

Dynamic Programming

You have solved **25 / 125** problems.

Input: "babad"
Output: "bab"
Note: "aba" is also a valid answer.

- ✓ 5 **Longest Palindromic Substring** (/problems/longest-palindromic-substring)
1. Extend 2. only Check those whose len will be larger than maxLen

- ✓ 53 **Maximum Subarray** (/problems/maximum-subarray)

121 **Best Time to Buy and Sell Stock**
Input: [-2,1,-3,4,-1,2,1,-5,4],
Output: 6
Explanation: [4,-1,2,1] has the largest sum = 6.

- ✓ 70 **Climbing Stairs** (/problems/climbing-stairs)

- 10 **Regular Expression Matching** (/problems/regular-expression-matching)
m*i*s* *count as one, two and three.

- ✓ 198 **House Robber** (/problems/house-robber)
Input: 5
Output: [0,1,1,2,1,2]

- 338 **Counting Bits** (/problems/counting-bits)
f[i] = f[i / 2] + i % 2.
More like a math problem.

- ✓ 139 **Word Break** (/problems/word-break)
Input: s = "catsandog", wordDict = ["cats", "dog", "sand", "and", "cat"]
Output: false

- ✓ 85 **Maximal Rectangle** (/problems/maximal-rectangle)

- ✓ 152 **Maximum Product Subarray** (/problems/maximum-product-subarray)

- ✓ 72 **Edit Distance** (/problems/edit-distance)

- ✓ 96 **Unique Binary Search Trees** (/problems/unique-binary-search-trees)
Input: [3,1,5,8]
Output: 167
Explanation: nums = [3,1,5,8] --> [3,5,8] --> [3,8] --> [8] --> []
coins = 3*1*5 + 3*5*8 + 1*3*8 + 1*8*1 = 167

- ✓ 312 **Burst Balloons** (/problems/burst-balloons)

firstly check 1, Math method is faster, 4k(8m+7), res = 4, then check 2

- ✓ 279 **Perfect Squares** (/problems/perfect-squares)

- 120 **Triangle** (/problems/triangle)

```
dp = triangle[-1]
for i in range(len(triangle) - 2, -1, -1):
    for j in range(len(triangle[i])):
        dp[j] = min(dp[j], dp[j+1]) + triangle[i][j]
return dp[0]
```

- ✓ 64 **Minimum Path Sum** (/problems/minimum-path-sum)

- ✓ 62 **Unique Paths** (/problems/unique-paths)

- 303 **Range Sum Query - Immutable** (/problems/range-sum-query-immutable)

- 123 **Best Time to Buy and Sell Stock III** (/problems/best-time-to-buy-and-sell-stock-iii)

- 32 **Longest Valid Parentheses** (/problems/longest-valid-parentheses)
Input: "()(())"
Output: 4
Explanation: The longest valid parentheses substring is "()(())"

- 647 **Palindromic Substrings** (/problems/palindromic-substrings)

- 115 **Distinct Subsequences** (/problems/distinct-subsequences)

Use a stack

- 140 **Word Break II** (/problems/word-break-ii)

More like backtracking

Situation 1:
m * i + s + i + s + p + .
1 0 1 0 1 0 1 0 0 0 0 0 0
m 0 1 0 0 0 0 0 0 0 0 0 0 0
i .
-> p

