Top-20 Training Program
(Dynamic Programming Problems)

Apply the solution building strategies discussed in class to solve following problems.

Group1: Counting 1-D

Tiling Grid-I:
https://uva.onlinejudge.org/index.php?option=onlinejudge&page=show_problem&problem=1300

Tiling Grid-II: https://uva.onlinejudge.org/external/109/p10918.pdf

Tiling Dominoes:
https://uva.onlinejudge.org/index.php?option=onlinejudge&page=show_problem&problem=2245

Count Stair Climbing Ways: https://leetcode.com/problems/climbing-stairs/description/

Unique BSTs: https://leetcode.com/problems/unique-binary-search-trees/description/

Group2: Counting 2-D

Unique paths in grid: https://leetcode.com/problems/unique-paths/description/

Unique paths in grid-II: https://leetcode.com/problems/unique-paths-ii/description/

Group3: Path Sum

Minimum Path Sum in Rectangular Grid: https://leetcode.com/problems/minimum-path-sum/description/

Minimum Path Sum in Triangular Grid:
https://leetcode.com/problems/triangle/description/

WorkOut: http://codeforces.com/contest/429/problem/B

Group4: Longest Increasing Subsequences

Longest Increasing Subsequence: https://leetcode.com/problems/longest-increasing-subsequence/description/

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Russian Doll Envelopes: https://leetcode.com/problems/russian-doll-envelopes/description/

Maximum Pair Chain: https://leetcode.com/problems/maximum-length-of-pair-chain/description/

Number of LISs: https://leetcode.com/problems/number-of-longest-increasing-subsequence/solution/

Maximum Sum Subarray: http://www.lintcode.com/en/problem/maximum-subarray/

Maximum Product Subarray: https://leetcode.com/problems/maximum-product-subarray/description/

Group5: Coin sum or 0/1 knapsack variations

Coin Sum: https://leetcode.com/problems/coin-change/description/

Perfect Squares Sum: https://leetcode.com/problems/perfect-squares/description/

Maximum Profitable Movie Selection: https://www.hackerearth.com/challenge/college/nita-bitfreak-3/algorithm/leo-and-maximum-pay-4/

Group6: Misc

Jump Game: https://leetcode.com/problems/jump-game/description/