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T 126 Twist the Matrix

Problem Submissions Leaderboard Discussions

You are given a square matrix of dimension N. Let this matrix be called A.

Your task is to rotate A in clockwise direction by Sdegrees, where S is angle of rotation.

On the matrix, there will be 3 types of operations viz.

Rotation

Rotate the matrix A by angle S, presented as input in form of A S

Querying

Query the element at row K and column L, presented as input in form of Q K L

Undation

Update the element at row X and column Y with value Z, presented as input in form of U X Y Z

Print the output of individual operations as depicted in Output Specification

Input Format

Input will consist of three parts, viz.

- 1. Size of the matrix (N)
- 2. The matrix itself (A = N * N)
- 3. Various operations on the matrix, one operation on each line. (Beginning either with A, Q or U)
- -1 will represent end of input.

Note:

Angle of rotation will always be multiples of 90 degrees only.

All Update operations happen only on the initial matrix. After update all the previous rotations have to be applied on the updated matrix

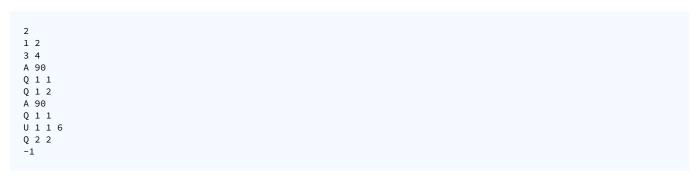
Constraints

1<=N<=1000 1<=Aij<=1000 0<=S<=160000 1<=K, L<=N 1<=Q<=100000

Output Format

For each Query operation print the element present at K-L location of the matrix in its current state.

Sample Input 0



```
3
  1
  4
  6
Explanation 0
Initial Matrix
12
34
After 90 degree rotation, the matrix will become
3 1
42
Now the element at A11 is 3 and A12 is 1.
Again the angle of rotation is 90 degree, now after the rotation the matrix will become
43
2 1
Now the element at A11 is 4.
As the next operation is Update, update initial matrix i.e.
62
34
After updating, apply all the previous rotations (i.e. 180 = two 90 degree rotations).
The matrix will now become
43
26
Now A22 is 6.
                                                                                                    f y in
                                                                                                     Contest ends in 2 days
                                                                                                     Submissions: 39
                                                                                                     Max Score: 50
                                                                                                     Difficulty: Medium
                                                                                                     Rate This Challenge:
                                                                                                     More
  Current Buffer (saved locally, editable) ?
                                                                                        C++14
                                                                                                                   23 | 4
    1 ▼#include <cmath>
    2 #include <cstdio>
      #include <vector>
      #include <iostream>
      #include <algorithm>
    6 using namespace std;
   8
    9 vint main() {
            /* Enter your code here. Read input from STDIN. Print output to STDOUT */
   10 ▼
   11
            return 0;
   12 }
   13
                                                                                                                  Line: 1 Col: 1
<u>♣ Upload Code as File</u> Test against custom input
                                                                                                   Run Code
```