Passed

Not passed

Not completed yet

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| # | Difficulty | Question Title | Solving Strategy | Note | Runtime | Memory |
| Better than this % of online submissions. Default to using Java and comparing against all Java submissions unless otherwise specified. | |
| 7 | Medium | Reverse Integer | Same strategy to Q8M | Did not pay attention on how the program should handle Integer overflow case (it needs to return 0 rather than Integer.MIN\_VALUE or Integer.MAX\_VALUE) | 99.91% | 5.25% |
| 8 | Medium | String to Integer (atoi) | Use Queue (FIFO usage) to store digits, and then form number. | Address Integer overflow without using long is the most tricky one and I’ve struggled on. Although I can manipulate the inequality equation by dividing Integer.MAX\_VALUE, I did not come up with a correct solution until viewing [this video](https://www.bilibili.com/video/BV1kV411i7kM).  Also, did not understand correctly (it says that except the leading space and -/+ as the first non-space character in the input String, every number after a non-number should be ignored) | 80.61% | 5.15% |
| 9 | Easy | Palindrome Number | Use Deque (double-ended Queue) to compare num.removeFirst() is equalt to num.removeLast() |  | 68.16% | 22.22% |
| 20 | Easy | Valid Parentheses | Use Stack to store left parentheses |  | 36.28% | 26.99% |
| 21 | Easy | Merge Two Sorted Lists | Iteration.  Use two pointers to track which elements we pick next from original list. | Will greatly speed up operation if we run out of one LinkedList by directly link result’s next empty node to the unprocessed original node. | ~~100.00%~~ | 70.56 % |
| 24 | Medium | Swap Nodes in Pairs | Iteration.  Manipulate pointers to achieve goal. |  | ~~100.00%~~ | 72.21 % |
| 53 | Easy | Maximum Subarray | Dynamic programming that stores max sum so far (by taking [this approach](https://www.bilibili.com/video/BV1Ez4y1S7WP))  Can’t use brute force (exceed time limit) | Note: there’s no way in Java to easily convert Array to List, you need to manually add all of them. | 34.33% | 99.74% |
| 50 |  | Pow(x, n) |  | Tried brute force ( O(N) ) and divide in halves (binary search, results in O(logN) ), but they both time out. |  |  |
| 56 | Medium | Merge Intervals | Same strategy as Q57M |  | 42.96% | 5.36% |
| 57 | Medium | Insert Interval | First insert the new interval into the correct location in the original list based on its start time, and then perform interval merging steps. | You CAN use int[] as the type in Java’s List, Queue, Map ADT.  primitives does not have a.compareTo(b) method. public int compareTo(int[] a, int[] b) {  return **a[0] - b[0]**;  }  will sort in ascending order. | 8.56% | 5.27% |
| 62 | Medium | Unique Paths | Use same strategy as Q63 | Much easier than Q63 (I solved Q63 before solving Q62) | ~~100%~~ | 15.82% |
| 63 | Medium | Unique Paths 2 | Use similar strategy of CSE 417 Baby Yoda assignment’s solution strategy. | Previously used DFS from start node and it will fail in edge cases.  [This solution video](https://www.bilibili.com/video/BV1tp4y1S7FW) reminds me the CSE 417 Baby Yoda and proceed from there. | ~~100%~~ | 46.08% |
| 71 | Medium | Simplify Path | Use Stack to store folder hierachy | We're always removing the most inner directory if we encounter .. , no other ADT operation, so use Stack | 56.41% | 5.71% |
| 93 | Medium | Restore IP Addresses | Use knapsack’s choose-explore-unchoose recursion method. | Previously tried the choose-explore-unchoose recursion by using int[4] to store each address block.  Did not remember that I don’t need to un-choose if I use substring until [I saw this solution video](https://www.bilibili.com/video/BV1354y1U7dr), as String will always passed as copy in function instances. | 61.05% | 78.10% |
| 96 | Medium | Unique Binary Search Trees |  | Did realize that I need to use bottom-up DP to solve this problem (it’s not a typical BST problem), like CSE 417’s B1irthday Sauerkraut problem’s bottom-up approach, but I do not know how to creatively use the property of BST to find how to transition states. |  |  |
