

chuka231's blog

Sunday, January 3, 2021

All Public Dynamic Programming (DP) Problems at LeetCode

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#	Title	Difficulty	
70	Climbing Stairs	Easy	lis (2)
121	Best Time to Buy and Sell Stock	Easy	math (22)
746	Min Cost Climbing Stairs	Easy	max-flow (1)
1025	Divisor Game	Easy	mex (1)
123	Best Time to Buy and Sell Stock III	Hard	min-cut (1)
552	Student Attendance Record II	Hard	mst (1)
639	Decode Ways II	Hard	poj (152)
982	Triples with Bitwise AND Equal To Zero	Hard	problemist (9)
1235	Maximum Profit in Job Scheduling	Hard	scc (1)
1326	Minimum Number of Taps to Open to Water a Garden	Hard	segment (1)
1359	Count All Valid Pickup and Delivery Options	Hard	segment tree (4)
1406	Stone Game III	Hard	semi enumeration (3)
1416	Restore The Array	Hard	simulation (3)
1449	Form Largest Integer With Digits That Add up to Target	Hard	stack (4)
1510	Stone Game IV	Hard	string (24)
91	Decode Ways	Medium	suffix (5)
96	Unique Binary Search Trees	Medium	tree (5)
198	House Robber	Medium	trie (1)
279	Perfect Squares	Medium	two pointers (8)
309	Best Time to Buy and Sell Stock with Cooldown	Medium	union find (2)
322	Coin Change	Medium	
338	Counting Bits	Medium	
343	Integer Break	Medium	
357	Count Numbers with Unique Digits	Medium	
376	Wiggle Subsequence	Medium	
416	Partition Equal Subset Sum	Medium	
646	Maximum Length of Pair Chain	Medium	
714	Best Time to Buy and Sell Stock with Transaction Fee	Medium	
740	Delete and Earn	Medium	
790	Domino and Tromino Tiling	Medium	
935	Knight Dialer	Medium	
983	Minimum Cost For Tickets	Medium	1.Linear DP
1043	Partition Array for Maximum Sum	Medium	Blog Archive
1105	Filling Bookcase Shelves	Medium	► 2023 (1)
1218	Longest Arithmetic Subsequence of Given Difference	Medium	► 2022 (6)
1262	Greatest Sum Divisible by Three	Medium	▼ 2021 (16)
879	Profitable Schemes	Hard	► November (1)
956	Tallest Billboard	Hard	► October (1)
1388	Pizza With 3n Slices	Hard	► September (3)
1402	Reducing Dishes	Hard	► May (1)
213	House Robber II	Medium	► March (3)
474	Ones and Zeroes	Medium	► February (2)
494	Target Sum	Medium	▼ January (5)
638	Shopping Offers	Medium	Atcoder.chokudai_S001_h LIS
650	2 Keys Keyboard	Medium	All Public Dynamic Programming (DP) Problems at Le...
801	Minimum Swaps To Make Sequences Increasing	Medium	POJ.1741 Tree
1626	Best Team With No Conflicts	Medium	POJ.3260 The Fewest Coins
188	Best Time to Buy and Sell Stock IV	Hard	POJ.2823 Sliding Window
321	Create Maximum Number	Hard	
403	Frog Jump	Hard	
410	Split Array Largest Sum	Hard	
514	Freedom Trail	Hard	
871	Minimum Number of Refueling Stops	Hard	
920	Number of Music Playlists	Hard	
1220	Count Vowels Permutation	Hard	
1289	Minimum Falling Path Sum II	Hard	
1320	Minimum Distance to Type a Word Using Two Fingers	Hard	
1335	Minimum Difficulty of a Job Schedule	Hard	► 2020 (169)

