



# HackerRank Online Judge

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# HackerRank Online Judge - Phase 3

## Algorithms Dynamic Programming



# Lecture Agenda

We will discuss in this lecture  
the following topics

- |                            |                |
|----------------------------|----------------|
| 1- Bit Manipulation        | [25 problems]  |
| 2- Dynamic Programming     | [100 problems] |
| 3- Constructive Algorithms | [10 problems]  |

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Let's  
**STARTUP**

# Lecture Agenda

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Section 1: Bit Manipulation

Section 2: Dynamic Programming

Section 3: Constructive Algorithms



# HackerRank - Bit Manipulation



- [01] <https://www.hackerrank.com/challenges/lonely-integer/problem>
- [02] <https://www.hackerrank.com/challenges/maximizing-xor/problem>
- [03] <https://www.hackerrank.com/challenges/sum-vs-xor/problem>
- [04] <https://www.hackerrank.com/challenges/flipping-bits/problem>
- [05] <https://www.hackerrank.com/challenges/counter-game/problem>
- [06] <https://www.hackerrank.com/challenges/xor-se/problem>
- [07] <https://www.hackerrank.com/challenges/the-great-xor/problem>
- [08] <https://www.hackerrank.com/challenges/yet-another-minimax-problem/problem>
- [09] <https://www.hackerrank.com/challenges/sansa-and-xor/problem>
- [10] <https://www.hackerrank.com/challenges/and-product/problem>
- [11] <https://www.hackerrank.com/challenges/winning-lottery-ticket/problem>
- [12] <https://www.hackerrank.com/challenges/cipher/problem>
- [13] <https://www.hackerrank.com/challenges/whats-next/problem>
- [14] <https://www.hackerrank.com/challenges/aorb/problem>
- [15] <https://www.hackerrank.com/challenges/xoring-ninja/problem>
- [16] <https://www.hackerrank.com/challenges/xor-matrix/problem>

# HackerRank - Bit Manipulation



- [17] <https://www.hackerrank.com/challenges/string-transmission/problem>
- [18] <https://www.hackerrank.com/challenges/manipulative-numbers/problem>
- [19] <https://www.hackerrank.com/challenges/stonegame/problem>
- [20] <https://www.hackerrank.com/challenges/maximizing-the-function/problem>
- [21] <https://www.hackerrank.com/challenges/pmix/problem>
- [22] <https://www.hackerrank.com/challenges/2s-complement/problem>
- [23] <https://www.hackerrank.com/challenges/changing-bits/problem>
- [24] <https://www.hackerrank.com/challenges/xor-key/problem>
- [25] <https://www.hackerrank.com/challenges/xor-subsequence/problem>
- [26] <https://www.hackerrank.com/challenges/iterate-it/problem>
- [27] <https://www.hackerrank.com/challenges/hamming-distance/problem>





# Lecture Agenda

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✓ Section 1: Bit Manipulation

Section 2: Dynamic Programming

Section 3: Constructive Algorithms



# HackerRank - Dynamic Programming



- [01] <https://www.hackerrank.com/challenges/coin-change/problem>
- [02] <https://www.hackerrank.com/challenges/equal/problem>
- [03] <https://www.hackerrank.com/challenges/sherlock-and-cost/problem>
- [04] <https://www.hackerrank.com/challenges/construct-the-array/problem>
- [05] <https://www.hackerrank.com/challenges/kingdom-division/problem>
- [06] <https://www.hackerrank.com/challenges/sam-and-substrings/problem>
- [07] <https://www.hackerrank.com/challenges/fibonacci-modified/problem>
- [08] <https://www.hackerrank.com/challenges/abbr/problem>
- [09] <https://www.hackerrank.com/challenges/prime-xor/problem>
- [10] <https://www.hackerrank.com/challenges/fair-cut/problem>
- [11] <https://www.hackerrank.com/challenges/maxsubarray/problem>
- [12] <https://www.hackerrank.com/challenges/prime-digit-sums/problem>
- [13] <https://www.hackerrank.com/challenges/hr-city/problem>
- [14] <https://www.hackerrank.com/challenges/summing-pieces/problem>
- [15] <https://www.hackerrank.com/challenges/mr-k-marsh/problem>
- [16] <https://www.hackerrank.com/challenges/substring-diff/problem>
- [17] <https://www.hackerrank.com/challenges/xor-and-sum/problem>

