison Cells after N Days

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01 Matrix

Toeplitz Matrix

Transpose Matrix

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Sparse Matrix Multiplication

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Pyramid Transition Matrix

Random Flip Matrix

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