Situation 2:
1 0
m 0 1
-> p

Situation 3:
m *
1 0 1
m 0 1 1
m 0 0 1
m 0 0 1
-> p

Situation 4:
1 . *
m
m
m

	b	a	b	g	b	a	g
b	1	1	2	2	3	3	3
a	0	1	1	1	1	4	4
g	0	0	0	1	1	1	5

- 188 **Best Time to Buy and Sell Stock IV** (/problems/best-time-to-buy-and-sell-stock-iv)
- 413 **Arithmetic Slices** (/problems/arithmetic-slices)
- ✓ 95 ~~Unique Binary Search Trees II~~ (/problems/unique-binary-search-trees-ii)
- ✓ 91 Decode Ways (/problems/decode-ways)
- ✓ 322 Coin Change (/problems/coin-change)
- 357 Count Numbers with Unique Digits (/problems/count-numbers-with-unique-digits)
- 309 Best Time to Buy and Sell Stock with Cooldown (/problems/best-time-to-buy-and-sell-stock-with-cooldown)
- 264 Ugly Number II (/problems/ugly-number-ii)
- ✓ 97 Interleaving String (/problems/interleaving-string)
- 746 Min Cost Climbing Stairs (/problems/min-cost-climbing-stairs)
- 300 Longest Increasing Subsequence (/problems/longest-increasing-subsequence)
- 343 Integer Break (/problems/integer-break)
- 87 Scramble String (/problems/scramble-string)
- ✓ 221 Maximal Square (/problems/maximal-square)
- 44 Wildcard Matching (/problems/wildcard-matching)
- ? 375 Guess Number Higher or Lower II (/problems/guess-number-higher-or-lower-ii)
- 304 Range Sum Query 2D - Immutable (/problems/range-sum-query-2d-immutable)
- 516 Longest Palindromic Subsequence (/problems/longest-palindromic-subsequence)
- ✓ 174 Dungeon Game (/problems/dungeon-game)
- 718 Maximum Length of Repeated Subarray (/problems/maximum-length-of-repeated-subarray)
- 698 Partition to K Equal Sum Subsets (/problems/partition-to-k-equal-sum-subsets)

- 354 Russian Doll Envelopes (/problems/russian-doll-envelopes)
- 321 Create Maximum Number (/problems/create-maximum-number)
- 920 Number of Music Playlists (/problems/number-of-music-playlists)
- 712 Minimum ASCII Delete Sum for Two Strings (/problems/minimum-ascii-delete-sum-for-two-strings)
- 132 Palindrome Partitioning II (/problems/palindrome-partitioning-ii)
- 740 Delete and Earn (/problems/delete-and-earn)
- 714 Best Time to Buy and Sell Stock with Transaction Fee (/problems/best-time-to-buy-and-sell-stock-with-transaction-fee)
- 403 Frog Jump (/problems/frog-jump)
- 363 Max Sum of Rectangle No Larger Than K (/problems/max-sum-of-rectangle-no-larger-than-k)
- ✓ 213 House Robber II (/problems/house-robber-ii)
- 368 Largest Divisible Subset (/problems/largest-divisible-subset)
- 377 Combination Sum IV (/problems/combination-sum-iv)
- 410 Split Array Largest Sum (/problems/split-array-largest-sum)
- ✓ 63 Unique Paths II (/problems/unique-paths-ii)
- 546 Remove Boxes (/problems/remove-boxes)
- 638 Shopping Offers (/problems/shopping-offers)
- ✓ 256 Paint House (/problems/paint-house) 🏠
- 494 Target Sum (/problems/target-sum)
- 376 Wiggle Subsequence (/problems/wiggle-subsequence)
- 416 Partition Equal Subset Sum (/problems/partition-equal-subset-sum)
- 486 Predict the Winner (/problems/predict-the-winner)
- ✓ 276 Paint Fence (/problems/paint-fence) 🏠
- 887 Super Egg Drop (/problems/super-egg-drop)
- 813 Largest Sum of Averages (/problems/largest-sum-of-averages)
- 646 Maximum Length of Pair Chain (/problems/maximum-length-of-pair-chain)
- 392 Is Subsequence (/problems/is-subsequence)

