

# How To Master Dynamic Programming?

- Dynamic Programming
  - Optimization Over Recursion
- PreRequisites
  - Recursion
  - Sorting Algorithms - Merge Sort, Quick Sort etc.
  - Linked List
  - Trees
- Way To Practice Dynamic Programming
  - Recursion
  - Memoization
  - Iterative Solutions
- Content Flow
  - Basic Problems
    - Fibonacci Problem
    - Staircase Problem
      - [https://www.codingninjas.com/codestudio/problems/count-ways-to-reach-nth-stairs\\_798650](https://www.codingninjas.com/codestudio/problems/count-ways-to-reach-nth-stairs_798650)
  - 1d Array Problems
    - Longest Increasing Subsequence
      - [https://www.codingninjas.com/codestudio/problems/longest-increasing-subsequence\\_630459](https://www.codingninjas.com/codestudio/problems/longest-increasing-subsequence_630459)
    - Minimum Jumps To Reach End
      - [https://www.codingninjas.com/codestudio/problems/minimum-jumps\\_1062693](https://www.codingninjas.com/codestudio/problems/minimum-jumps_1062693)
    - Loot Houses
      - [https://www.codingninjas.com/codestudio/problems/loot-houses\\_630510](https://www.codingninjas.com/codestudio/problems/loot-houses_630510)
  - 2d Array Problems
    - Min Cost path
      - [https://www.codingninjas.com/codestudio/problems/minimum-cost-path\\_630515](https://www.codingninjas.com/codestudio/problems/minimum-cost-path_630515)
    - 0-1 Knapsack
      - [https://www.codingninjas.com/codestudio/problems/0-1-knapsack\\_1072980](https://www.codingninjas.com/codestudio/problems/0-1-knapsack_1072980)
  - Strings
    - Longest Common Subsequence
      - [https://www.codingninjas.com/codestudio/problems/longest-common-subsequence\\_624879](https://www.codingninjas.com/codestudio/problems/longest-common-subsequence_624879)

- Edit Distance
  - [https://www.codingninjas.com/codestudio/problems/edit-distance\\_630420](https://www.codingninjas.com/codestudio/problems/edit-distance_630420)
- Find if a string is interleaved of two other strings
  - [https://www.codingninjas.com/codestudio/problems/interleaving-two-strings\\_1062567](https://www.codingninjas.com/codestudio/problems/interleaving-two-strings_1062567)
- Counting Problems
  - Coin Change
    - [https://www.codingninjas.com/codestudio/problems/ways-to-make-coin-change\\_630471](https://www.codingninjas.com/codestudio/problems/ways-to-make-coin-change_630471)
  - Count Balanced Binary Trees Of Height h
    - [https://www.codingninjas.com/codestudio/problems/number-of-balanced-binary-trees\\_1062690](https://www.codingninjas.com/codestudio/problems/number-of-balanced-binary-trees_1062690)
- Breaking And Partition Problems
  - Palindrome Partitioning
    - [https://www.codingninjas.com/codestudio/problems/palindrome-partitioning\\_873266](https://www.codingninjas.com/codestudio/problems/palindrome-partitioning_873266)
  - Partition Equal Subset Sum
    - [https://www.codingninjas.com/codestudio/problems/partition-equal-subset-sum\\_892980](https://www.codingninjas.com/codestudio/problems/partition-equal-subset-sum_892980)
- Mathematical Problems
  - Matrix Chain Multiplication
    - [https://www.codingninjas.com/codestudio/problems/matrix-chain-multiplication\\_1062686](https://www.codingninjas.com/codestudio/problems/matrix-chain-multiplication_1062686)
  - Best Time To Buy And Sell Stock
    - [https://www.codingninjas.com/codestudio/problems/best-time-to-buy-and-sell-stock\\_1080698](https://www.codingninjas.com/codestudio/problems/best-time-to-buy-and-sell-stock_1080698)
- Standard problems
  - Rod Cutting
    - [https://www.codingninjas.com/codestudio/problems/rod-cutting-problem\\_800284](https://www.codingninjas.com/codestudio/problems/rod-cutting-problem_800284)
  - Count Palindromic Subsequences
    - [https://www.codingninjas.com/codestudio/problems/count-palindromic-subsequences\\_1062696](https://www.codingninjas.com/codestudio/problems/count-palindromic-subsequences_1062696)
  - Longest Palindromic Substring
    - [https://www.codingninjas.com/codestudio/problems/longest-palindromic-substring\\_758900](https://www.codingninjas.com/codestudio/problems/longest-palindromic-substring_758900)
  - Optimal BST
    - [https://www.codingninjas.com/codestudio/problems/optimal-bst\\_1062671](https://www.codingninjas.com/codestudio/problems/optimal-bst_1062671)

- Distinct Subsequences
  - [https://www.codingninjas.com/codestudio/problems/distinct-subsequences\\_799558](https://www.codingninjas.com/codestudio/problems/distinct-subsequences_799558)
- Dp With Trees - CP
- Dp With Bitmasking - CP