

# 150 Questions: Data structures

Solve and understand these questions, make notes, watch solutions, and have fun. Don't just solve them to get a job, but to learn something new! These are mostly internship-level questions (easy-medium), but will help you in general with problem solving!

## Arrays

### Easy

- <https://leetcode.com/problems/roman-to-integer/>
- <https://leetcode.com/problems/valid-parentheses/>
- <https://leetcode.com/problems/remove-duplicates-from-sorted-array/>
- <https://leetcode.com/problems/remove-element/>
- <https://leetcode.com/problems/best-time-to-buy-and-sell-stock/>
- <https://leetcode.com/problems/best-time-to-buy-and-sell-stock-ii/>
- <https://leetcode.com/problems/intersection-of-two-arrays-ii/>
- <https://leetcode.com/problems/single-number/>
- <https://leetcode.com/problems/contains-duplicate/>
- <https://leetcode.com/problems/plus-one/>
- <https://leetcode.com/problems/move-zeroes/>
- <https://leetcode.com/problems/rotate-image/>

### Medium

- <https://leetcode.com/problems/3sum/>
- <https://leetcode.com/problems/4sum/>
- <https://leetcode.com/problems/find-first-and-last-position-of-element-in-sorted-array/>
- <https://leetcode.com/problems/group-anagrams/>
- <https://leetcode.com/problems/reduce-array-size-to-the-half/>
- <https://leetcode.com/problems/merge-intervals/>

## Linked list

### Easy

- <https://leetcode.com/problems/delete-node-in-a-linked-list/>
- <https://leetcode.com/problems/remove-nth-node-from-end-of-list/>
- <https://leetcode.com/problems/merge-two-sorted-lists/>
- <https://leetcode.com/problems/palindrome-linked-list/>
- <https://leetcode.com/problems/linked-list-cycle/>

### Medium

- <https://leetcode.com/problems/intersection-of-two-linked-lists/>
- <https://leetcode.com/problems/remove-linked-list-elements/>
- <https://leetcode.com/problems/middle-of-the-linked-list/>
- <https://leetcode.com/problems/merge-k-sorted-lists/>

## Binary search

### Easy

- <https://leetcode.com/problems/binary-search/>
- <https://leetcode.com/problems/intersection-of-two-arrays/>
- <https://leetcode.com/problems/first-bad-version/>
- <https://leetcode.com/problems/arranging-coins/>
- <https://leetcode.com/problems/search-insert-position/>

### Medium

- <https://leetcode.com/problems/search-in-rotated-sorted-array/>
- <https://leetcode.com/problems/find-first-and-last-position-of-element-in-sorted-array/>
- <https://leetcode.com/problems/kth-smallest-element-in-a-bst/>
- <https://leetcode.com/problems/find-peak-element/>
- <https://leetcode.com/problems/split-array-largest-sum/>

## Sliding window

Read

- [Leetcode Pattern 2 | Sliding Windows for Strings | by csgator | Leetcode Patterns](#)

Easy/Medium

- <https://leetcode.com/problems/longest-substring-without-repeating-characters/>
- <https://leetcode.com/problems/find-all-anagrams-in-a-string/description/>
- <https://leetcode.com/problems/minimum-window-substring/description/>
- <https://leetcode.com/problems/count-number-of-nice-subarrays/>
- <https://leetcode.com/problems/fruit-into-baskets/>

## 2 pointers

- <https://leetcode.com/problems/intersection-of-two-arrays/>
- <https://leetcode.com/problems/maximum-ascending-subarray-sum/>
- <https://leetcode.com/problems/backspace-string-compare/>
- <https://leetcode.com/problems/long-palindrome/>
- <https://leetcode.com/problems/fruit-into-baskets/>
- <https://leetcode.com/problems/max-consecutive-ones-iii/>
- <https://leetcode.com/problems/container-with-most-water/>

## Stacks, Queues

- Easy
  - <https://leetcode.com/problems/valid-parentheses/>
  - <https://leetcode.com/problems/implement-queue-using-stacks/>
  - <https://leetcode.com/problems/min-stack/>
- Medium
  - <https://leetcode.com/problems/design-circular-queue/>
  - <https://leetcode.com/problems/decode-string/>

- <https://leetcode.com/problems/open-the-lock/>
- <https://leetcode.com/problems/daily-temperatures/>
- <https://leetcode.com/problems/minimum-add-to-make-parentheses-valid/>

## BFS, DFS

### Read

- [Leetcode Pattern 1 | BFS + DFS == 25% of the problems — part 1](#)
- [Leetcode Pattern 1 | DFS + BFS == 25% of the problems — part 2](#)

### Questions

- <https://leetcode.com/problems/flood-fill/>
- <https://leetcode.com/problems/binary-tree-preorder-traversal/>
- <https://leetcode.com/problems/number-of-islands/>
- <https://leetcode.com/problems/walls-and-gates/>
- <https://leetcode.com/problems/max-area-of-island/>
- <https://leetcode.com/problems/number-of-provinces/>
- <https://leetcode.com/problems/perfect-squares/>
- <https://leetcode.com/problems/course-schedule/>
- <https://www.geeksforgeeks.org/detect-cycle-undirected-graph/>
- <https://leetcode.com/problems/word-ladder/>
- <https://leetcode.com/problems/01-matrix/>
- <https://leetcode.com/problems/rotting-oranges/>
- <https://leetcode.com/problems/perfect-squares/>
- <https://leetcode.com/problems/all-paths-from-source-to-target/>
- <https://leetcode.com/problems/number-of-closed-islands/>