# HackerRank - Dynamic Programming



- [18] <https://www.hackerrank.com/challenges/lego-blocks/problem>
- [19] <https://www.hackerrank.com/challenges/stockmax/problem>
- [20] <https://www.hackerrank.com/challenges/two-robots/problem>
- [21] <https://www.hackerrank.com/challenges/cuttree/problem>
- [22] <https://www.hackerrank.com/challenges/wet-shark-and-two-subsequences/problem>
- [23] <https://www.hackerrank.com/challenges/array-splitting/problem>
- [24] <https://www.hackerrank.com/challenges/mandragora/problem>
- [25] <https://www.hackerrank.com/challenges/red-john-is-back/problem>
- [26] <https://www.hackerrank.com/challenges/tutzki-and-lcs/problem>
- [27] <https://www.hackerrank.com/challenges/grid-walking/problem>
- [28] <https://www.hackerrank.com/challenges/unbounded-knapsack/problem>
- [29] <https://www.hackerrank.com/challenges/play-game/problem>
- [30] <https://www.hackerrank.com/challenges/coin-on-the-table/problem>
- [31] <https://www.hackerrank.com/challenges/dynamic-programming-classics-the-longest-common-subsequence/problem>
- [32] <https://www.hackerrank.com/challenges/strplay/problem>
- [33] <https://www.hackerrank.com/challenges/counting-special-sub-cubes/problem>
- [34] <https://www.hackerrank.com/challenges/interval-selection/problem>

# HackerRank - Dynamic Programming



- [35] <https://www.hackerrank.com/challenges/the-indian-job/problem>
- [36] <https://www.hackerrank.com/challenges/travel-around-the-world/problem>
- [37] <https://www.hackerrank.com/challenges/candles-2/problem>
- [38] <https://www.hackerrank.com/challenges/swappermutation/problem>
- [39] <https://www.hackerrank.com/challenges/extremum-permutations/problem>
- [40] <https://www.hackerrank.com/challenges/decibinary-numbers/problem>
- [41] <https://www.hackerrank.com/challenges/angry-children-2/problem>
- [42] <https://www.hackerrank.com/challenges/sherlocks-array-merging-algorithm/problem>
- [43] <https://www.hackerrank.com/challenges/brick-tiling/problem>
- [44] <https://www.hackerrank.com/challenges/alien-languages/problem>
- [45] <https://www.hackerrank.com/challenges/taras-beautiful-permutations/problem>
- [46] <https://www.hackerrank.com/challenges/choosing-white-balls/problem>
- [47] <https://www.hackerrank.com/challenges/matrix-land/problem>
- [48] <https://www.hackerrank.com/challenges/black-n-white-tree-1/problem>
- [49] <https://www.hackerrank.com/challenges/string-reduction/problem>
- [50] <https://www.hackerrank.com/challenges/far-vertices/problem>
- [51] <https://www.hackerrank.com/challenges/superman-celebrates-diwali/problem>

# HackerRank - Dynamic Programming



- [52] <https://www.hackerrank.com/challenges/hexagonal-grid/problem>
- [53] <https://www.hackerrank.com/challenges/queens-on-board/problem>
- [54] <https://www.hackerrank.com/challenges/turn-off-the-lights/problem>
- [55] <https://www.hackerrank.com/challenges/animal-transport/problem>
- [56] <https://www.hackerrank.com/challenges/a-super-hero/problem>
- [57] <https://www.hackerrank.com/challenges/clues-on-a-binary-path/problem>
- [58] <https://www.hackerrank.com/challenges/road-maintenance/problem>
- [59] <https://www.hackerrank.com/challenges/beautiful-string/problem>
- [60] <https://www.hackerrank.com/challenges/covering-the-stains/problem>
- [61] <https://www.hackerrank.com/challenges/gcd-matrix/problem>
- [62] <https://www.hackerrank.com/challenges/newyear-present/problem>
- [63] <https://www.hackerrank.com/challenges/longest-palindromic-subsequence/problem>
- [64] <https://www.hackerrank.com/challenges/square-subsequences/problem>
- [65] <https://www.hackerrank.com/challenges/police-operation/problem>
- [66] <https://www.hackerrank.com/challenges/zurikela/problem>
- [67] <https://www.hackerrank.com/challenges/longest-mod-path/problem>
- [68] <https://www.hackerrank.com/challenges/p-sequences/problem>