| 98 | Medium | Validate Binary Search Tree |  | Overthink the problem being more difficult than I initially thought.  Need to use Long instead of Int as one edge case will overflow the Integer | ~~100%~~ | 89.54% |
| 99 | Medium | Recovery Binary Search Tree | Use the property of in-order traversal on a valid BST (in-order traversal will result in a sorted increasing array) | As soon as I recalled the property of in-order traversal of a valid BST by [watching this video](https://www.bilibili.com/video/BV1rE411B7XB), I come up my code afterwards. | 18.46% | 90.22% |
| 100 | Easy | Same Tree | Base case: check whether tree 1 and tree 2’s node is null.  Recursive case: iterate call left children and right children. | Comparing the Node object itself is not comparing the Node’s value | ~~100%~~ | 90.60% |
| 113 | Medium | Path Sum II | Use LinkedList to store values, only copy the new list if the remaining sum is 0 and we’re at the leaf node. | There may be a simpler solution that do not need a lot of base cases. | 32.52% | 56.52% |
| 114 | Medium | Flatten Binary Tree to Linked List | Use Queue to store Pre-order traversal, and repeatedly poll Queue to flatten tree. | Should immediately return if the root is empty. | 32.46% | 57.29% |
| 120 | Medium | Triangle | Use the same data structure List<List<Integer>> to store the min sum so far. |  | 25.15% | 76.77% |
| 121 | Easy | Best Time to Buy and Sell Stock | Use similar DP approach to Q122M, except I need to modify it so I will always buy from $0 profit ([video reference](https://www.bilibili.com/video/BV1GZ4y1c7RR)) | Greedy Algorithm would also work, which is why this question is marked as Easy. | 5.27% | 40.32% |
| 122 | Medium | Best Time to Buy and Sell Stock II | Use DP to store max profit so far if I hold (or not hold) this stock on the i-th day | Felt it was easier than Q121E | 5.52% | 6.58% |
| 123 | Hard | Best Time to Buy and Sell Stock III | Use similar DP approach to Q122M, except I need to use a third dimension to store transaction number ([video reference](https://www.bilibili.com/video/BV1GZ4y1c7RR)).  This is similar to CSE 417 Baby Yoda problem that need to use 3-rd dimension to store number of forces used. | Need to consider several edge cases that this state can’t exist (such as 2 transactions on the first day (i=0) | 13.46% | 43.88% |
| 133 | Medium | Clone Graph | Use BFS to copy all Node from the original Graph, and then use BFS to connect all Node from the cloned Graph together. |  | 51.57% | 7.23% |
| 138 | Medium | Copy List with Random Pointer | Use Two-Map method to store the 1-1 relationship (cue) between relative index and the Node object itself | Tricky to manipulate pointers and store the object in Two-Map when deep copying Nodes (before fill in their random pointer) | 31.90% | 45.73% |
| 141 | Easy | Linked List Cycle | Use HashSet to determine whether we’ve encountered a previous node (this means we have a cycle) |  | 8.54% | 5.12% |
| 143 | Medium | Reorder List | Use Dequeue to store nodes (hint: repeatedly use first and last of the “remaining” elements), and pop Stacks to return reversed Linked List.  Mistake: should not use Stack nor a regular Queue. | Forgot that size, isEmpty of Stack and Queue is a function call not a property. | 25.10% | 27.14% |
| 188 | Hard | Best Time to Buy and Sell Stock IV | Use identical approach to Q123H |  | 96.96% | 78.39% |
| 198 | Medium | House Robber | An evident and simple DP problem.  int[x][y] = amount of money I can earn so far on whether I robbed x house (y=1) or not robbed this house (y=0) |  | ~~100.00%~~ | 46.71% |
| 199 | Medium | Binary Tree Right Side View | Use two Queue method to find each layer in a tree.  Store the right-most side value while we proceed to the next layer. | I previously use a Map to store the right-most value with a layer number, but it’s inefficient. | 75.66% | 42.14% |
| 200 | Medium | Number of Islands | Same as Q695 | This question uses char[ ][ ] while Q695 uses int[ ][ ], so if I need to compare char[ ][ ] against a value (not the ASCII code), need to use char[r][c] == ‘1’ (note single quote mark) | 24.54% | 12.67% |