1420	Build Array Where You Can Find The Maximum Exactly K Comparisons	Hard	3.Multi Dimensions DP	Usefull links http://www.prefield.com/algorithm/ http://codeforces.com/blog/entry/23054 http://cp-algorithms.com/ topcoder.com leetcode.com atcoder.jp codeforces.com
1444	Number of Ways of Cutting a Pizza	Hard	3.Multi Dimensions DP	
1473	Paint House III	Hard	3.Multi Dimensions DP	
1575	Count All Possible Routes	Hard	3.Multi Dimensions DP	
120	Triangle	Medium	3.Multi Dimensions DP	
377	Combination Sum IV	Medium	3.Multi Dimensions DP	
576	Out of Boundary Paths	Medium	3.Multi Dimensions DP	
688	Knight Probability in Chessboard	Medium	3.Multi Dimensions DP	
799	Champagne Tower	Medium	3.Multi Dimensions DP	
813	Largest Sum of Averages	Medium	3.Multi Dimensions DP	
931	Minimum Falling Path Sum	Medium	3.Multi Dimensions DP	
1024	Video Stitching	Medium	3.Multi Dimensions DP	
1027	Longest Arithmetic Subsequence	Medium	3.Multi Dimensions DP	
1140	Stone Game II	Medium	3.Multi Dimensions DP	
1155	Number of Dice Rolls With Target Sum	Medium	3.Multi Dimensions DP	
1223	Dice Roll Simulation	Medium	3.Multi Dimensions DP	
1621	Number of Sets of K Non-Overlapping Line Segments	Medium	3.Multi Dimensions DP	
132	Palindrome Partitioning II	Hard	4.Interval DP	
312	Burst Balloons	Hard	4.Interval DP	
546	Remove Boxes	Hard	4.Interval DP	
664	Strange Printer	Hard	4.Interval DP	
903	Valid Permutations for DI Sequence	Hard	4.Interval DP	
1000	Minimum Cost to Merge Stones	Hard	4.Interval DP	
1478	Allocate Mailboxes	Hard	4.Interval DP	
1547	Minimum Cost to Cut a Stick	Hard	4.Interval DP	
1563	Stone Game V	Hard	4.Interval DP	
375	Guess Number Higher or Lower II	Medium	4.Interval DP	
413	Arithmetic Slices	Medium	4.Interval DP	
486	Predict the Winner	Medium	4.Interval DP	
647	Palindromic Substrings	Medium	4.Interval DP	
877	Stone Game	Medium	4.Interval DP	
1039	Minimum Score Triangulation of Polygon	Medium	4.Interval DP	
1049	Last Stone Weight II	Medium	4.Interval DP	
1130	Minimum Cost Tree From Leaf Values	Medium	4.Interval DP	
1690	Stone Game VII	Medium	4.Interval DP	
691	Stickers to Spell Word	Hard	5.bit DP	
847	Shortest Path Visiting All Nodes	Hard	5.bit DP	
1125	Smallest Sufficient Team	Hard	5.bit DP	
1349	Maximum Students Taking Exam	Hard	5.bit DP	
1434	Number of Ways to Wear Different Hats to Each Other	Hard	5.bit DP	
1595	Minimum Cost to Connect Two Groups of Points	Hard	5.bit DP	
1601	Maximum Number of Achievable Transfer Requests	Hard	5.bit DP	
1655	Distribute Repeating Integers	Hard	5.bit DP	
1659	Maximize Grid Happiness	Hard	5.bit DP	
464	Can I Win	Medium	5.bit DP	
698	Partition to K Equal Sum Subsets	Medium	5.bit DP	
600	Non-negative Integers without Consecutive Ones	Hard	6.Digit DP	
902	Numbers At Most N Given Digit Set	Hard	6.Digit DP	
1012	Numbers With Repeated Digits	Hard	6.Digit DP	
968	Binary Tree Cameras	Hard	7.DP on Trees	
1373	Maximum Sum BST in Binary Tree	Hard	7.DP on Trees	
1569	Number of Ways to Reorder Array to Get Same BST	Hard	7.DP on Trees	
95	Unique Binary Search Trees II	Medium	7.DP on Trees	
337	House Robber III	Medium	7.DP on Trees	
1339	Maximum Product of Splitted Binary Tree	Medium	7.DP on Trees	
1367	Linked List in Binary Tree	Medium	7.DP on Trees	
1372	Longest ZigZag Path in a Binary Tree	Medium	7.DP on Trees	
392	Is Subsequence	Easy	8.String DP	
32	Longest Valid Parentheses	Hard	8.String DP	
115	Distinct Subsequences	Hard	8.String DP	

