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```
codestudio
                                                           Guided Paths (
                                               Practice ▼
                                                                           Interview Prep ▼
                                                                                           Challenges ▼ New
                                                                                                             Knowledge Centre ▼ New
                                                                                                                                    Community ▼ New
                                                            Soluti
                         Submissions
                                                                                                                                                               C++ (g++ 5.4)
        Problem
                                                       1 v int solve(int r, int c, vector<vector<int>>& triangle, int n, vector<vector<int>>& dp){
                                       Report
Correct Answer
Submitted on May 15, 2022, 2:46:49 PM
                                                        3
                                                               if(r == (n - 1))
                                                                   return dp[r][c] = triangle[r][c];
Penalty
              Score
                             Test Cases
                             11/11
                                                        5
0%
              80
                                                               if(dp[r][c] != -1)
                                                        6
              Language
Runtime
                                                        7
                                                                   return dp[r][c];
386ms
              C++ (g++ 5.4)
                                                        8
                                                        9
                                                               int d = solve(r + 1, c, triangle, n, dp) + triangle[r][c];
                                                               int dw = solve(r + 1, c + 1, triangle, n, dp) + triangle[r][c];
                                                      10
                                                      11
Previous Submissions
                                                      12
                                                               return dp[r][c] = min(d, dw);
 Submitted On
             Status
                              Score
                                        Penalty
                                                 Run
                                                      13 }
              Correct Answer
                                                      14 ▼ int minimumPathSum(vector<vector<int>>& triangle, int n){
                                        0%
                                                 312
 9 mins ago
                              80/80
              11/11 Test cases Passed
                                                      15
                                                               // Write your code here.
                                                      16 ▼
              Correct Answer
 4 mins ago
                              80 / 80
                                        0%
                                                 306
                                                      17
                                                                   //This is Recursive and Memoization Approach
              11/11 Test cases Passed
                                                      18
              Correct Answer
                                                                        //For Recursion:
                                                      19
 14 mins ago
                              80 / 80
                                        0%
                                                 328
              11/11 Test cases Passed
                                                      20
                                                                            // Time Complexity = O(2^n)
                                                      21
                                                                            // Space Complexity = O(n) for stack space
                                                      22
                                                      23
                                                                        //For Memoization:
                                                                            // Time Complexity = O(n * n)
                                                      24
                                                                            // Space Complexity = O(n * n)
                                                      25
                                                      26
                                                      27
                                                               vector<vector<int>> dp(n, vector<int>(n, -1));
                                                      28
                                                               int ans = solve(0, 0, triangle, n, dp);
                                                      29
                                                               return ans; //or return dp[n - 1][n - 1];
                                                      30
                                                      31
                                                      32 ▼
                                                                   //This is Tabulation Approach
                                                      33
                                                                   // Time Complexity = O(n * n)
                                                      34
                                                      35
                                                                   // Space Complexity = O(n * n)
                                                      36
                                                      37
                                                               vector<vector<int>> dp(n, vector<int>(n, -1));
                                                      38
                                                               for(int i = 0; i < n; i++)
                                                                   dp[n - 1][i] = triangle[n - 1][i];
                                                      39
                                                      40
                                                               for(int i = n - 2; i >= 0; i--){}
                                                      41
                                                                   for(int j = 0; j <= i; j++){}
                                                                        dp[i][j] = triangle[i][j] + min(dp[i + 1][j], dp[i + 1][j + 1]);
                                                      43
                                                      44
                                                      45
                                                      46
                                                      47
                                                               return dp[0][0];
                                                               */
                                                      48
                                                      49
                                                      50
                                                                   //This is space optimized solution
                                                      51
                                                                   // Time Complexity = O(n * n)
                                                      52
                                                                   // Space Complexity = O(n)
                                                      53
                                                      54
                                                               vector<int> dp(n, -1);
                                                      55
                                                               for(int i = 0; i < n; i++)</pre>
                                                                   dp[i] = triangle[n - 1][i];
                                                      56
                                                      57
                                                               for(int i = n - 2; i >= 0; i--){
                                                      58 ▼
                                                      59 ▼
                                                                   for(int j = 0; j <= i; j++){
                                                                        int temp = triangle[i][j] + min(dp[j], dp[j + 1]);
                                                      60
                                                      61
                                                                        dp[j] = temp;
                                                      62
                                                                   }
                                                      63
                                                      64
                                                               return dp[0];
                                                      65 }
```

Console ^

Previous

Next

Show Hint

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