

Problem 48: Rotate Image

Problem Information

Difficulty: Medium

Acceptance Rate: 78.88%

Paid Only: No

Tags: Array, Math, Matrix

Problem Description

You are given an $n \times n$ 2D matrix representing an image, rotate the image by **90** degrees (clockwise).

You have to rotate the image [**in-place**](https://en.wikipedia.org/wiki/In-place_algorithm), which means you have to modify the input 2D matrix directly. **DO NOT** allocate another 2D matrix and do the rotation.

Example 1:



Input: matrix = [[1,2,3],[4,5,6],[7,8,9]] **Output:** [[7,4,1],[8,5,2],[9,6,3]]

Example 2:



Input: matrix = [[5,1,9,11],[2,4,8,10],[13,3,6,7],[15,14,12,16]] **Output:** [[15,13,2,5],[14,3,4,1],[12,6,8,9],[16,7,10,11]]

Constraints:

$n == \text{matrix.length} == \text{matrix}[i].\text{length}$ $1 \leq n \leq 20$ $-1000 \leq \text{matrix}[i][j] \leq 1000$

Code Snippets

C++:

```
class Solution {  
public:  
    void rotate(vector<vector<int>>& matrix) {  
  
    }  
};
```

Java:

```
class Solution {  
    public void rotate(int[][] matrix) {  
  
    }  
}
```

Python3:

```
class Solution:  
    def rotate(self, matrix: List[List[int]]) -> None:  
        """  
        Do not return anything, modify matrix in-place instead.  
        """
```