| 202 | Easy | Happy Number | Use HashMap-like mindset to store the square between 0 and 9, and use HashSet to determine whether it’s looping infinitely. | [This video](https://www.bilibili.com/video/BV1CA41187LQ) hints me on using HashSet to determine whether we’re looping. | 37.96% | 38.48% |
| 203 | Easy | Remove Linked List Elements | Use pointer fields to skip deleted value in original LinkedList.  Program will skip everything if the List only contains the value to be removed. | Need to use .next.next (jump one further) to achieve correct result.  Low memory usage compared to other Java implementations. | 74.26% | 98.24% |
| 205 | Easy | Isomorphic Strings | Use forward and reverse HashMap<Character, Character> . |  | 47.19% | 87.24% |
| 206 | Easy | Reverse Linked List | Use Stack to store nodes (hint: reverse the order), and pop Stacks to return reversed Linked List. | This solution does not create new ListNode, just through manipulating nodes of existing pointers. | 7.35% | 86.68% |
| 207 | Medium | Course Schedule | Same as Q210M | Succeed in Q210M before transferring the Topo Sort knowledge to Q207.  Can not skip a for-loop that creates all node in graph (I’m not adding neighbors in this step) even for node that has no neighbor. | 47.81% | 10.57% |
| 210 | Medium | Course Schedule II | Created a Directed Graph using Adjacency List and conduct topological sort on it to output a course schedule. | Solution is initially correct but non optimal (it passes the 1000 courses test but time out on the 2000 courses test) due to inefficient topo sort implementation (consistently find node with no incoming edges).  Used [this video](https://www.bilibili.com/video/BV1Ut411a74a) to create a more efficient Topological Sort algorithm using DFS and recursion. | 36.62% | 5.20% |
| 213 | Medium | House Robber II | Same approach as Q198, except I need to consider 3 cases as hinted by [this video](https://www.bilibili.com/video/BV1sK411u7ZY). | Adding a second for-loop does not change runtime complexity, as it will increase by constant factor not input size. | ~~100%~~ | 46.11% |
| 215 | Medium | Kth Largest Element in an Array | Use same approach as Q703E | Did not immediately realize that I should use regular PriorityQueue instead of PriorityQueue in reverse order. | 73.51% | 25.92% |
| 221 | Medium | Maximum Square | Use CSE 417 Homework 5 Q1 approach. | Forgot the definition of return number in CSE 417 Q1 | 60.42% | 10.70% |
| 224 | Hard | Basic Calculator | RPN calculator | I do remember Reverse Polish Operation beforehand. |  |  |
| 225 | Easy | Implement Stack using Queues | Rotate Queue when remove or peek the “Stack” |  | ~~100%~~ | 6.08% |
| 231 | Easy | Power of Two | Convert to binary string, check whether it only has one leading 1 using regular expression. | Did not realize that all negative values should be false.  Need to import regex package that’s not part of standard LeetCode testing environment.  import java.util.regex.\*; | 11.70% | 5.05% |
| 232 | Easy | Implement Queue using Stacks | Use two stacks to rotate content back to original order. |  | ~~100%~~ | 5.16% |
| 234 | Easy | Palindrome Linked List | Use Dequeue (hint: repeatedly compare first and last elements) to store nodes, and repeatedly pull nodes off from both ends to see whether it’s palindrome. | O(N) runtime complexity O(N) space complexity. There’s an O(1) space complexity solution. | 34.72% | 29.47% |
| 255 | Medium | Verify Preorder Sequence in Binary Search Tree | Use Stack and compare whether the right subtree is smaller than the parent.  Use [this approach](https://www.youtube.com/watch?v=Psce8aMuX8s), but independently write code | Should not use recursion as it won’t have access to the parent node. | 74.57% | 97.22% |
| 256 | Medium | Paint House | Use DP approach (similar to Q746E) |  | 67.97% | 50.00% |
| 258 | Easy | Add Digits | Use traditional while loop and stop if sum < 10 |  | 16.88% | 36.39% |
| 265 | Medium | Paint House II | Use same approach to Q256M | Note: there’s no built-in function in Java that translates Array to a List ADT.  The CSE 417 Baby Yoda programming question’s approach provides a hint (my code will work for an arbitrarily number of available forces) | 96.30% | 86.83% |
