<u>Dashboard</u> / <u>My courses</u> / <u>CS23331-DAA-2023-CSE</u> / <u>Dynamic Programming</u> / <u>2-DP-Playing with chessboard</u>

Started on	Friday, 18 October 2024, 2:43 PM
State	Finished
Completed on	Friday, 18 October 2024, 2:48 PM
Time taken	4 mins 45 secs
Grade	10.00 out of 10.00 (100 %)

Question **1**Correct

Mark 10.00 out of 10.00

Playing with Chessboard:

Ram is given with an n*n chessboard with each cell with a monetary value. Ram stands at the (0,0), that the position of the top left white rook. He is been given a task to reach the bottom right black rook position (n-1, n-1) constrained that he needs to reach the position by traveling the maximum monetary path under the condition that he can only travel one step right or one step down the board. Help ram to achieve it by providing an efficient DP algorithm.

Example:

Input

3

124

234 871

Output:

19

Explanation:

Totally there will be 6 paths among that the optimal is Optimal path value:1+2+8+7+1=19

Input Format

First Line contains the integer n

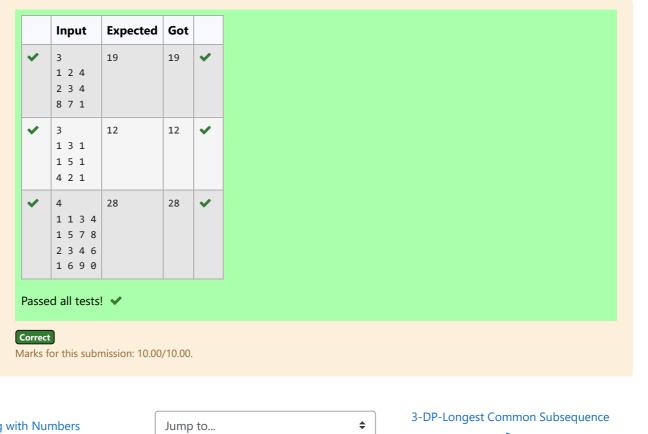
The next n lines contain the n*n chessboard values

Output Format

Print Maximum monetary value of the path

Answer: (penalty regime: 0 %)

```
#include <stdio.h>
2 v int monetary(int n, int board[n][n]) {
        int dp[n][n];
        dp[0][0]=board[0][0];
5 🔻
        for (int i=1;i<n;i++) {
             dp[0][i]=dp[0][i-1]+board[0][i];
8 *
             dp[i][0]=dp[i-1][0]+board[i][0];
9
10
        for (int i=1;i<n;i++) {
11 🔻
12 🔻
             for (int j=1; j< n; j++) {
13 v
                 if (dp[i-1][j]>dp[i][j-1]) {
14
                     dp[i][j]=dp[i-1][j]+board[i][j];
15 🔻
16
                     dp[i][j]=dp[i][j-1]+board[i][j];
17
18
19
20
        return dp[n-1][n-1];
21
22 v
    int main() {
23
        scanf("%d", &n);
24
        int board[n][n];
25
26 •
             for (int j = 0; j < n; j++) {
27 🔻
                 scanf("%d", &board[i][j]);
28
29
30
        printf("%d\n", monetary(n, board));
31
        return 0;
33
```



■ 1-DP-Playing with Numbers