**CTC 03 Curriculum**

| Ngày | Nội dung | Số bài |
| --- | --- | --- |
| Yêu cầu chữa bài | * Assignment 01: Leetcode 118 * Assignment 02: Leetcode 524 - Done * Assignment 03 - Leetcode 15 - Done * Assignment 03 - Leetcode 299 * Assignment 03 - Leetcode 238 - Done * Assignment 03 - Leetcode 763 - Done * Assignment 03 - Leetcode 1248 - Done * Assignment 04 - Leetcode 560 - Done * Assignment 04 - Leetcode 1234 * Assignment 04 - Leetcode 632 - Done * Assignment 05 - Leetcode 856 * Assignment 05 - Leetcode 503 * Assignment 08 - Leetcode 218 * Assignment 08 - Leetcode 378 * Assignment 08 - Leetcode 659 | 2 |
| Day 1 (Deep Dive into BigO) | * Deep Dive into BigO   + CTC Introduction   + Slide   - Làm bài tập trên lớp   * + [ProtonX Exercise](https://drive.google.com/file/d/1ehHNLWeiolaAaubitg_Go1nan85sMft9/view?usp=sharing)   + [Leetcode 709](https://leetcode.com/problems/to-lower-case/) To Lower Case (1)   - Bài tập về nhà   * + Bài tập ôn tập Python     - [Leetcode 169](https://leetcode.com/problems/majority-element/). Majority Element [Easy]     - [Leetcode 1480](https://leetcode.com/problems/running-sum-of-1d-array/discuss/) Running Sum of 1d Array * Dự bị   + [Leetcode 242](https://leetcode.com/problems/valid-anagram/). Valid Anagram [Easy]   + [Leetcode 7](https://leetcode.com/problems/reverse-integer/). Reverse Integer [Easy]   + [Leetcode 66](https://leetcode.com/problems/plus-one/). Plus One   + [Leetcode 118](https://leetcode.com/problems/pascals-triangle/). Pascal's Triangle [Easy]   + [Leetcode 238](https://leetcode.com/problems/product-of-array-except-self/) Product of Array Except Self | 5 |
| Day 2 (String) | - String   * + Slide     - [Chuỗi](https://docs.google.com/presentation/d/1fhHwq_NsY4mSgAyrMAbfsACCiotcEdrlqx4BGT8Fi6k/edit#slide=id.p)     - [Palindrome](https://docs.google.com/presentation/d/1dCpccCMCrpn_Ct0Vbwzp1BL41RTSxnRHZR8Ty3wYLUU/edit#slide=id.g99ec5efc34_0_105)     - [Reverse String](https://docs.google.com/presentation/d/1qoDJDPhz_Gelx4PMnt-4BB9WSFknofn7sxgAmFpOPGQ/edit#slide=id.gaf255ec3ef_0_98)     - [709](https://docs.google.com/presentation/d/183D63YKZWCrmgu1Tloqd-MA_5ZJHHSKtjr5c8LJMwaY/edit#slide=id.ga5c3dfed70_0_0)   + Demo Split() function   + Demo Palindrome function   + Demo Reverse Function   - Làm bài tập trên lớp   * + Bài toán xử lý chuỗi     - [Leetcode 345](https://leetcode.com/problems/reverse-vowels-of-a-string/). Reverse Vowels of a String [Easy] **(1)**   + Bài toán đếm     - [Leetcode 1180](https://leetcode.com/problems/count-substrings-with-only-one-distinct-letter/). Count Substrings with Only One Distinct Letter [Premium] [Easy] **(3)**   + Kiểm tra chuỗi     - [Leetcode 125](https://leetcode.com/problems/valid-palindrome/). Valid Palindrome [Easy] **(2)**     - [Leetcode 290](https://leetcode.com/problems/word-pattern/) Word Pattern [Easy]   - Bài tập về nhà (Bỏ các bài Premium)   * + Bài toán xử lý chuỗi     - [Leetcode 1119](https://leetcode.com/problems/remove-vowels-from-a-string/). Remove Vowels from a String [Premium] [Easy]     - [Leetcode 1108](https://leetcode.com/problems/defanging-an-ip-address/). Defanging an IP Address [Easy]     - [Leetcode 1347](https://leetcode.com/problems/minimum-number-of-steps-to-make-two-strings-anagram/). Minimum Number of Steps to Make Two Strings Anagram [Medium]     - [Leetcode 1247](https://leetcode.com/problems/minimum-swaps-to-make-strings-equal/). Minimum Swaps to Make Strings Equal [Medium]     - [Leetcode 709](https://leetcode.com/problems/to-lower-case/). To Lower Case [Easy]     - [Leetcode 1410](https://leetcode.com/problems/html-entity-parser/). HTML Entity Parser [Medium]   + Bài toán đếm     - [Leetcode 1180](https://leetcode.com/problems/count-substrings-with-only-one-distinct-letter/). Count Substrings with Only One Distinct Letter [Premium] [Easy]     - [Leetcode 1221](https://leetcode.com/problems/split-a-string-in-balanced-strings/). Split a String in Balanced Strings [Easy]     - [Leetcode 1614](https://leetcode.com/problems/maximum-nesting-depth-of-the-parentheses/) Maximum Nesting Depth of the Parentheses     - [Leetcode 791](https://leetcode.com/problems/custom-sort-string/) Custom Sort String   + Chia / Sinh chuỗi     - [Leetcode 544](https://leetcode.com/problems/output-contest-matches/). Output Contest Matches [Premium] [Medium]   + Kiểm tra chuỗi     - [Leetcode 125](https://leetcode.com/problems/valid-palindrome/). Valid Palindrome [Easy]     - [Leetcode 844](https://leetcode.com/problems/backspace-string-compare/). Backspace