Mock Test > juanserrato100@gmail.com

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Test Name:	**Mock Test**
Taken On:	10 Jun 2024 22:54:47 IST
Time Taken:	13 min 15 sec/ 40 min
Invited by:	Ankush
Invited on:	10 Jun 2024 22:54:09 IST
Skills Score:	
Tags Score:	

53.8%

105/195

scored in **Mock Test** in 13 min 15 sec on 10 Jun 2024 22:54:47 IST

Algorithms	105/195
Constructive Algorithms	0/90
Core CS	105/195
Easy	105/105
Greedy Algorithms	0/90
Medium	0/90
Problem Solving	105/195
Search	105/105
Sorting	105/105
problem-solving	105/195

Recruiter/Team Comments:

No Comments.

	Question Description	Time Taken	Score	Status
Q1	Find the Median > **Coding**	5 min 16 sec	105/ 105	✓
Q2	Flipping the Matrix > **Coding**	5 min 54 sec	0/ 90	⊖

QUESTION 1

✓

Correct Answer

Score 105

Find the Median > Coding

Sorting | Search | Algorithms | Easy | problem-solving | Core CS | Problem Solving

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

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

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: **JavaScript (Node.js)**

```

/*
 * Complete the 'findMedian' function below.
 *
 * The function is expected to return an INTEGER.
 * The function accepts INTEGER_ARRAY arr as parameter.
 */

function findMedian(arr) {
    // Write your code here
    const sortedArray = arr.sort((a,b) => a - b);
    return sortedArray[Math.trunc(sortedArray.length / 2)];

}

```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 1	Easy	Sample case	✓ Success	0	0.0707 sec	41.8 KB
Testcase 2	Easy	Hidden case	✓ Success	35	0.0448 sec	43.1 KB
Testcase 3	Easy	Hidden case	✓ Success	35	0.0467 sec	44.6 KB
Testcase 4	Easy	Hidden case	✓ Success	35	0.099 sec	55.3 KB

No Comments

QUESTION 2

⊖ Not Submitted

Score 0

Flipping the Matrix › Coding

Algorithms | Medium | Greedy Algorithms | Constructive Algorithms | problem-solving | Core CS | Problem Solving

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 2×2 and we want to maximize the top left quadrant, a 1×1 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

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

Sample Input

```
STDIN           Function
-----           --------
1               q = 1
2               n = 2
112 42 83 119   matrix = [[112, 42, 83, 119], [56, 125, 56, 49], \
56 125 56 49                [15, 78, 101, 43], [62, 98, 114, 108]]
15 78 101 43
62 98 114 108
```

Sample Output

```
414
```

Explanation

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

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

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:

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

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

CANDIDATE ANSWER

No answer was submitted for this question. Showing compiled/saved versions.

Language used: **JavaScript (Node.js)**

```

/*
 * Complete the 'flippingMatrix' function below.
 *
 * The function is expected to return an INTEGER.
 * The function accepts 2D_INTEGER_ARRAY matrix as parameter.
 */

function flippingMatrix(matrix) {
    // Write your code here
    let result = 0;
        let halfMatrixSize = matrix.size() / 2;
        let maxMatrixIndex = matrix.size() - 1;

        for (let row = 0; row < halfMatrixSize; row ++) {
            for (let col = 0; col < halfMatrixSize; col ++) {
                let element = matrix.get(row).get(col);
                let rightMirror = matrix.get(row).get(maxMatrixIndex - col);
                let downMirror = matrix.get(maxMatrixIndex - row).get(col);
                let rightDownMirror = matrix.get(maxMatrixIndex - row)
                .get(maxMatrixIndex - col);

                result += Arrays.asList(element, rightMirror, downMirror,
rightDownMirror)
                .stream().max(Integer::compare).get();
            }
        }
        return result;

}
```

No Comments

PDF generated at: 10 Jun 2024 18:06:58 UTC