Flipping an Image

Try to solve the Flipping an Image problem.

We'll cover the following

Statement

Given that an image is represented by an $(n \times n)$ matrix containing 0s and 1s, flip and invert the image, and return the resultant image.

Horizontally flipping an image means that the mirror image of the matrix should be returned. Flipping $[1, 0, 0]$ horizontally results in $[0, 0, 1]$.

Inverting an image means that every 0 is replaced by 1, and every 1 is replaced by 0. Inverting $[0, 1, 1]$ results in $[1, 0, 0]$.

Constraints:

- Image should be a square matrix.
- $1 \leq n \leq 20$
- `images[i][j]` is either 0 or 1.

Sample example 1

Input

Original image

0	0	0
1	1	0
1	1	1

Output

Flipped and Inverted image

1	1	1
1	0	0
0	0	0

1 of 2

Sample example 2

Input

Original image

0	1	1	1
0	0	1	0
0	1	1	0

Output

Flipped and Inverted image

0	0	0	1
1	0	1	1
1	0	0	1

Understanding the problem

Let's take a moment to make sure you've correctly understood the problem. The quiz below helps you check if you're solving the correct problem:

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1 Consider the following (3×3) matrix as input. What is the output once it has been flipped and inverted?

$$\begin{bmatrix} 1 & 1 & 0 \\ 0 & 0 & 1 \\ 0 & 1 & 1 \end{bmatrix}$$

A) $\begin{bmatrix} 1 & 1 & 0 \\ 0 & 0 & 1 \\ 0 & 1 & 1 \end{bmatrix}$

B) $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 1 \\ 0 & 0 & 1 \end{bmatrix}$

C) $\begin{bmatrix} 1 & 1 & 0 \\ 1 & 0 & 1 \\ 0 & 1 & 1 \end{bmatrix}$

Submit Answer

Question 1 of 3
0 attempted

Reset Quiz

Figure it out!

We have a game for you to play. Rearrange the logical building blocks to develop a clearer understanding of how to solve this problem.

Drag and drop the cards to rearrange them in the correct sequence.

After iterating over all the rows, return the resultant image.

Swap the current element with the corresponding element in the second half of the row, i.e., the element at the same distance from the end of the row as the current element is from the beginning of the row, after performing the same XOR operation on the second element as well.

Iterate over the first half of the each row.

Compute the bitwise XOR of the current element with 1, which will invert the element's value.

Compute the index of the middle element in each row.

Reset | Show Solution | Submit

Try it yourself

Java

usercode > FlipImage.java

```java
import java.util.*;
public class FlipImage{
    public static int[][] flipAndInvertImage(int[][] image) {

        // Your code will replace this placeholder return statement
        return new int[][]{};
    }
}
```

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Test Cases | Results

Case 1 | Case 2 | Case 3

Input #1

```
[[1,1,0],[1,0,1],[0,0,0]]
```

Flipping an Image

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Solution: Complement...

Next

Solution: Flipping an I...

Mark as Completed