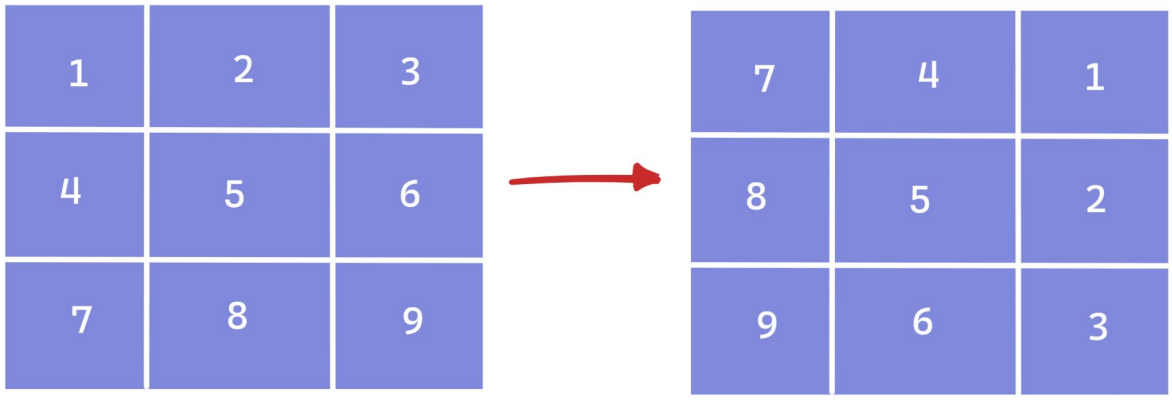
Rotate Image

→ You are given an n x n 2D matrix representing an image, rotate the image by 90 degrees (clockwise).

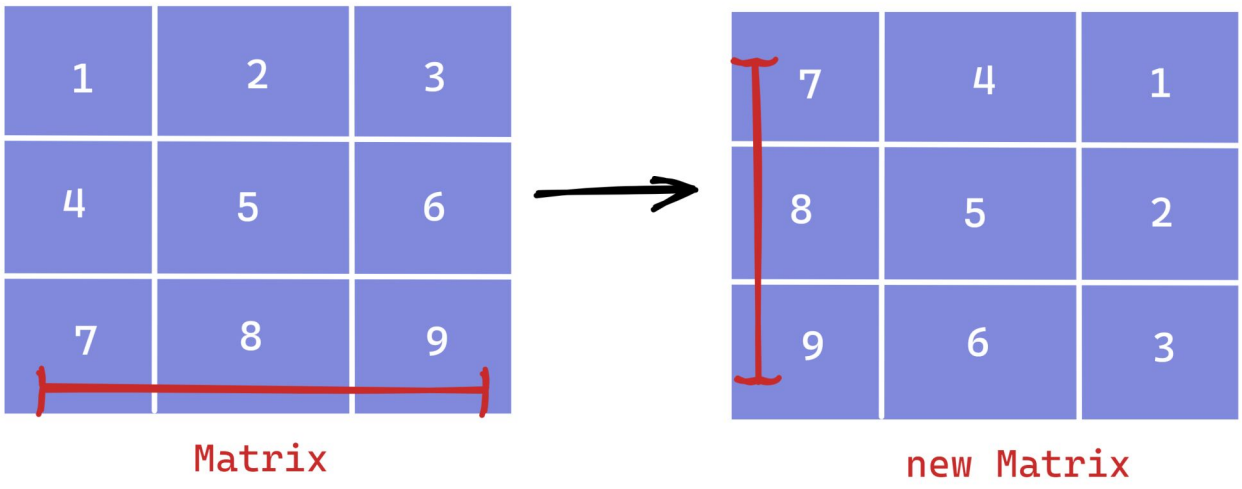
Example 1 :



Brute-Force Approach :

→ Create empty 2D matrix of size nxn , take last row from the given matrix and put it into the first column of new Matrix and so on.

```
ans[i][j] = matrix[(n-1) - j][i];
```