| 274 | Medium | H-Index | Reverse sort the array, and then iterate through this array. | Perhaps the most challenging part is to translate H-Index’s definition into the DP-like definition (if the arr[i] is larger than i + 1, then the author’s H-index is guaranteed to be at least i + 1)  Hence I won’t be able to think this quick if I’m not familiar with DP. | 12.36% | 6.60% |
| 290 | Easy | Word Pattern | Use 1-1 relationship (Two Map) strategy. |  | 45.73% | 33.26% |
| 300 | Medium | Longest Increasing Subsequence | Based on [this approach](https://www.bilibili.com/video/BV19b4y1R7K3) without looking at code, my code writeup is my own work. | CSE 417 problem | 34.49% | 57.78% |
| 309 | Medium | Best Time to Buy and Sell Stock with Cooldown | Same approach of Q122M, be careful how to handle 1-day cooldown and buy stock at day 2 (i=1) | Cue: cooldown period is fixed not varied, which makes problem easier. | 32.77% | 36.82% |
| 317 | Hard | Shortest Distance from All Buildings | Used DP bottom-up approach, conduct layered-BFS for all houses. For each empty land, store the steps to get to all houses, and sum it up to get total travel distance. | Cue: BFS guarantees shortest distance since it explores 1 level at a time.  Need to conduct 2-D layered BFS (using 2 Queue method), so I need to create an auxiliary data structure. (currently, this step is necessary for C++ and Java, but not Python as Python has built-in 2-D tuple) | 28.57% | 33.01% |
| 324 | Medium | Wiggle Sort II |  | [This video](https://www.bilibili.com/video/BV1Bz4y117Fr) hints me that this question tests how well you understand Quick Sort, so I better need to master it first. |  |  |
| 332 | Medium | Coin Change | Use DP (how many amount can we make change by using n number of coins). Use an approach similar to 2 Queues for layered BFS search to efficiently retrieve amount that I can make change using n-1 coins. | CSE 417 Long Form written problem | 10.04% | 5.11% |
| 337 | Medium | House Robber III | Use Q198 approach, and referenced from [this video](https://www.bilibili.com/video/BV1sK411u7ZY) regarding merging results from 2 trees | Use Q198 approach, faced challenges when combining results from left and right sub-tree.  Need to combine results when back-tracking, rather than before initiate recursion. | ~~100%~~ | 45.72% |
| 339 | Medium | Nested List Weight Sum | Same as Q364 | More straightforward than Q364. | ~~100.00%~~ | 74.89% |
| 347 | Medium | Top K Frequent Elements | Use Two Map to store Integer → Frequency and Frequency → Integer relationships. | By overriding TreeMap’s comparator method, we can iterate the Frequency → Integer Map in reverse order (of all Keys), so we can achieve top-K result. | 52.10% | 49.88% |
| 364 | Medium | Nested List Weight Sum II | First use recursion to find the depth, then use recursion to calculated weighted sum. |  | 11.29% | 22.58% |
| 366 | Medium | Find Leaves of Binary Tree | Perform DFS, increase layer only when we’re backtracking. | DFS operations can be improved by remove some auxiliary data structures. | 8.17% | 21.01% |
| 417 | Medium | Pacific Atlantic Water Flow | New after this [video](https://www.youtube.com/watch?v=krL3r7MY7Dc):  Still use bottom-up DP to determine whether we can go to the ocean, but use DFS in 4 directions to find inlands at which water can flow to ocean.  Original approach that does not pass all test cases:  Use DP concept (bottom-up) to fill out whether we can go to Pacific from 1 cell or go to Atlantic from 1 cell.  Cue to consider DP solution: if water can flow to Pacific at this cell, if the adjacent cell is higher/equal, then the adjacent cell can go to this case. | More edge cases to consider while scanning the entire 2-D array  Note: Inefficient DFS solution do exist (perform DFS on any cell; determine whether it can go to Pacific or Atlantic) | 82.55% | 65.31% |
| 451 | Medium | Sort Characters By Frequency | Use two Map (Character to Frequency) and (Frequency to list of Character) to construct result String. | A better solution using Heap do exist, although the two Map approach is my original approach. | 10.32% | 47.43% |
