



J2

Started on Monday, 3 November 2025, 3:16 AM

State Finished

Completed on Monday, 3 November 2025, 3:20 AM

Time taken 4 mins 10 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 $n \times n$ 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
1 2 4
2 3 4
8 7 1
```

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 $n \times n$ chessboard values

Output Format

Print Maximum monetary value of the path

Answer: (penalty regime: 0 %)

```
1 #include <stdio.h>
2
3 int max(int a, int b) {
4     return (a > b) ? a : b;
5 }
6
7 int main() {
8     int n;
9     scanf("%d", &n);
10
11    int grid[n][n];
12    for (int i = 0; i < n; i++)
13        for (int j = 0; j < n; j++)
14            scanf("%d", &grid[i][j]);
15
16    int dp[n][n];
17    dp[0][0] = grid[0][0];
18
19    // Fill first row
20    for (int j = 1; j < n; j++)
21        dp[0][j] = dp[0][j-1] + grid[0][j];
22
23    // Fill first column
24    for (int i = 1; i < n; i++)
25        dp[i][0] = dp[i-1][0] + grid[i][0];
26
27    // Fill remaining cells
28    for (int i = 1; i < n; i++) {
29        for (int j = 1; j < n; j++) {
30            dp[i][j] = grid[i][j] + max(dp[i-1][j], dp[i][j-1]);
31        }
32    }
33
34    printf("%d\n", dp[n-1][n-1]);
35    return 0;
36 }
```

	Input	Expected	Got	
✓	3 1 2 4 2 3 4 8 7 1	19	19	✓
✓	3 1 3 1 1 5 1 4 2 1	12	12	✓
✓	4 1 1 3 4 1 5 7 8 2 3 4 6 1 6 9 0	28	28	✓

Passed all tests! ✓

Correct

Marks for this submission: 10.00/10.00.

[Back to Course](#)

//