140	Word Break II	Hard	8.String DP	
466	Count The Repetitions	Hard	8.String DP	
472	Concatenated Words	Hard	8.String DP	
730	Count Different Palindromic Subsequences	Hard	8.String DP	
940	Distinct Subsequences II	Hard	8.String DP	
1147	Longest Chunked Palindrome Decomposition	Hard	8.String DP	
1278	Palindrome Partitioning III	Hard	8.String DP	
1397	Find All Good Strings	Hard	8.String DP	
1531	String Compression II	Hard	8.String DP	
1639	Number of Ways to Form a Target String Given a Dictionary	Hard	8.String DP	
131	Palindrome Partitioning	Medium	8.String DP	
139	Word Break	Medium	8.String DP	
467	Unique Substrings in Wraparound String	Medium	8.String DP	
712	Minimum ASCII Delete Sum for Two Strings	Medium	8.String DP	
1048	Longest String Chain	Medium	8.String DP	
1405	Longest Happy String	Medium	8.String DP	
808	Soup Servings	Medium	9.Probability DP	
837	New 21 Game	Medium	9.Probability DP	
1227	Airplane Seat Assignment Probability	Medium	9.Probability DP	
53	Maximum Subarray	Easy	10.Classic DP	Cadane's Algorithm
152	Maximum Product Subarray	Medium	10.Classic DP	Cadane's Algorithm
898	Bitwise ORs of Subarrays	Medium	10.Classic DP	Cadane's Algorithm
978	Longest Turbulent Subarray	Medium	10.Classic DP	Cadane's Algorithm
1186	Maximum Subarray Sum with One Deletion	Medium	10.Classic DP	Cadane's Algorithm
1191	K-Concatenation Maximum Sum	Medium	10.Classic DP	Cadane's Algorithm
368	Largest Divisible Subset	Medium	10.Classic DP	Cadane's Algorithm
873	Length of Longest Fibonacci Subsequence	Medium	10.Classic DP	Cadane's Algorithm
10	Regular Expression Matching	Hard	10.Classic DP	LCS
44	Wildcard Matching	Hard	10.Classic DP	LCS
72	Edit Distance	Hard	10.Classic DP	LCS
97	Interleaving String	Hard	10.Classic DP	LCS
1092	Shortest Common Supersequence	Hard	10.Classic DP	LCS
1312	Minimum Insertion Steps to Make a String Palindrome	Hard	10.Classic DP	LCS
1458	Max Dot Product of Two Subsequences	Hard	10.Classic DP	LCS
5	Longest Palindromic Substring	Medium	10.Classic DP	LCS
516	Longest Palindromic Subsequence	Medium	10.Classic DP	LCS
718	Maximum Length of Repeated Subarray	Medium	10.Classic DP	LCS
1143	Longest Common Subsequence	Medium	10.Classic DP	LCS
354	Russian Doll Envelopes	Hard	10.Classic DP	LIS
960	Delete Columns to Make Sorted III	Hard	10.Classic DP	LIS
1187	Make Array Strictly Increasing	Hard	10.Classic DP	LIS
1671	Minimum Number of Removals to Make Mountain Array	Hard	10.Classic DP	LIS
1691	Maximum Height by Stacking Cuboids	Hard	10.Classic DP	LIS
300	Longest Increasing Subsequence	Medium	10.Classic DP	LIS
673	Number of Longest Increasing Subsequence	Medium	10.Classic DP	LIS
174	Dungeon Game	Hard	10.Classic DP	2D Grid Traversal
741	Cherry Pickup	Hard	10.Classic DP	2D Grid Traversal
1301	Number of Paths with Max Score	Hard	10.Classic DP	2D Grid Traversal
1463	Cherry Pickup II	Hard	10.Classic DP	2D Grid Traversal
1643	Kth Smallest Instructions	Hard	10.Classic DP	2D Grid Traversal
62	Unique Paths	Medium	10.Classic DP	2D Grid Traversal
63		Medium	10.Classic DP	2D Grid