| 468 | Medium | Validate IP Address | Use Regex to test IPv4 and IPv6 pattern, use whether String to Integer to String to test for leading zero in IPv4 | This problem has more edge case than other problems prior to complete this.  The argument for str.split() is a regex not string literal.  . (period) in regex has special meaning, use this to represent .  .split("\\."); | 21.80% | 42.22% |
| 472 | Hard | Concatenated Words | Use recursion (DFS, [similar to this approach](https://www.bilibili.com/video/BV1QJ411W7Bn)) to repeatedly add words to the temp string.  Use pruning to stop recursing impossible solutions.  Then I found that I need to manipulate the concatenated string itself rather than brute force using words to form a string. | Pruning was the most difficult part (need to know you don’t need to dive further as no solution would found).  Constraint is 0 ≤ words[i].length ≤ 1000  Hence we need to check empty string (str.length == 0) case and skip it.  A [dynamic programming solution](https://www.bilibili.com/video/BV1gf4y1p7PF) is more optimal but I my original (inefficient) DFS is my own idea. |  |  |
| 473 | Medium | Matchsticks to Square | Use [this approach](https://www.bilibili.com/video/BV1D5411j7UE), with my modified code | Did not initially realize that pre-calculate the length of square side (total matchstick length ÷ 4) is the starting point to solve this problem. Then this problem is a regular choose-test-unchoose recursion problem. | 42.16% | 96.11% |
| 476 | Easy | Number Complement | Flip the binary representation of original string (no leading 0) and then zero out all 1 that’s precede the complement. | Initially know that I need to zero out all 1 that precede the complement (I don’t know how to use bit operation to do this trick) but [this video](https://www.bilibili.com/video/BV1PW411y7mv) provides a bit operation approach. | 5.13% | 5.09% |
| 496 | Easy | Next Greater Element I | Create a Monotonic increasing stack to store increasing number from original array, along with a HashMap storing all element in nums2 and its next greater element. | Did know to use Monotonic increasing Stack to solve this problem (because we always quest for a greater element than self), but did not know how to add values there nor how to query Stack’s value to determine the answer. | 99.02% | 10.76% |
| 509 | Easy | Fibonacci Number | Bottom-up approach, as it only needs two number before the n for each computation. | CSE 417 problem | ~~100%~~ | 82.92% |
| 513 | Medium | Find Bottom Left Tree Value | Use two Queue method to find layers, and store the first value in the layer right above the inner while loop. |  | 10.48% | 6.76% |
| 515 | Medium | Find Largest Value in Each Tree Row | Double Queue method from lecture. |  | 10.84% | 13.31% |
| 518 | Medium | Coin Change 2 | Used the same DP approach of 332, but the state transfer function is referred from [this video link](https://www.bilibili.com/video/BV1kX4y1P7M3). |  | 71.43% | 59.21% |
| 673 | Medium | Number of Longest Increasing Subsequence | Similar to Q300, and I’ve wrote the CSE 417 code to extract the sequence itself | Partially correct, it does not pass all test cases.  Did not realize that the number of unique increasing subsequence itself should also be stored as DP state. |  |  |
| 674 | Easy | Longest Continuous Increasing Subsequence | Use similar approach to Q53 | Need to assign return value to 1 at first instead of Integer.MIN\_VALUE, otherwise it will fail in case when array contains 1 number only. | 99.06% | 65.46% |
| 678 | Medium | Valid Parenthesis String | Use Q20E stack approach to count ( and ) pairs | [Did not consider](https://www.bilibili.com/video/BV1h34y1Q7oG?) when Stack only has ( and \*, cases such as (\*\*( should return false even though number of \* and ( matches.  Also, did not consider prioritize remove the right-most ( before consider removing \* from stack when we encounter ) | 45.60% | 53.88% |
| 690 | Medium | Employee Importance | Use two HashMap to store every employee’s importance and subordinates, where two Map’s Key is employee’s ID.  Cue for using HashMap: employee ID are guaranteed to be unique but values are not unique. | Forgot that Map remove value by providing a Key, as I’m thinking whether there’s other Map’s remove methods. | 8.39% | 6.92% |
