

Practice

UmeshKanoja

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Rotate a 2D array without using extra space

Submissions: 4790 (/problem_submissions.php?pid=497) Accuracy: 57.32% Difficulty: [Medium \(https://practice.geeksforgeeks.org/Medium/0/0/\)](https://practice.geeksforgeeks.org/Medium/0/0/) Marks: 4

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You are given an $n \times n$ 2D matrix representing an image.

Rotate the image by 90 degrees (clockwise).

You need to do this in place.

Note that if you end up using an additional array, you will only receive partial score.

Example:

If the array is

1 2 3 4 5 6 7 8 9

Then the rotated array becomes:

7 4 1 8 5 2 9 6 3

Input:

The first line contains an integer 'T' denoting the total number of test cases.

In each test cases, the first line contains an integer 'N' denoting the size of the 2D square matrix.

And in the second line, the elements of the matrix $A[i][j]$, each separated by a space in row major form.

Output:

For each test case, print the elements of the rotated array row wise, each element separated by a space. Print the output of each test case in a new line.

Constraints:

$$1 \leq T \leq 70$$

$$1 \leq N \leq 10$$

$$1 \leq A[i][j] \leq 100$$

Example:

Input:

```
2
3
1 2 3 4 5 6 7 8 9
2
56 96 91 54
```

Output:

```
7 4 1 8 5 2 9 6 3
91 56 54 96
```

**** For More Input/Output Examples Use 'Expected Output' option ****

Author: madhuradlakha (<https://auth.geeksforgeeks.org/user/madhuradlakha/practice/>)

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C++ (g++ 5.4)

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```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     //code
6     int t, n, size;
7     cin>>t;
8     for (int i=0; i<t; i++) {
9         cin>>n;
10        int *a;
11        size=n*n;
12        a = new int[size];
13        for (int j = 0; j<size; j++){
14            cin>>a[j];
15        }
16
17        for (int j=0; j<n; j++){
18            for (int k=1; k<=n; k++){
19                cout<<a[size - n*k + j]<<" ";
20            }
21        }
22        cout<<endl;
23    }
24 }
```

☐ Test against custom input

[Expected Outcome](#)

[Compile & Test](#)

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Correct Answer. ✓

Execution Time:0.01

Next Suggested Problem: K'th smallest element (/problems/kth-smallest-element/0/?ref=self)

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Name



Tara Bahadur Thapa • 9 months ago

It's really frustrating !!!!!

The way GFG handles submitted answer is really frustrating.

3 ^ | v • Reply • Share ›



Akshay • 3 years ago

<http://code.geeksforgeeks.o...>

What is wrong with my code?

Output is crct but it still shows as wrong :(

@geeksforgeeks

Please mention the output format correctly:-

Within an output seperated by space ? (this is mentioned)

Between outputs seperated by new line? (this is not mentioned)

Please be specific. It saves time for many of us though our code is correct we struggle with these small things and unnecessarily do wrong submissions.

2 ^ | v • Reply • Share ›



Shikhar Mod → Akshay • 3 years ago

Thank you for your feedback. We have updated the problem statement