String Compare [Easy]     - [Leetcode 1433](https://leetcode.com/problems/check-if-a-string-can-break-another-string/). Check If a String Can Break Another String [Medium]     - [Leetcode 925](https://leetcode.com/problems/long-pressed-name/). Long Pressed Name [Easy]   + Subsequence (Two Pointers)     - [Leetcode 524](https://leetcode.com/problems/longest-word-in-dictionary-through-deleting/). Longest Word in Dictionary through Deleting [Medium]   + Bài toán liên quan tới khoảng cách     - [Leetcode 243](https://leetcode.com/problems/shortest-word-distance/). Shortest Word Distance [Premium] [Easy]   + **Tìm chuỗi lặp lại** (CTC 03)     - [Leetcode 459](https://leetcode.com/problems/repeated-substring-pattern/) Repeated Substring Pattern     - [Leetcode 1566](https://leetcode.com/problems/detect-pattern-of-length-m-repeated-k-or-more-times/) Detect Pattern of Length M Repeated K or More Times   + Bài toán dịch Roman     - Xuôi:       * [Leetcode 13](https://leetcode.com/problems/roman-to-integer/): Roman to Integer     - Ngược:       * [Leetcode 12](https://leetcode.com/problems/integer-to-roman/): Integer to Roman   + Đảo ngược chuỗi     - Leetcode 345: Reverse Vowels of a String     - [Leetcode 344](https://leetcode.com/problems/reverse-string/): Reverse String     - [Leetcode 541](https://leetcode.com/problems/reverse-string-ii/): Reverse String ||     - [Leetcode 557](https://leetcode.com/problems/reverse-words-in-a-string-iii/): Reverse Words in a String III | 16 + 5 |
| Day 3 (Array) | - Array   * + Slide   - Làm bài tập trên lớp   * + Leetcode   + N phần tử trong mảng thỏa mãn một điều kiện K cho trước     - [Leetcode 1](https://leetcode.com/problems/two-sum/). Two Sum [Easy] (3)   + Ma trận     - [Leetcode 48](https://leetcode.com/problems/rotate-image/). Rotate Image [Medium]   + Phần tử biến mất hoặc lặp lại     - [Leetcode 442](https://leetcode.com/problems/find-all-duplicates-in-an-array/). Find All Duplicates in an Array [Medium] (4)   + [Leetcode 268](https://leetcode.com/problems/missing-number/). Missing Number [Easy] (1)   + [Leetcode 896.](https://leetcode.com/problems/monotonic-array/) Monotonic Array (2)   - Bài tập về nhà   * + N phần tử trong mảng thỏa mãn một điều kiện K cho trước     - [Leetcode 15](https://leetcode.com/problems/3sum/). 3Sum [Medium]     - [Leetcode 1679](https://leetcode.com/problems/max-number-of-k-sum-pairs/) Max Number of K-Sum Pairs [Medium]   + Ma trận     - [Leetcode 1051](https://leetcode.com/problems/height-checker/). Height Checker [Easy]     - [Leetcode 1324](https://leetcode.com/problems/print-words-vertically/submissions/). Print Words Vertically [Medium]     - [Leetcode 189](https://leetcode.com/problems/rotate-array/). Rotate Array [Easy] **(3)**     - [Leetcode 566](https://leetcode.com/problems/reshape-the-matrix/). Reshape the Matrix [Easy]     - [Leetcode 1572](https://leetcode.com/problems/matrix-diagonal-sum/) Matrix Diagonal Sum [Easy]   + Dồn tích     - [Leetcode 238](https://leetcode.com/problems/product-of-array-except-self/). Product of Array Except Self [Medium]   + Phần tử biến mất hoặc lặp lại **(O(N) và O(1))**     - [Leetcode 448](https://leetcode.com/problems/find-all-numbers-disappeared-in-an-array/). Find All Numbers Disappeared in an Array [Easy] **(5)**   + Bài toán đếm     - [Leetcode 1248](https://leetcode.com/problems/count-number-of-nice-subarrays/). Count Number of Nice Subarrays [Medium]     - [Leetcode 299](https://leetcode.com/problems/bulls-and-cows/). Bulls and Cows [Easy]   + Bài toán chia mảng     - [Leetcode 763](https://leetcode.com/problems/partition-labels/). Partition Labels [Medium]   + CTC 03 Về nhà     - [Leetcode 1672](https://leetcode.com/problems/richest-customer-wealth/) Richest Customer Wealth | 13 |
| Day 4 (Two Pointers) | - Two Pointers   * + Slide   - Làm bài tập trên lớp   * + Thực hành merge 2 sorted array (1)   + [Leetcode 88](https://leetcode.com/problems/merge-sorted-array/). Merge Sorted Array [Easy] (2)   + [Leetcode 845](https://leetcode.com/problems/longest-mountain-in-array/). Longest Mountain in Array [Medium] (4)   + [Leetcode 1004](https://leetcode.com/problems/max-consecutive-ones-iii/). Max Consecutive Ones III [Medium] (3)   - Bài tập về nhà   * + So sánh mảng     - [Leetcode 350](https://leetcode.com/problems/intersection-of-two-arrays-ii/). Intersection of Two Arrays II [Easy]   + Tìm chuỗi con thoả mãn một điều kiện cho trước     - [Leetcode 1100](https://leetcode.com/problems/find-k-length-substrings-with-no-repeated-characters/). Find