| 695 | Medium | Max Area of Island | Use regular 2-D array iteration from top left to bottom right (row by row). When we encounter 1, recursively scan top down right left (order matters!) until we run out of recursion. | Two edge cases:  Need to use visited[][] to track whether array has been visited.  Need to account when grid has no island or the largest island is ⅃ shaped | 31.36% | 72.81% |
| 703 | Easy | Kth Largest Element in a Stream | Use PriorityQueue that stores only number that’s at or larger than k-th largest elements.  Did not even think about TreeSet since we allow duplicate. | Did realized to use PriorityQueue (but it does not have get(i) method that returns the i-th element in PriorityQueue), but did not realize that I only need to store numbers that’re at or larger than k-th largest element until I watch [this video](https://www.bilibili.com/video/BV1q4411y7tu). | 99.88% | 55.65% |
| 714 | Medium | Best Time to Buy and Sell Stock with Transaction Fee | Same approach to Q122M with only a little modification at selling stock. |  | 19.66% | 13.98% |
| 739 | Medium | Daily Temperatures | Use monotonic stack to store increasing temperatures, record the number of days you have to wait while popping out the stack to maintain monotonic property. | Attempted to use Q496E approach and add count variable that records how many times we pop the stack at first, it fails at edge case. Afterwards, [this video](https://www.bilibili.com/video/BV1xf4y1Y7Co) explains that the number of days you have to wait can be calculated during the process of popping out the stack. | 17.72% | 6.17% |
| 746 | Easy | Min Cost Climbing Stairs | Use DP approach to fill out whether I spend money or not to climb i-th stair. | Since it’s an Easy question, a more intuitive solution might exist if I don’t know DP beforehand. | 86.76% | 79.56% |
| 856 | Medium | Score of Parenthesis | Use DFS approach to combine return value of each sub-problem, which can easily fulfill A+B and 2\*A case.  This is not a regular parenthesis problem that employs Stack and no recursion, I immediately realized the difference by looking at how we count score of layered parenthesis pairs (A+B and 2\*A) | Initial solution causes inner layer continue to take care of parenthesis of outer layer on the right; hence need to follow [this DFS solution](https://leetcode.com/problems/score-of-parentheses/submissions/) that employs left and right boundary. | ~~100%~~ | 55.24% |
| 993 | Easy | Cousins in Binary Tree | Use 2-Queue method layered BFS traversal to find whether children with value of x and y has a same parent value. | Note: take advantage of this constraint (1 <= Node.val <= 100), and use int[2] instead of Map ADT if the number of element is fixed, which saves time and memory.  Array re-assignment by pre-filling value needs to be written like:  arr = new int[] {-1, -2, -3, -4}; | ~~100%~~ | 71.09% |
| 1021 | Easy | Remove Outermost Parentheses | Use same method of Q20E, except using an int rather than Stack to store number of left parenthesis so far |  | 5.32% | 5.49% |
| 1046 | Easy | Last Stone Weight | Use reverse Priority Queue | When you need to override the Comparator of this PriorityQueue and this PriorityQueue stores primitive-typed values, you need to use the wrapper class in the Comparator.  new Comparator<Integer>() {  public int compare(**Integer** a, **Integer** b) {  return -a.compareTo(b);  }  }); | 97.53% | 5.28% |
| 1108 | Easy | Defanging an IP Address | Use str.replaceAll() one-liner. | The first argument (find) for str.replaceAll() is a regex not string literal, but the second argument (replacement) is a string literal.  . (period) in regex has special meaning, use this to represent .  .split("\\."); | 25.09% | 63.97% |
| 1583 | Medium | Count Unhappy Friends |  | Similar to CSE 417 Homework 1 (Stable Matching problem using Gale Shapley algorithm) |  |  |
| 1945 | Easy | Sum of Digits of String After Convert | (JavaScript)  Use Array.reduce and Array.map to efficiently iterate the entire array. | JavaScript’s array.foreach and similar functions (containing an anonymous function) is noticeably simplier than Java | 70.99% (JavaScript) | 93.13% (JavaScript) |