

Welcome to LeetCamp

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Housekeeping

- Every Thursday 6-7pm
- HRBB 115
- **Please check Slack regularly for updates!**

Diagnostic Results

- Have some form of experience
 - Algorithms - 80%
 - Big O Notation - 66%
 - **Data Structures - 66%**
 - **LeetCode - 66%**
- Many want to learn about interviewing/industry
- Time to make coding REAL! :)

Tentative Roadmap

- Topics (less is more! We probably won't cover all)
 - Arrays
 - Strings
 - Linked Lists
 - Maps
 - Stacks/Queues
 - Trees & Recursion
 - Graphs
 - Backtracking/Dynamic Programming
- Fun Stuff
 - Mock interview
 - Pair programming
 - Design questions
 - Fun competitions - fastest program/least memory usage/least compiler errors

UMPIRE Method (Codepath)

1. Understand
 - a. Do a dry run through given example with interviewer
 - b. Come up with edge cases
2. Match
 - a. Have I already seen a version of this problem before?
3. Pseudocode (Plan)
4. Implement (will be very easy if you pseudocode first!)
5. Reflect (Test & Verify)
 - a. Test your edge cases
6. Evaluate performance (Big-O Notation)

Question 1

1. Two Sum

Easy



12013



417



Favorite



Share

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

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

Example:

```
Given nums = [2, 7, 11, 15], target = 9,
```

```
Because nums[0] + nums[1] = 2 + 7 = 9,  
return [0, 1].
```

Two Sum (Western Digital Interview)

- Brute force

- Try every combination (2 for-loops)
- $O(n^2)$ - Quadratic Time

- With Hashmap

- 1 for-loop
- $O(n)$ - Linear Time

- 3 Sum (Facebook phone screen): <https://leetcode.com/problems/3sum/>

- How to find all *unique* triplets?

Search Insert Position

- Brute force
 - Search whole list - $O(N)$
- Binary Search
 - Can you do both iterative & recursive methods?
 - $O(\log(N))$
- Facebook Interview Q: <https://leetcode.com/problems/first-bad-version/>
- Microsoft Interview Q: <https://leetcode.com/problems/search-a-2d-matrix-ii/>

Toeplitz Matrix

Solution Ideas?

Diagnostic Jokes (randomly picked)

- How did the object oriented programmer become wealthy?
 - “Through inheritance, lol”
- Why was spaghetti afraid of penne?
 - “Because he was an imPASTA haHAA”
- There are 10 type of people in the world.
 - “Those who can read binary and those who can’t.”
- Why do programmers mix up Halloween and Christmas?
 - “Because Oct 31 = Dec 25”
- A blind man walks into a bar.
- A business major