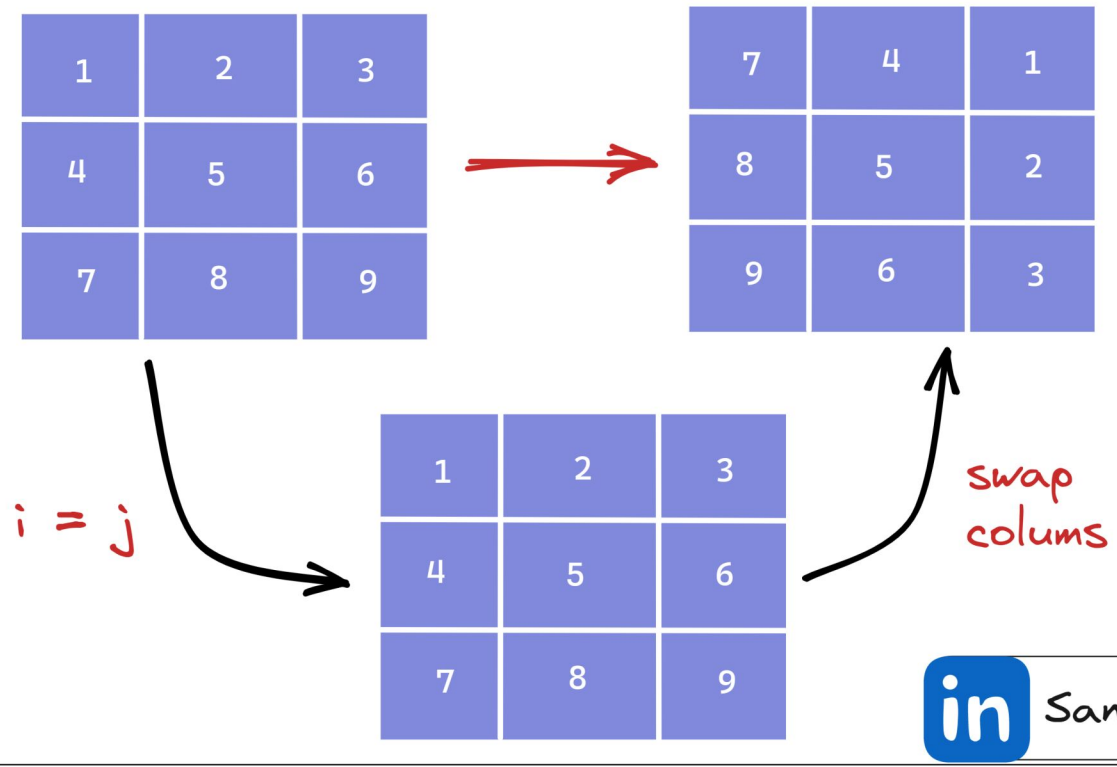


Code:-

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

        int[][] ans = new int[matrix.length][matrix[0].length];
        int n = matrix.length;

        for(int i = 0;i<n;i++){
            for(int j = 0;j<n;j++){

                ans[i][j] = matrix[(n-1) - j][i];

            }
        }
    }
}
```

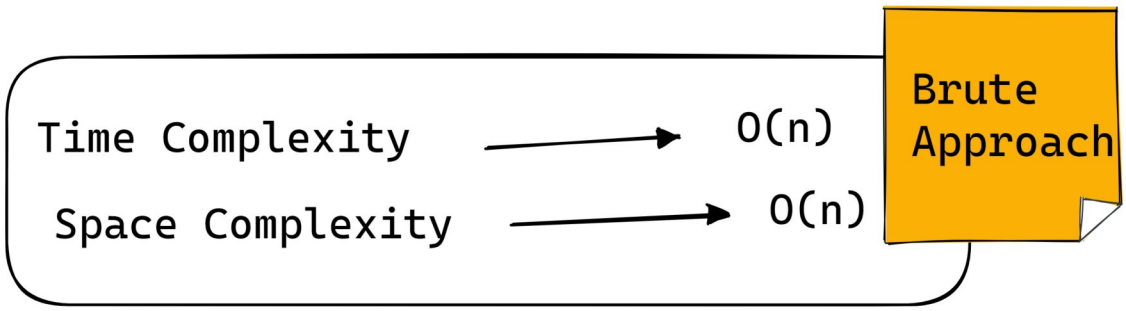
Optimal Approach

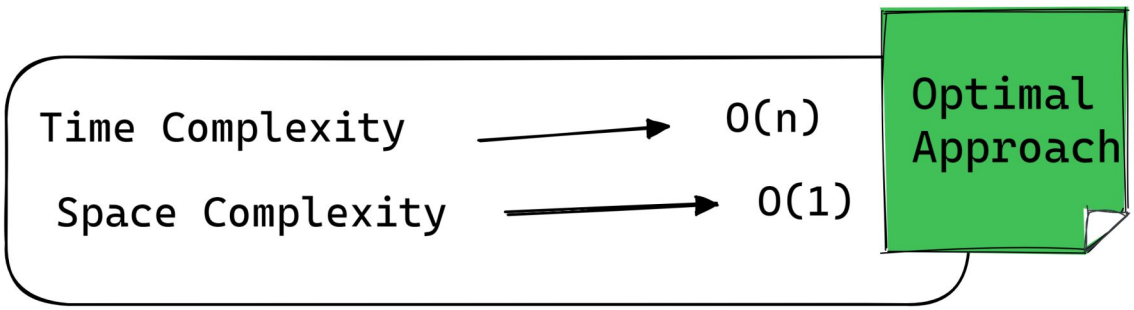
- Take transpose of given matrix (i = j).
- After that, swap first column with last column till matrix.length/2.



Code:-

```java
public void rotate(int[][] matrix) {

        for(int i = 0;i<matrix.length;i++){
            for(int j = i+1;j<matrix[0].length;j++){

                int temp = matrix[i][j];
                matrix[i][j] = matrix[j][i];
                matrix[j][i] = temp;
            }
        }

        for(int i = 0;i<matrix.length;i++){
            for(int j = 0;j<matrix[0].length/2;j++){

                int temp = matrix[i][j];
                matrix[i][j] = matrix[i][n-j-1];
                matrix[i][n-j-1] = temp;
            }
        }
    }
```





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