## Recursion

### Easy

- [509. Fibonacci Number](#)
- [Reverse String](#)

- [24. Swap Nodes in Pairs](#)
- [206. Reverse Linked List](#)
- [Leetcode #700 Search in a Binary Search Tree](#)
- [70. Climbing Stairs](#)
- [Leetcode #50 Pow\(x, n\)](#)

## Backtracking

### Read

- [Leetcode Pattern 3 | Backtracking | by csgator | Leetcode Patterns](#)
- [A general approach to backtracking questions in Java \(Subsets, Permutations, Combination Sum, Palindrome Partitioning\)](#)

### Easy

- [Word Search](#)
- [Leetcode #78 Subsets](#)
- [90. Subsets II](#)
- [Letter Case Permutation](#)

### Medium

- [39. Combination Sum](#)
- [17. Letter Combinations of a Phone Number](#)
- [Combinations](#)
- [Leetcode : Combination Sum II](#)
- [216. Combination Sum III](#)
- [Combination Sum IV](#)
- [46. Permutations](#)
- [47. Permutations II](#)
- [31. Next Permutation](#)
- [51. N-Queens](#)

## Trees

### Read

- [Leetcode Pattern 0 | Iterative traversals on Trees | by csgator | Leetcode Patterns](#)

### Easy

- <https://leetcode.com/problems/binary-tree-preorder-traversal/>
- <https://leetcode.com/problems/binary-tree-inorder-traversal/>
- <https://leetcode.com/problems/binary-tree-postorder-traversal/>
- <https://leetcode.com/problems/validate-binary-search-tree/>
- <https://leetcode.com/problems/minimum-distance-between-bst-nodes/>
- <https://leetcode.com/problems/symmetric-tree/>
- <https://leetcode.com/problems/same-tree/>
- <https://leetcode.com/problems/path-sum/>
- <https://leetcode.com/problems/maximum-depth-of-binary-tree/>
- <https://leetcode.com/problems/convert-sorted-array-to-binary-search-tree/>

### Medium

- <https://leetcode.com/problems/validate-binary-search-tree/>
- <https://leetcode.com/problems/binary-search-tree-iterator/>
- <https://leetcode.com/problems/unique-binary-search-trees/>
- <https://leetcode.com/problems/serialize-and-deserialize-bst/>
- <https://leetcode.com/problems/binary-tree-right-side-view/>
- <https://leetcode.com/problems/binary-tree-level-order-traversal/>
- <https://leetcode.com/problems/binary-tree-level-order-traversal-ii/>
- <https://leetcode.com/problems/binary-tree-zigzag-level-order-traversal/>

## Dynamic programming

### Easy

- <https://leetcode.com/problems/maximum-subarray/>

- <https://leetcode.com/problems/fibonacci-number/>
- <https://leetcode.com/problems/climbing-stairs/>
- <https://leetcode.com/problems/min-cost-climbing-stairs/>
- <https://leetcode.com/problems/n-th-tribonacci-number/>

#### Medium

- <https://leetcode.com/problems/coin-change/>
- <https://leetcode.com/problems/minimum-falling-path-sum/>
- <https://leetcode.com/problems/minimum-cost-for-tickets/>
- <https://leetcode.com/problems/2-keys-keyboard/>
- <https://leetcode.com/problems/maximum-product-subarray/>
- <https://leetcode.com/problems/triangle/>
- <https://leetcode.com/problems/ones-and-zeroes/>
- <https://leetcode.com/problems/longest-arithmetic-subsequence/>
- <https://leetcode.com/problems/partition-equal-subset-sum/>
- <https://leetcode.com/problems/house-robber/>
- <https://leetcode.com/problems/decode-ways/>
- <https://leetcode.com/problems/word-break/>
- <https://leetcode.com/problems/edit-distance/>
- <https://leetcode.com/problems/longest-increasing-subsequence/>

## Graphs

#### Easy

- <https://leetcode.com/problems/employee-importance/>
- <https://leetcode.com/problems/find-the-town-judge/>

#### Medium

- <https://leetcode.com/problems/course-schedule-ii/>
- <https://leetcode.com/problems/redundant-connection/>
- <https://leetcode.com/problems/surrounded-regions/>
- <https://leetcode.com/problems/accounts-merge/>

- <https://leetcode.com/problems/network-delay-time/>
- <https://leetcode.com/problems/is-graph-bipartite/>
- <https://leetcode.com/problems/find-eventual-safe-states/>
- <https://leetcode.com/problems/keys-and-rooms/>
- <https://leetcode.com/problems/possible-bipartition/>
- <https://leetcode.com/problems/most-stones-removed-with-same-row-or-column/>
- <https://leetcode.com/problems/rotting-oranges/>
- <https://leetcode.com/problems/number-of-operations-to-make-network-connected/>

## Additional questions

- <https://leetcode.com/problems/longest-common-prefix/>
- <https://leetcode.com/problems/implement-trie-prefix-tree/>

## Random

- <https://leetcode.com/explore/>

## Videos

Some long videos, to revise or study in one long stretch!

- [Data Structures Easy to Advanced Course - Full Tutorial from a Google Engineer](#)
- [Introduction to Data Structures & Algorithms | Course Details & Prerequisites](#)
- [Algorithms Course - Graph Theory Tutorial from a Google Engineer](#)