How To Master Trees In Data Structures And Algorithms

- PreRequisites
  - Basic Recursion
  - Linked List
  - Stacks
  - Queues
- Binary Tree
  - Taking Input
    - Using Stack
    - Using Queue
  - Binary Tree Traversals
    - PreOrder
    - PostOrder
    - Inorder
    - Level Order
    - Interesting Questions
      - Boundary Traversal
        - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118521/offering/1380976
      - Zigzag Traversal
        - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118521/offering/1380983
  - Basic Problems
    - Height of Binary Tree
      - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118521/offering/1381013
    - Diameter Of Binary Tree
      - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118521/offering/1381015
    - Replace Node With Depth
      - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118521/offering/1381523
    - LCA Of Binary Tree
      - https://www.codingninjas.com/codestudio/problems/lca-of-binary-tree_920541
  - Construction Of Trees
    - Binary Tree From PreOrder And InOrder

        - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118521/offering/1380993
    - Binary Tree From Parent Array
        - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118521/offering/1380997
- Tree Views
    - Top View
        - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118521/offering/1381006
    - Left View
        - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118521/offering/1381007
    - Right View
        - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118521/offering/1381008
    - Bottom View
        - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118521/offering/1381009
- Practice Link Overall
    - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118521/offering/1381523

- Binary Search Tree
    - Search, Insert And Delete in BST
        - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118512/offering/1377942
    - Construction Of BST
        - Construct BST From LevelOrder
            - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118512/offering/1381317
        - Construct BST From Keys 1 to N
            - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118512/offering/1381319
    - ◉ Conversion Based Problems
    - Modification in BSTs
        - Merge Two BST
            - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118512/offering/1381327
        - Fix BST

        - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118512/offering/1381329
    - Standard Problems
        - LCA in BST
            - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118512/offering/1381331
        - Pair Sum in BST
            - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118512/offering/1381334
        - Kth Largest Number In BST
            - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118512/offering/1381335
    - Practice Link Overall
        - https://www.codingninjas.com/codestudio/guided-paths/data-structures-algorithms/content/118512/offering/1377942
- Other Trees
    - Generic Trees or n-ary Tree
        - Taking Input
            - Using Stack
            - Using Queue
        - Height Of Generic Tree
        - Count Special Nodes In Generic Tree
            - https://www.codingninjas.com/codestudio/problems/count-special-nodes-in-generic-tree_630522
    - Range Query Based Problems - Competitive Programming
        - Segment Tree
        - Fenwick Tree
    - General Knowledge
        - Red Black Tree
        - AVL
        - B -Tree