K-Length Substrings With No Repeated Characters [Premium]     - [Leetcode 159](https://leetcode.com/problems/longest-substring-with-at-most-two-distinct-characters/). Longest Substring with At Most Two Distinct Characters [Premium]   + **Tìm mảng con thoả mãn một điều kiện cho trước**     - [Leetcode 1640](https://leetcode.com/problems/check-array-formation-through-concatenation/) Check Array Formation Through Concatenation     - [Leetcode 560](https://leetcode.com/problems/subarray-sum-equals-k/). Subarray Sum Equals K [Medium]     - [Leetcode 1234](https://leetcode.com/problems/replace-the-substring-for-balanced-string/). Replace the Substring for Balanced String [Medium]     - [Leetcode 632](https://leetcode.com/articles/smallest-range/). Smallest Range Covering Elements from K Lists [Hard]     - [Leetcode 487](https://leetcode.com/problems/max-consecutive-ones-ii/). Max Consecutive Ones II [Premium]     - [Leetcode 159](https://leetcode.com/problems/longest-substring-with-at-most-two-distinct-characters/). Longest Substring with At Most Two Distinct Characters [Premium]     - [Leetcode 11](https://leetcode.com/problems/container-with-most-water/). Container With Most Water [Medium]     - [Leetcode 3](https://leetcode.com/problems/longest-substring-without-repeating-characters/). Longest Substring Without Repeating Characters [Medium]     - [Leetcode 1588](https://leetcode.com/problems/sum-of-all-odd-length-subarrays/) Sum of All Odd Length Subarrays (Easy but Hards) - [Sol](https://web.stanford.edu/class/cs9/sample_probs/SubarraySums.pdf)   + Di chuyển phần tử     - [Leetcode 283](https://leetcode.com/problems/move-zeroes/). Move Zeroes [Easy] | 10 + 4 |
| Day 5 (Stack + Queue) | * Stack & Queue   + Slide   - Làm bài tập trên lớp   * + Kiểm tra chuỗi     - [Leetcode 20](https://leetcode.com/problems/valid-parentheses/). Valid Parentheses (1)   + Nén chuỗi     - [Leetcode 1544](https://leetcode.com/problems/make-the-string-great/) Make The String Great     - [Leetcode 1047](https://leetcode.com/problems/remove-all-adjacent-duplicates-in-string/). Remove All Adjacent Duplicates In String (2)     - [Leetcode 443](https://leetcode.com/problems/string-compression/): String Compression   + Duỗi chuỗi     - [Leetcode 394](https://leetcode.com/problems/decode-string/). Decode String (5)   + Tìm phần tử lớn hơn     - [Leetcode 496](https://leetcode.com/problems/next-greater-element-i/). Next Greater Element I (3)     - [Leetcode 739](https://leetcode.com/problems/daily-temperatures/). Daily Temperatures (4)   - Bài tập về nhà   * + Bài toán thay đổi chuỗi để phù hợp với điều kiện K cho trước     - [Leetcode 1249](https://leetcode.com/problems/minimum-remove-to-make-valid-parentheses/). Minimum Remove to Make Valid Parentheses     - [Leetcode 1578](https://leetcode.com/problems/minimum-deletion-cost-to-avoid-repeating-letters/) Minimum Deletion Cost to Avoid Repeating Letters     - [Leetcode 402](https://leetcode.com/problems/remove-k-digits/) Remove K Digits   + Kiểm tra chuỗi     - [Leetcode 678](https://leetcode.com/problems/valid-parenthesis-string/). Valid Parenthesis String     - [Leetcode 856](https://leetcode.com/problems/score-of-parentheses/). Score of Parentheses     - [Leetcode 946](https://leetcode.com/problems/validate-stack-sequences/). Validate Stack Sequences     - [Leetcode 609](https://leetcode.com/problems/find-duplicate-file-in-system/). Find Duplicate File in System     - [Leetcode 503](https://leetcode.com/problems/next-greater-element-ii/). Next Greater Element II     - [Leetcode 1441](https://leetcode.com/problems/build-an-array-with-stack-operations/) Build an Array With Stack Operations     - [Leetcode 1106](https://leetcode.com/problems/parsing-a-boolean-expression/) Parsing A Boolean Expression     - [Leetcode 1063](https://leetcode.com/problems/number-of-valid-subarrays/). Number of Valid Subarrays [Premium] [Hard]   + Thao tác với chuỗi - Nén chuỗi/ Duỗi chuỗi     - [Leetcode 1003](https://leetcode.com/problems/check-if-word-is-valid-after-substitutions/). Check If Word Is Valid After Substitutions   + Bài toán liên quan tới hàng đợi     - [Leetcode 346](https://leetcode.com/problems/moving-average-from-data-stream/) Moving Average from Data Stream [Premium] [Easy] | 12 + 2 |