64	Minimum Path Sum	Medium	10.Classic DP	2D Grid Traversal
1594	Maximum Non Negative Product in a Matrix	Medium	10.Classic DP	2D Grid Traversal
1706	Where Will the Ball Fall	Medium	10.Classic DP	2D Grid Traversal
303	Range Sum Query - Immutable	Easy	10.Classic DP	Cumulative Sum
85	Maximal Rectangle	Hard	10.Classic DP	Cumulative Sum
363	Max Sum of Rectangle No Larger Than K	Hard	10.Classic DP	Cumulative Sum
517	Super Washing Machines	Hard	10.Classic DP	Cumulative Sum
689	Maximum Sum of 3 Non-Overlapping Subarrays	Hard	10.Classic DP	Cumulative Sum
1074	Number of Submatrices That Sum to Target	Hard	10.Classic DP	Cumulative Sum
1537	Get the Maximum Score	Hard	10.Classic DP	Cumulative Sum
221	Maximal Square	Medium	10.Classic DP	Cumulative Sum
304	Range Sum Query 2D - Immutable	Medium	10.Classic DP	Cumulative Sum
764	Largest Plus Sign	Medium	10.Classic DP	Cumulative Sum
838	Push Dominoes	Medium	10.Classic DP	Cumulative Sum
1139	Largest 1-Bordered Square	Medium	10.Classic DP	Cumulative Sum
1277	Count Square Submatrices with All Ones	Medium	10.Classic DP	Cumulative Sum
1314	Matrix Block Sum	Medium	10.Classic DP	Cumulative Sum
1423	Maximum Points You Can Obtain from Cards	Medium	10.Classic DP	Cumulative Sum
1504	Count Submatrices With All Ones	Medium	10.Classic DP	Cumulative Sum
1664	Ways to Make a Fair Array	Medium	10.Classic DP	Cumulative Sum
523	Continuous Subarray Sum	Medium	10.Classic DP	Hashmap (SubArray)
1477	Find Two Non-overlapping Sub-arrays Each With Target Sum	Medium	10.Classic DP	Hashmap (SubArray)
1546	Maximum Number of Non-Overlapping Subarrays With Sum Equals Target	Medium	10.Classic DP	Hashmap (SubArray)
446	Arithmetic Slices II - Subsequence	Hard	11. DP + Alpha (Tricks/DS)	
975	Odd Even Jump	Hard	11. DP + Alpha (Tricks/DS)	
1425	Constrained Subsequence Sum	Hard	11. DP + Alpha (Tricks/DS)	
1687	Delivering Boxes from Storage to Ports	Hard	11. DP + Alpha (Tricks/DS)	
629	K Inverse Pairs Array	Hard	12.Insertion DP	
943	Find the Shortest Superstring	Hard	13.Graph DP	
787	Cheapest Flights Within K Stops	Medium	13.Graph DP	
87	Scramble String	Hard	14.Memoization	
1240	Tiling a Rectangle with the Fewest Squares	Hard	14.Memoization	
1269	Number of Ways to Stay in the Same Place After Some Steps	Hard	14.Memoization	
1340	Jump Game V	Hard	14.Memoization	
1553	Minimum Number of Days to Eat N Oranges	Hard	14.Memoization	
1654	Minimum Jumps to Reach Home	Medium	14.Memoization	
1483	Kth Ancestor of a Tree Node	Hard	15. Binary Lifting	
818	Race Car	Hard	16. Math	
887	Super Egg Drop	Hard	16. Math	
964	Least Operators to Express Number	Hard	16. Math	
1363	Largest Multiple of Three	Hard	16. Math	
1611	Minimum One Bit Operations to Make Integers Zero	Hard	16. Math	
264	Ugly Number II	Medium	16. Math	
1641	Count Sorted Vowel Strings	Medium	16. Math	

Posted by chuka231 at [2:46 PM](#)



Labels: [dp](#), [leetcode](#), [problemlist](#)

14 comments:



Unknown January 5, 2021 at 11:27 PM

i never done dp, should i follow this list??

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chuka231 January 6, 2021 at 4:07 PM

These are nice articles for starters:

<https://leetcode.com/discuss/general-discussion/458695/Dynamic-Programming-Patterns>

<https://leetcode.com/discuss/general-discussion/662866/DP-for-Beginners-Problems-or-Patterns-or-Sample-Solutions>



My first page June 17, 2022 at 5:17 AM

hii

[Reply](#)



anon January 7, 2021 at 8:51 PM

I would like to thank you for framing this table with difficulty levels.
Using this blog as my primary source for starting DP

[Reply](#)



Unknown January 17, 2021 at 7:52 AM

Thank you and Keep Going!!

[Reply](#)



Unknown January 17, 2021 at 7:53 AM

Would be great if you can also share the solutions you have submitted

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chuka231 January 24, 2021 at 3:48 PM

You can see tons of nice solutions from 'Discuss' tab in each problem!

[Reply](#)



mahesh February 4, 2021 at 10:14 PM

Hi Chuka thanks for providing this resource. I have created list on leetcode itself and one can refer here <https://leetcode.com/discuss/general-discussion/1050391/Must-do-Dynamic-programming-Problems-Catefory-wise>

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chuka231 February 4, 2021 at 10:24 PM

Thanks!

[Reply](#)**Naadan_parinda** February 7, 2021 at 8:47 PM

Hey, can you please help me so as I can get the intuition behind these problems, as I have tried many times but couldn't do a problem on my own without referring the editorial.

[Reply](#)▼ [Replies](#)**Unknown** April 15, 2021 at 12:30 AM

Read this....and never be afraid of DP <https://www.quora.com/Are-there-any-good-resources-or-tutorials-for-dynamic-programming-DP-besides-the-TopCoder-tutorial/answer/Michal-Danil%C3%A1k>

[Reply](#)**Unknown** April 15, 2021 at 12:29 AM

Read this.... <https://www.quora.com/Are-there-any-good-resources-or-tutorials-for-dynamic-programming-DP-besides-the-TopCoder-tutorial/answer/Michal-Danil%C3%A1k>

[Reply](#)**Unknown** October 19, 2021 at 4:23 AM

Can you tell me how to follow this list as i am not beginner but still struggle to much in dp just wanna know how can i follow this so that i can get through smoothly to harder ones

[Reply](#)**Anonymous** November 4, 2021 at 9:59 AM

Appreciate your efforts. What is the last question number in this list? Will you be adding questions as they get added on leetcode?

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