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Test Name:

**Mock Test** 

Taken On:

12 Nov 2024 20:42:40 IST

Time Taken:

3 min 5 sec/ 24 min

Invited by:

Ankush

Invited on: Skills Score:

Tags Score:

12 Nov 2024 20:42:26 IST

Constructive Algorithms 90/90

Core CS 90/90

Algorithms 90/90

Greedy Algorithms 90/90

Medium 90/90

Problem Solving 90/90

problem-solving 90/90

100% 90/90

scored in **Mock Test** in 3 min 5 sec on 12 Nov 2024 20:42:40 IST

# **Recruiter/Team Comments:**

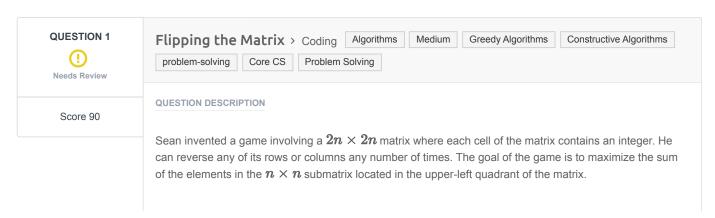
No Comments.

## Plagiarism flagged

We have marked questions with suspected plagiarism below. Please review it in detail here -

Question Description Time Taken Score Status

Q1 Flipping the Matrix > Coding 2 min 56 sec 90/90 1



Given the initial configurations for q matrices, help Sean reverse the rows and columns of each matrix in the best possible way so that the sum of the elements in the matrix's upper-left quadrant is maximal.

#### Example

```
matrix = \left[ [1,2], [3,4] \right]
```

```
1 2
3 4
```

It is  $2 \times 2$  and we want to maximize the top left quadrant, a  $1 \times 1$  matrix. Reverse row 1:

```
1 2
4 3
```

And now reverse column 0:

```
4 2
1 3
```

The maximal sum is 4.

## **Function Description**

Complete the flippingMatrix function in the editor below.

flippingMatrix has the following parameters:

- int matrix[2n][2n]: a 2-dimensional array of integers

#### Returns

- int: the maximum sum possible.

## **Input Format**

The first line contains an integer q, the number of queries.

The next q sets of lines are in the following format:

- The first line of each query contains an integer, n.
- Each of the next 2n lines contains 2n space-separated integers matrix[i][j] in row i of the matrix.

#### Constraints

- $1 \le q \le 16$
- $1 \le n \le 128$
- $ullet \ 0 \leq matrix[i][j] \leq 4096$ , where  $0 \leq i,j < 2n$ .

#### Sample Input

#### **Sample Output**

414

## **Explanation**

Start out with the following  $2n \times 2n$  matrix:

$$matrix = egin{bmatrix} 112 & 42 & 83 & 119 \ 56 & 125 & 56 & 49 \ 15 & 78 & 101 & 43 \ 62 & 98 & 114 & 108 \end{bmatrix}$$

Perform the following operations to maximize the sum of the  $n \times n$  submatrix in the upper-left quadrant: 2. Reverse column 2 ([83, 56, 101, 114]  $\rightarrow$  [114, 101, 56, 83]), resulting in the matrix:

$$matrix = egin{bmatrix} 112 & 42 & 114 & 119 \ 56 & 125 & 101 & 49 \ 15 & 78 & 56 & 43 \ 62 & 98 & 83 & 108 \ \end{bmatrix}$$

3. Reverse row 0 ([112, 42, 114, 119]  $\rightarrow$  [119, 114, 42, 112]), resulting in the matrix:

$$matrix = egin{bmatrix} 119 & 114 & 42 & 112 \ 56 & 125 & 101 & 49 \ 15 & 78 & 56 & 43 \ 62 & 98 & 83 & 108 \end{bmatrix}$$

The sum of values in the  $n \times n$  submatrix in the upper-left quadrant is 119+114+56+125=414 .

#### **CANDIDATE ANSWER**

# Language used: Python 3

```
2 #
3 # Complete the 'flippingMatrix' function below.
5 # The function is expected to return an INTEGER.
6 # The function accepts 2D INTEGER ARRAY matrix as parameter.
7 #
8 def flippingMatrix(matrix):
     n = len(matrix) // 2
     \max sum = 0
     # Loop over each cell in the n x n submatrix
      for i in range(n):
          for j in range(n):
             # Calculate the maximum of the four possible values for each cell
16 in the n x n quadrant
             max_sum += max(matrix[i][j], matrix[i][2 * n - j - 1], matrix[2 *
18 n - i - 1][j], matrix[2 * n - i - 1][2 * n - j - 1])
      return max sum
```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 1	Easy	Sample case	Success	0	0.0844 sec	14.6 KB
Testcase 2	Easy	Hidden case	Success	15	0.1646 sec	15.4 KB
Testcase 3	Easy	Hidden case	Success	15	0.2521 sec	16.2 KB
Testcase 4	Easy	Hidden case	Success	15	0.1612 sec	15.6 KB
Testcase 5	Easy	Hidden case	Success	15	0.2114 sec	15.5 KB
Testcase 6	Easy	Hidden case	Success	15	0.2073 sec	15.6 KB

Tes	stcase 7	Easy	Hidden case	Success	15	0.1875 sec	15.6 KB
Tes	stcase 8	Easy	Sample case	<b>⊘</b> Success	0	0.084 sec	14.6 KB
No Comments							

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