

Day-8

Python DSA

Leetcode 48 Rotate Image

<https://leetcode.com/problems/rotate-image/>

Brute Force

```
class Solution:
    def rotate(self, matrix: List[List[int]]) -> None:
        """
        Do not return anything, modify matrix in-place instead.
        """
        r = len(matrix)
        c = len(matrix[0])
        result = [[0 for _ in range(c)] for _ in range(r)]
        for i in range(r):
            for j in range(c):
                result[j][r - 1 - i] = matrix[i][j]
        matrix[:] = result
```

Time Complexity – $O(N^2)$

Space Complexity – $O(N^2)$

Optimal Solution

```
class Solution:
    def rotate(self, matrix: List[List[int]]) -> None:
        """
        Do not return anything, modify matrix in-place instead.
        """
        n = len(matrix)
        for i in range(n-1):
            for j in range(i+1, n):
                matrix[i][j], matrix[j][i] = matrix[j][i], matrix[i][j]
        for i in range(n):
            matrix[i].reverse()
```

TC – $O(N^2/2) = O(N^2)$

SC – $O(1)$