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Test Name: **Mock Test** 

Taken On: 2 May 2023 18:15:22 IST Time Taken: 16 min 42 sec/ 40 min

Resume: https://hackerrank-

> resumes.s3.amazonaws.com/12832555/eZqFVMyElmsJfnv8z1cBUglTe1yMjv $agplhcdFQmVJgYwzcBNcPc5x76ClVYbe4Gg/MD\_MAFUJUL\_HASAN.pdf$

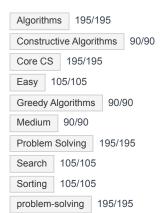
Linkedin: https://www.linkedin.com/in/md-mafujul-hasan-8bb6b8167/

Invited by: Ankush

2 May 2023 18:15:01 IST Invited on:

Skills Score:

Tags Score:





scored in Mock Test in 16 min 42 sec on 2 May 2023 18:15:22 IST

# **Recruiter/Team Comments:**

No Comments.

# Plagiarism flagged

We have marked questions with suspected plagiarism below. Please review.

	Question Description	Time Taken	Score	Status
Q1	Find the Median > Coding	36 sec	105/ 105	<b>Ø</b>
Q2	Flipping the Matrix > Coding	11 min 55 sec	90/ 90	(!)



### Score 105

# Find the Median > Coding

#### **QUESTION DESCRIPTION**

The median of a list of numbers is essentially its middle element after sorting. The same number of elements occur after it as before. Given a list of numbers with an odd number of elements, find the median?

### Example

$$arr = [5, 3, 1, 2, 4]$$

The sorted array  $\mathit{arr'} = [1, 2, 3, 4, 5]$  . The middle element and the median is 3 .

# **Function Description**

Complete the findMedian function in the editor below.

findMedian has the following parameter(s):

• int arr[n]: an unsorted array of integers

#### Returns

• int: the median of the array

### **Input Format**

The first line contains the integer n, the size of arr.

The second line contains n space-separated integers arr[i]

#### **Constraints**

- $1 \le n \le 1000001$
- *n* is odd
- $-10000 \le arr[i] \le 10000$

#### Sample Input 0

```
7
0 1 2 4 6 5 3
```

## Sample Output 0

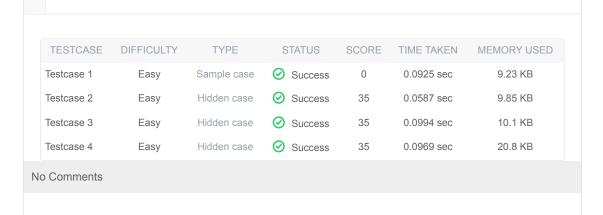
3

#### **Explanation 0**

The sorted arr = [0, 1, 2, 3, 4, 5, 6]. It's middle element is at arr[3] = 3.

## **CANDIDATE ANSWER**

## Language used: Python 3





Score 90



#### **QUESTION DESCRIPTION**

Sean invented a game involving a  $2n \times 2n$  matrix where each cell of the matrix contains an integer. He can reverse any of its rows or columns any number of times. The goal of the game is to maximize the sum of the elements in the  $n \times n$  submatrix located in the upper-left quadrant of the matrix.

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

$$matrix = [[1, 2], [3, 4]]$$

- 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  $\mathbf{4}$ .

### **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**

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

### Sample Input

### **Sample Output**

414

### **Explanation**

Start out with the following 2n imes 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:

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

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

## **CANDIDATE ANSWER**

### Language used: C++

```
#include <iostream>
#include <algorithm>
using namespace std;

int main() {
```

```
6
      int q;
      cin >> q;
8
9
      while (q--) {
        int n;
         cin >> n;
         int mat[2*n][2*n];
14
         for (int i = 0; i < 2*n; i++) {
          for (int j = 0; j < 2*n; j++) {
                cin >> mat[i][j];
          }
        }
         int sum = 0;
         for (int i = 0; i < n; i++) {
            for (int j = 0; j < n; j++) {
                sum += max(mat[i][j], max(mat[2*n - 1 - i][j], max(mat[i][2*n])
24 - 1 - j], mat[2*n - 1 - i][2*n - 1 - j])));
       }
         }
         cout << sum << "\n";
```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 1	Easy	Sample case	Success	0	0.0673 sec	8.79 KB
Testcase 2	Easy	Hidden case	Success	15	0.1006 sec	9.06 KB
Testcase 3	Easy	Hidden case	Success	15	0.1067 sec	9.04 KB
Testcase 4	Easy	Hidden case	Success	15	0.135 sec	9.15 KB
Testcase 5	Easy	Hidden case	Success	15	0.1175 sec	8.96 KB
Testcase 6	Easy	Hidden case	Success	15	0.182 sec	9.04 KB
Testcase 7	Easy	Hidden case	Success	15	0.1843 sec	9.11 KB
Testcase 8	Easy	Sample case	Success	0	0.039 sec	8.7 KB

No Comments

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