- ✓ 689 Maximum Sum of 3 Non-Overlapping Subarrays (/problems/maximum-sum-of-3-non-overlapping-subarrays) ★
- 474 Ones and Zeroes (/problems/ones-and-zeroes)
- 877 Stone Game (/problems/stone-game)
- 664 Strange Printer (/problems/strange-printer)
- 903 Valid Permutations for DI Sequence (/problems/valid-permutations-for-di-sequence)
- 673 Number of Longest Increasing Subsequence (/problems/number-of-longest-increasing-subsequence)
- 464 Can I Win (/problems/can-i-win)
- 730 Count Different Palindromic Subsequences (/problems/count-different-palindromic-subsequences)
- 466 Count The Repetitions (/problems/count-the-repetitions)
- 650 2 Keys Keyboard (/problems/2-keys-keyboard)
- 741 Cherry Pickup (/problems/cherry-pickup)
- 351 Android Unlock Patterns (/problems/android-unlock-patterns) 🗝
- 361 Bomb Enemy (/problems/bomb-enemy) 🗝
- 688 Knight Probability in Chessboard (/problems/knight-probability-in-chessboard)
- 847 Shortest Path Visiting All Nodes (/problems/shortest-path-visiting-all-nodes)
- 446 Arithmetic Slices II - Subsequence (/problems/arithmetic-slices-ii-subsequence)
- 956 Tallest Billboard (/problems/tallest-billboard)
- 517 Super Washing Machines (/problems/super-washing-machines)
- 801 Minimum Swaps To Make Sequences Increasing (/problems/minimum-swaps-to-make-sequences-increasing)
- 418 Sentence Screen Fitting (/problems/sentence-screen-fitting) 🗝
- 629 K Inverse Pairs Array (/problems/k-inverse-pairs-array)
- 787 Cheapest Flights Within K Stops (/problems/cheapest-flights-within-k-stops)
- 931 Minimum Falling Path Sum (/problems/minimum-falling-path-sum)

- 467 Unique Substrings in Wraparound String (/problems/unique-substrings-in-wraparound-string)
- 818 Race Car (/problems/race-car)
- 523 Continuous Subarray Sum (/problems/continuous-subarray-sum)
- 472 Concatenated Words (/problems/concatenated-words)
- ✓ 265 Paint House II (/problems/paint-house-ii) 🏠
- 838 Push Dominoes (/problems/push-dominoes)
- 879 Profitable Schemes (/problems/profitable-schemes)
- 552 Student Attendance Record II (/problems/student-attendance-record-ii)
- 576 Out of Boundary Paths (/problems/out-of-boundary-paths)
- 600 Non-negative Integers without Consecutive Ones (/problems/non-negative-integers-without-consecutive-ones)
- 808 Soup Servings (/problems/soup-servings)
- 471 Encode String with Shortest Length (/problems/encode-string-with-shortest-length) 🏠
- 873 Length of Longest Fibonacci Subsequence (/problems/length-of-longest-fibonacci-subsequence)
- 960 Delete Columns to Make Sorted III (/problems/delete-columns-to-make-sorted-iii)
- 837 New 21 Game (/problems/new-21-game)
- 514 Freedom Trail (/problems/freedom-trail)
- 871 Minimum Number of Refueling Stops (/problems/minimum-number-of-refueling-stops)
- 898 Bitwise ORs of Subarrays (/problems/bitwise-ors-of-subarrays)
- 943 Find the Shortest Superstring (/problems/find-the-shortest-superstring)
- 750 Number Of Corner Rectangles (/problems/number-of-corner-rectangles) 🏠
- 940 Distinct Subsequences II (/problems/distinct-subsequences-ii)
- 691 Stickers to Spell Word (/problems/stickers-to-spell-word)
- 639 Decode Ways II (/problems/decode-ways-ii)

- 568 [Maximum Vacation Days \(/problems/maximum-vacation-days\)](/problems/maximum-vacation-days/) 🔒
- 764 [Largest Plus Sign \(/problems/largest-plus-sign\)](/problems/largest-plus-sign/)
- 935 [Knight Dialer \(/problems/knight-dialer\)](/problems/knight-dialer/)
- 790 [Domino and Tromino Tiling \(/problems/domino-and-tromino-tiling\)](/problems/domino-and-tromino-tiling/)
- 727 [Minimum Window Subsequence \(/problems/minimum-window-subsequence\)](/problems/minimum-window-subsequence/) 🔒
- 651 [4 Keys Keyboard \(/problems/4-keys-keyboard\)](/problems/4-keys-keyboard/) 🔒
- 964 [Least Operators to Express Number \(/problems/least-operators-to-express-number\)](/problems/least-operators-to-express-number/)
- 902 [Numbers At Most N Given Digit Set \(/problems/numbers-at-most-n-given-digit-set\)](/problems/numbers-at-most-n-given-digit-set/)
- 656 [Coin Path \(/problems/coin-path\)](/problems/coin-path/) 🔒