| Day 6 (Sort) | * Chữa bài tập Two Pointers   + [Leetcode 1234](https://leetcode.com/problems/replace-the-substring-for-balanced-string/) * Đệ quy   + [Slide](https://docs.google.com/presentation/d/1XvVne8Va7_VNZap8-JwjW6oQjhq4XxhiYmudJnTAtwM/edit)   + [Luyện tập Đệ quy](https://docs.google.com/document/d/1KBM741HJAj7H-hxknTMPDNRjznlx1iAbtraATnDo_5U/edit) * Sort   + [Leetcode 88](https://leetcode.com/problems/merge-sorted-array/) Merge Sorted Array [Easy]   + [Slide](https://docs.google.com/presentation/d/1oLBw370a7-MQbgy7CQ4HuA5RqZ8iPycZ7dsWKNaOrkg/edit) * Làm bài tập trên lớp   + [Leetcode 1528](https://leetcode.com/problems/shuffle-string/): Shuffle String   + [Leetcode 1502](https://leetcode.com/problems/can-make-arithmetic-progression-from-sequence/) Can Make Arithmetic Progression From Sequence   + [Leetcode 1333](https://leetcode.com/problems/filter-restaurants-by-vegan-friendly-price-and-distance/) Filter Restaurants by Vegan-Friendly, Price and Distance   + [Leetcode 253](https://leetcode.com/problems/meeting-rooms-ii/): Meeting Rooms 2 [Premium] * Bài tập về nhà   + Sort 2 chiều     - [Leetcode 1370](https://leetcode.com/problems/increasing-decreasing-string/). Increasing Decreasing String [Easy]   + Ma trận     - [Leetcode 1329.](https://leetcode.com/problems/sort-the-matrix-diagonally/) Sort the Matrix Diagonally [Medium]   + Liên quan tới sắp xếp công việc / thời gian     - [Leetcode 1366](https://leetcode.com/problems/rank-teams-by-votes/). Rank Teams by Votes [Medium]     - [Leetcode 853](https://leetcode.com/problems/car-fleet/). Car Fleet [Medium]   + Chuỗi     - [Leetcode 1451](https://leetcode.com/problems/rearrange-words-in-a-sentence/discuss/?currentPage=1&orderBy=most_votes&query=) Rearrange Words in a Sentence     - [Leetcode 937](https://leetcode.com/problems/reorder-data-in-log-files/) Reorder Data in Log Files | 7 + 2 |
| Day 7 (Greedy) | * Chữa bài tập Stack + Queue * Giải thuật tham lam   + [Leetcode 860](https://leetcode.com/problems/lemonade-change/). Lemonade Change (1)   + [Leetcode 252](https://leetcode.com/problems/meeting-rooms/): Meeting Rooms [Premium] (2)   + [Slide](https://docs.google.com/presentation/d/1OusswTD5QPW3kuYHjRobrg8ZLItTJVk-GhyT79BF1y4/edit#slide=id.g8c6d10cce4_0_11) * Làm bài tập trên lớp   + [Leetcode 455](https://leetcode.com/problems/assign-cookies/) Assign Cookies (3)   + [Leetcode 1276](https://leetcode.com/problems/number-of-burgers-with-no-waste-of-ingredients/) Number of Burgers with No Waste of Ingredients (4)   + [Leetcode 56](https://leetcode.com/problems/merge-intervals/) Merge Intervals   + [Leetcode 1518](https://leetcode.com/problems/water-bottles/) Water Bottles * Bài tập về nhà   + Chứng khoán     - [Leetcode 121](https://leetcode.com/problems/best-time-to-buy-and-sell-stock/) Best Time to Buy and Sell Stock   + Bài toán phân bổ nhị phân     - [Leetcode 1029.](https://leetcode.com/problems/two-city-scheduling/) Two City Scheduling [Medium]   + Liên quan tới sắp xếp công việc / thời gian     - [Leetcode 1196.](https://leetcode.com/problems/how-many-apples-can-you-put-into-the-basket/) How Many Apples Can You Put into the Basket [Premium]     - [Leetcode 122.](https://leetcode.com/problems/best-time-to-buy-and-sell-stock-ii/) Best Time to Buy and Sell Stock II [Easy]     - [Leetcode 759.](https://leetcode.com/problems/employee-free-time/) Employee Free Time [Hard] [Premium]   + Kiểm tra chuỗi     - [Leetcode 392.](https://leetcode.com/problems/is-subsequence/) Is Subsequence [Easy]     - [Leetcode 921.](https://leetcode.com/problems/minimum-add-to-make-parentheses-valid/) Minimum Add to Make Parentheses Valid [Medium]   + Tạo chuỗi / mảng     - [Leetcode 406.](https://leetcode.com/problems/queue-reconstruction-by-height/) Queue Reconstruction by Height [Medium]     - [Leetcode 1338.](https://leetcode.com/problems/reduce-array-size-to-the-half/) Reduce Array Size to The Half [Medium] | 11 + 2 |
| Day 8 (Heap) | * Đống   + [Slide](https://docs.google.com/presentation/d/1_3UQYz9P17f4ezP4JDiEEhiYEfIbvrHHCoaFpyGujY0/edit) * Làm bài tập trên lớp   + [Leetcode 1046](https://leetcode.com/problems/last-stone-weight/) Last Stone Weight (1)   + [Leetcode 767](https://leetcode.com/problems/reorganize-string/) Reorganize String (2)   + [Leetcode 215](https://leetcode.com/problems/kth-largest-element-in-an-array/) Kth Largest Element in an Array * Bài tập về nhà   + Bài toán sắp xếp dựa trên trọng số     - [Leetcode 1054](https://leetcode.com/problems/distant-barcodes/). Distant Barcodes [Medium]     - [Leetcode 218](https://leetcode.com/problems/the-skyline-problem/). The Skyline Problem [Hard]   + Bài toán chia mảng     - [Leetcode 659](https://leetcode.com/problems/split-array-into-consecutive-subsequences/). Split