# HackerRank - Dynamic Programming



- [69] <https://www.hackerrank.com/challenges/oil-well/problem>
- [70] <https://www.hackerrank.com/challenges/ones-and-twos/problem>
- [71] <https://www.hackerrank.com/challenges/hard-drive-disks/problem>
- [72] <https://www.hackerrank.com/challenges/longest-increasing-subsequent/problem>
- [73] <https://www.hackerrank.com/challenges/shashank-and-palindromic-strings/problem>
- [74] <https://www.hackerrank.com/challenges/points-in-a-plane/problem>
- [75] <https://www.hackerrank.com/challenges/requirement/problem>
- [76] <https://www.hackerrank.com/challenges/billboards/problem>
- [77] <https://www.hackerrank.com/challenges/fairy-chess/problem>
- [78] <https://www.hackerrank.com/challenges/hyper-strings/problem>
- [79] <https://www.hackerrank.com/challenges/dorsey-thief/problem>
- [80] <https://www.hackerrank.com/challenges/mining/problem>
- [81] <https://www.hackerrank.com/challenges/modify-the-sequence/problem>
- [82] <https://www.hackerrank.com/challenges/robot/problem>
- [83] <https://www.hackerrank.com/challenges/unfair-game/problem>
- [84] <https://www.hackerrank.com/challenges/find-the-seed/problem>
- [85] <https://www.hackerrank.com/challenges/the-blacklist/problem>

# HackerRank - Dynamic Programming



- [86] <https://www.hackerrank.com/challenges/tree-pruning/problem>
- [87] <https://www.hackerrank.com/challenges/vim-war/problem>
- [88] <https://www.hackerrank.com/challenges/best-spot/problem>
- [89] <https://www.hackerrank.com/challenges/unique-divide-and-conquer>
- [90] <https://www.hackerrank.com/challenges/dortmund-dilemma>
- [91] <https://www.hackerrank.com/challenges/super-kth-lis>
- [92] <https://www.hackerrank.com/challenges/counting-road-networks/problem>
- [93] <https://www.hackerrank.com/challenges/suffix-rotation/problem>
- [94] <https://www.hackerrank.com/challenges/lucky-numbers/problem>
- [95] <https://www.hackerrank.com/challenges/count-scorecards/problem>
- [96] <https://www.hackerrank.com/challenges/divisible-numbers/problem>
- [97] <https://www.hackerrank.com/challenges/happy-king/problem>
- [98] <https://www.hackerrank.com/challenges/count-ways-1/problem>
- [99] <https://www.hackerrank.com/challenges/hard-drive-disks/problem>
- [100] <https://www.hackerrank.com/challenges/separate-the-chocolate/problem>





# Lecture Agenda

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- ✓ Section 1: Bit Manipulation
- ✓ Section 2: Dynamic Programming
- Section 3: Constructive Algorithms**



# HackerRank - Constructive Algorithms



- [01] <https://www.hackerrank.com/challenges/lena-sort/problem>
- [02] <https://www.hackerrank.com/challenges/flipping-the-matrix/problem>
- [03] <https://www.hackerrank.com/challenges/an-interesting-game-1/problem>
- [04] <https://www.hackerrank.com/challenges/new-year-chaos/problem>
- [05] <https://www.hackerrank.com/challenges/bonetrousle/problem>
- [06] <https://www.hackerrank.com/challenges/kmp-problem/problem>
- [07] <https://www.hackerrank.com/challenges/beautiful-3-set/problem>
- [08] <https://www.hackerrank.com/challenges/inverse-rmq/problem>
- [09] <https://www.hackerrank.com/challenges/lovely-triplets/problem>
- [10] <https://www.hackerrank.com/challenges/array-construction/problem>
- [11] <https://www.hackerrank.com/challenges/two-subarrays/problem>



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DO  
MORE.