Array into Consecutive Subsequences [Medium]   + Số phần tử lớn nhất / nhỏ nhất trong một mảng     - [Leetcode 973](https://leetcode.com/problems/k-closest-points-to-origin/). K Closest Points to Origin [Medium]     - [Leetcode 378](https://leetcode.com/problems/kth-smallest-element-in-a-sorted-matrix/). Kth Smallest Element in a Sorted Matrix [Medium]     - [Leetcode 692](https://leetcode.com/problems/top-k-frequent-words/). Top K Frequent Words [Medium]     - [Leetcode 857](https://leetcode.com/problems/minimum-cost-to-hire-k-workers/). Minimum Cost to Hire K Workers [Hard]     - [Leetcode 373](https://leetcode.com/problems/find-k-pairs-with-smallest-sums/) Find K Pairs with Smallest Sums   + Phần tử lớn nhất/nhỏ nhất trong K phần tử     - [Leetcode 239](https://leetcode.com/problems/sliding-window-maximum/). Sliding Window Maximum | 10 |
| Day 9 (Linked List) | * Linked List   + Slide * Làm bài tập trên lớp   + [Leetcode 237](https://leetcode.com/problems/delete-node-in-a-linked-list/) Delete Node in a Linked List   + [Leetcode 876](https://leetcode.com/problems/middle-of-the-linked-list/) Middle of the Linked List   + [Leetcode 206](https://leetcode.com/problems/reverse-linked-list/) Reverse Linked List * Bài tập về nhà   + Thay đổi node trong Linked List     - [Leetcode 369](https://leetcode.com/problems/plus-one-linked-list/). Plus One Linked List [Premium]     - [Leetcode 725](https://leetcode.com/problems/split-linked-list-in-parts/). Split Linked List in Parts [Medium]     - [Leetcode 24](https://leetcode.com/problems/swap-nodes-in-pairs/). Swap Nodes in Pairs     - [Leetcode 708](https://leetcode.com/problems/insert-into-a-sorted-circular-linked-list/). Insert into a Sorted Circular Linked List [Premium]     - [Leetcode 148](https://leetcode.com/problems/sort-list/). Sort List     - [Leetcode 86](https://leetcode.com/problems/partition-list/). Partition List   + Tạo Linked List     - [Leetcode 445](https://leetcode.com/problems/add-two-numbers-ii/). Add Two Numbers II   + Duyệt Linked List     - [Leetcode 21](https://leetcode.com/problems/merge-two-sorted-lists/). Merge Two Sorted Lists     - [Leetcode 234](https://leetcode.com/problems/palindrome-linked-list/). Palindrome Linked List     - [Leetcode 92](https://leetcode.com/problems/reverse-linked-list-ii/). Reverse Linked List II     - [Leetcode 1019](https://leetcode.com/problems/next-greater-node-in-linked-list/). Next Greater Node In Linked List   + Node chung     - [Leetcode 160](https://leetcode.com/problems/intersection-of-two-linked-lists/). Intersection of Two Linked Lists [Easy] | 13 + 2 |
| Day 10 (Graph) | * Graph   + Slide * Làm bài tập trên lớp   + [Leetcode 997](https://leetcode.com/problems/find-the-town-judge/) Find the Town Judge (1)   + [Leetcode 1042](https://leetcode.com/problems/flower-planting-with-no-adjacent/) Flower Planting With No Adjacent (2) * Bài tập về nhà   + [Leetcode 1387](https://leetcode.com/problems/sort-integers-by-the-power-value/) Sort Integers by The Power Value (Medium) | 3 |
| Day 11 (BFS) | * BFS   + Slide * Làm bài tập trên lớp   + [Leetcode 690](https://leetcode.com/problems/employee-importance/) Employee Importance [Easy] (1)   + [Leetcode 994](https://leetcode.com/problems/rotting-oranges/) Rotting Orange [Medium]   + [Leetcode 200](https://leetcode.com/problems/number-of-islands/). Number of Islands [Medium] * Làm bài tập về nhà   + Bài toán tìm đường thoả mãn điều kiện K cho trước     - [Leetcode 752](https://leetcode.com/problems/open-the-lock/). Open the Lock [Medium]     - [Leetcode 1129](https://leetcode.com/problems/shortest-path-with-alternating-colors/). Shortest Path with Alternating Colors [Medium]     - [Leetcode 909](https://leetcode.com/problems/snakes-and-ladders/solution/). Snakes and Ladders [Medium]   + Kiểm tra đường     - [Leetcode 1391](https://leetcode.com/problems/check-if-there-is-a-valid-path-in-a-grid/). Check if there is a Valid Path in a Grid [Medium]     - [Leetcode 1162](https://leetcode.com/problems/as-far-from-land-as-possible/). As Far from Land as Possible [Medium]     - [Leetcode 417](https://leetcode.com/problems/pacific-atlantic-water-flow/). Pacific Atlantic Water Flow [Medium]   + Mê cung     - [Leetcode 529](https://leetcode.com/problems/minesweeper/). Minesweeper [Medium]     - [Leetcode 490](https://leetcode.com/problems/the-maze/). The Maze [Premium] [Medium]     - [Leetcode 505](https://leetcode.com/problems/the-maze-ii/). The Maze II [Premium] [Medium]     - [Leetcode 499](https://leetcode.com/problems/the-maze-iii/). The Maze III [Premium] [Hard] | 9 + 3 |
| Day 12 (DFS) | * Chữa bài tập trên lớp   + [Leetcode 234](https://leetcode.com/problems/palindrome-linked-list/)   + [Leetcode 21](https://leetcode.com/problems/merge-two-sorted-lists/) * DFS   + Slide * Làm bài tập trên lớp   + Dạng đảo     - [Leetcode 200](https://leetcode.com/problems/number-of-islands/). Number of Islands [Medium] (1)   + Dạng tìm cycle     - [Leetcode 1059](https://leetcode.com/problems/all-paths-from-source-lead-to-destination/) All Paths from Source Lead to Destination [Premium] (3) * Làm bài tập về nhà   + Bài toán tìm vùng / đảo     - [Leetcode 695](https://leetcode.com/problems/max-area-of-island/). Max Area of Island [Medium]     - [Leetcode 1254](https://leetcode.com/problems/number-of-closed-islands/). Number of Closed Islands [Medium]     - [Leetcode 130](https://leetcode.com/problems/surrounded-regions/). Surrounded Regions [Medium]     - [Leetcode 934](https://leetcode.com/problems/shortest-bridge/). Shortest Bridge [Medium] * Bài toán tìm đường thoả mãn điều kiện K cho trước   + - [Leetcode 841](https://leetcode.com/problems/keys-and-rooms/). Keys and Rooms [Medium]     - [Leetcode 1306](https://leetcode.com/problems/jump-game-iii/). Jump Game III [Medium]     - [Leetcode 399](https://leetcode.com/problems/evaluate-division/). Evaluate Division [Medium]     - [Leetcode 133](https://leetcode.com/problems/clone-graph/). Clone Graph [Medium]   + Kiểm tra chu trình trong đồ thị **có hướng**      - [Leetcode 207](https://leetcode.com/problems/course-schedule/). Course Schedule [Medium]     - [Leetcode 210](https://leetcode.com/problems/course-schedule-ii/). Course Schedule II [Medium]     - [Leetcode 802](https://leetcode.com/problems/find-eventual-safe-states/). Find Eventual Safe States [Medium]   + Topo     - [Leetcode 1462](https://leetcode.com/problems/course-schedule-iv/). Course Schedule IV [Medium]   + Bài toán tô màu đồ thị (Graph Coloring)     - [Leetcode 785](https://leetcode.com/problems/is-graph-bipartite/). Is Graph Bipartite? [Medium] (2)     - [Leetcode 1042](https://leetcode.com/problems/flower-planting-with-no-adjacent/) Flower Planting With No Adjacent | 14 + 1 |
| Day 13 (Dijkstra) | * Dijkstra   + Slide * Làm bài tập trên lớp   + [Leetcode 743](https://leetcode.com/problems/network-delay-time/). Network Delay Time [Medium] (1)   + [Leetcode 787](https://leetcode.com/problems/cheapest-flights-within-k-stops/) Cheapest Flights Within K Stops [Medium] (2) * Làm bài tập về nhà   + Tìm đường ngắn nhất (3)     - [Leetcode 1135](https://leetcode.com/problems/connecting-cities-with-minimum-cost/). Connecting Cities With Minimum Cost [Premium] [Medium] | 2 + 1 |
| Day 14 (Union Find) | * Union Find   + Slide * Làm bài tập trên lớp   + [Leetcode 547](https://leetcode.com/problems/friend-circles/). Friend Circles [Medium] (1)   + [Leetcode 684](https://leetcode.com/problems/redundant-connection/). Redundant Connection [Medium] (2) * Làm bài tập về nhà   + Tìm nhóm / kết nối thừa     - [Leetcode 1319](https://leetcode.com/problems/number-of-operations-to-make-network-connected/). Number of Operations to Make Network Connected [Medium] (3)     - [Leetcode 323](https://leetcode.com/problems/number-of-connected-components-in-an-undirected-graph/). Number of Connected Components in an Undirected Graph [Premium] [Medium]     - [Leetcode 128](https://leetcode.com/problems/longest-consecutive-sequence/). Longest Consecutive Sequence [Hard]     - [Leetcode 765](https://leetcode.com/problems/couples-holding-hands/). Couples Holding Hands [Hard]     - [Leetcode 778](https://leetcode.com/problems/swim-in-rising-water/). Swim in Rising Water [Hard]     - [Leetcode 1579](https://leetcode.com/problems/remove-max-number-of-edges-to-keep-graph-fully-traversable/) Remove Max Number of Edges to Keep Graph Fully Traversable     - [Leetcode 1168](https://leetcode.com/problems/optimize-water-distribution-in-a-village/). Optimize Water Distribution in a Village [Premium] [Hard]   + Tối ưu     - [Leetcode 209](https://leetcode.com/problems/minimum-size-subarray-sum/). Minimum Size Subarray Sum [Medium] | 7 + 2 |
| Day 15 (Math) | * Math   + Slide * Làm bài tập trên lớp   + [Leetcode 1447](https://leetcode.com/problems/simplified-fractions/). Simplified Fractions [Medium]   + [Leetcode 360](https://leetcode.com/problems/sort-transformed-array/). Sort Transformed Array [Premium] [Medium]   + [Leetcode 1344](https://leetcode.com/problems/angle-between-hands-of-a-clock/). Angle Between Hands of a Clock [Medium]   + [Leetcode 204](https://leetcode.com/problems/count-primes/) Count Primes   + Bổ sung: [Leetcode 264](https://leetcode.com/problems/ugly-number-ii/) Ugly Number II * Làm bài tập về nhà   + Số     - [Leetcode 2](https://leetcode.com/problems/add-two-numbers/). Add Two Numbers [Medium]     - [Leetcode 553](https://leetcode.com/problems/optimal-division/). Optimal Division [Medium]     - [Leetcode 1362](https://leetcode.com/problems/closest-divisors/). Closest Divisors [Medium]     - [Leetcode 1006](https://leetcode.com/problems/clumsy-factorial/). Clumsy Factorial [Medium]     - [Leetcode 592](https://leetcode.com/problems/fraction-addition-and-subtraction/). Fraction Addition and Subtraction [Medium]     - [Leetcode 640](https://leetcode.com/problems/solve-the-equation/). Solve the Equation [Medium]     - [Leetcode 279](https://leetcode.com/problems/perfect-squares/). Perfect Squares [Medium]     - [Leetcode 12](https://leetcode.com/problems/integer-to-roman/). Integer to Roman [Medium]     - Modulo       * [Leetcode 1217](https://leetcode.com/problems/minimum-cost-to-move-chips-to-the-same-position/).Minimum Cost to Move Chips to The Same Position       * [Leetcode 1716](https://leetcode.com/problems/calculate-money-in-leetcode-bank/). Calculate Money in Leetcode Bank   + Số nguyên tố     - [Leetcode 866](https://leetcode.com/problems/prime-palindrome/) Prime Palindrome [Medium]   + Hình học     - [Leetcode 223](https://leetcode.com/problems/rectangle-area/). Rectangle Area [Medium]   + Xác suất     - [Leetcode 1227](https://leetcode.com/problems/airplane-seat-assignment-probability/). Airplane Seat Assignment Probability [Medium]     - [Leetcode 1093](https://leetcode.com/problems/statistics-from-a-large-sample/). Statistics from a Large Sample[Medium]     - [Leetcode 1230](https://leetcode.com/problems/toss-strange-coins/). Toss Strange Coins [Premium] [Medium] [Extra]   + Binary Number     - [Leetcode 1017](https://leetcode.com/problems/convert-to-base-2/). Convert to Base -2 [Medium] | 16 + 2 |
| Day 16 (Tree) | * Tree   + Slide * Làm bài tập trên lớp   + [Leetcode 1469](https://leetcode.com/problems/find-all-the-lonely-nodes/) Find All The Lonely Nodes [Premium] [Easy]   + [Leetcode 104](https://leetcode.com/problems/maximum-depth-of-binary-tree/). Maximum Depth of Binary Tree [Easy]   + [Leetcode 226](https://leetcode.com/problems/invert-binary-tree/). Invert Binary Tree [Easy]   + [Leetcode 669](https://leetcode.com/problems/trim-a-binary-search-tree/). Trim a Binary Search Tree [Easy]   + [Leetcode 814](https://leetcode.com/problems/binary-tree-pruning/). Binary Tree Pruning [Medium]   + Có thể nếu còn thời gian:   + [Leetcode 543](https://leetcode.com/problems/diameter-of-binary-tree/) Tree Diameter * Làm bài tập về nhà   + Duyệt cây     - [Leetcode 700](https://leetcode.com/problems/search-in-a-binary-search-tree/). Search in a Binary Search Tree [Easy]     - [Leetcode 559](https://leetcode.com/problems/maximum-depth-of-n-ary-tree/). Maximum Depth of N-ary Tree [Easy]     - [Leetcode 1022](https://leetcode.com/problems/sum-of-root-to-leaf-binary-numbers/). Sum of Root To Leaf Binary Numbers [Easy]     - [Leetcode 872](https://leetcode.com/problems/leaf-similar-trees/). Leaf-Similar Trees [Easy]     - [Leetcode 637](https://leetcode.com/problems/average-of-levels-in-binary-tree/). Average of Levels in Binary Tree [Easy]     - [Leetcode 100](https://leetcode.com/problems/same-tree/). Same Tree [Easy]     - [Leetcode 94](https://leetcode.com/problems/binary-tree-inorder-traversal/). Binary Tree Inorder Traversal [Medium]     - [Leetcode 513](https://leetcode.com/problems/find-bottom-left-tree-value/). Find Bottom Left Tree Value [Medium]     - [Leetcode 515](https://leetcode.com/problems/find-largest-value-in-each-tree-row/). Find Largest Value in Each Tree Row [Medium]     - [Leetcode 144](https://leetcode.com/problems/binary-tree-preorder-traversal/). Binary Tree Preorder Traversal [Medium]     - [Leetcode 102](https://leetcode.com/problems/binary-tree-level-order-traversal/). Binary Tree Level Order Traversal [Medium]     - [Leetcode 199](https://leetcode.com/problems/binary-tree-right-side-view/). Binary Tree Right Side View [Medium]     - [Leetcode 366](https://leetcode.com/problems/find-leaves-of-binary-tree/). Find Leaves of Binary Tree [Premium] [Medium] [Extra]   + Thay đổi cây     - [Leetcode 814](https://leetcode.com/problems/binary-tree-pruning/). Binary Tree Pruning [Medium]     - [Leetcode 1325](https://leetcode.com/problems/delete-leaves-with-a-given-value/). Delete Leaves With a Given Value [Medium]   + Tạo cây     - [Leetcode 606](https://leetcode.com/problems/construct-string-from-binary-tree/). Construct String from Binary Tree [Easy]   + Bài toán liên quan đến khoảng cách     - [Leetcode 543](https://leetcode.com/problems/diameter-of-binary-tree/). Diameter of Binary Tree [Easy]     - [Leetcode 863](https://leetcode.com/problems/all-nodes-distance-k-in-binary-tree/). All Nodes Distance K in Binary Tree [Medium]     - [Leetcode 1245](https://leetcode.com/problems/tree-diameter/). Tree Diameter [Premium] [Medium] [Extra] | 20 + 3 |
| Day 17 (Binary Search) | * Binary Search   + Slide * Làm bài tập trên lớp   + Áp dụng công thức Binary Search     - [Leetcode 704](https://leetcode.com/problems/binary-search/) Binary Search [Easy] (1)     - [Leetcode 374](https://leetcode.com/problems/guess-number-higher-or-lower/) Guess Number Higher or Lower [Easy] (2)   + Bài toán tìm kiếm theo điều kiện K cho trước     - [Leetcode 1011](https://leetcode.com/problems/capacity-to-ship-packages-within-d-days/). Capacity To Ship Packages Within D Days [Medium] (4)   + Sử dụng bisect\_right and bisect\_left     - [Leetcode 34](https://leetcode.com/problems/find-first-and-last-position-of-element-in-sorted-array/). Find First and Last Position of Element in Sorted Array [Medium] (3) * Làm bài tập về nhà   + Áp dụng công thức Binary Search     - [Leetcode 702](https://leetcode.com/problems/search-in-a-sorted-array-of-unknown-size/) Search in a Sorted Array of Unknown Size     - [Leetcode 69](https://leetcode.com/problems/sqrtx/) Sqrt(x)   + Bài toán đếm     - [Leetcode 1351](https://leetcode.com/problems/count-negative-numbers-in-a-sorted-matrix/). Count Negative Numbers in a Sorted Matrix [Easy]   + Bài toán tìm kiếm theo điều kiện K cho trước     - [Leetcode 875](https://leetcode.com/problems/koko-eating-bananas/). Koko Eating Bananas [Medium]     - [Leetcode 287](https://leetcode.com/problems/find-the-duplicate-number/). Find the Duplicate Number [Medium]     - [Leetcode 153](https://leetcode.com/problems/find-minimum-in-rotated-sorted-array/). Find Minimum in Rotated Sorted Array [Medium]     - [Leetcode 33](https://leetcode.com/problems/search-in-rotated-sorted-array/). Search in Rotated Sorted Array [Medium]   + Tối ưu tính toán     - [Leetcode 50](https://leetcode.com/problems/powx-n/). Pow(x, n) [Medium]     - [Leetcode 1201](https://leetcode.com/problems/ugly-number-iii/). Ugly Number III [Medium]     - [Leetcode 29](https://leetcode.com/problems/divide-two-integers/). Divide Two Integers [Medium]   + Code lại Binary Search     - [Leetcode 35](https://leetcode.com/problems/search-insert-position/). Search Insert Position [Easy] | 13 |
| Day 18 (Binary Search Tree) | * Binary Search Tree   + Slide   + [Kahoot.it](https://play.kahoot.it/v2/?quizId=1f97c71b-3fab-4f8c-81d8-40a7ab96d4a7) * Làm bài tập trên lớp   + [Leetcode 938](https://leetcode.com/problems/range-sum-of-bst/). Range Sum of BST [Easy] (1)   + [Leetcode 501](https://leetcode.com/problems/find-mode-in-binary-search-tree/). Find Mode in Binary Search Tree [Easy] (2)   + [Leetcode 783](https://leetcode.com/problems/minimum-distance-between-bst-nodes/). Minimum Distance Between BST Nodes [Easy] (3) * Làm bài tập về nhà   + Duyệt cây     - [Leetcode 653](https://leetcode.com/problems/two-sum-iv-input-is-a-bst/). Two Sum IV - Input is a BST [Easy]     - [Leetcode 230](https://leetcode.com/problems/kth-smallest-element-in-a-bst/). Kth Smallest Element in a BST [Medium]     - [Leetcode 449](https://leetcode.com/problems/serialize-and-deserialize-bst/). Serialize and Deserialize BST [Medium]     - [Leetcode 285](https://leetcode.com/problems/inorder-successor-in-bst/). Inorder Successor in BST [Premium] [Medium] [Extra]     - [Leetcode 333](https://leetcode.com/problems/largest-bst-subtree/). Largest BST Subtree [Premium] [Medium] [Extra]   + Thay đổi cây     - [Leetcode 538](https://leetcode.com/problems/convert-bst-to-greater-tree/). Convert BST to Greater Tree [Easy]     - [Leetcode 1038](https://leetcode.com/problems/binary-search-tree-to-greater-sum-tree/). Binary Search Tree to Greater Sum Tree [Medium]     - [Leetcode 1382](https://leetcode.com/problems/balance-a-binary-search-tree/). Balance a Binary Search Tree [Medium] | 9 + 2 |
| Extra | * Minimax   + [Leetcode 877](https://leetcode.com/problems/stone-game/). Stone Game [Medium] |  |