Shortest Bridge

Try to solve the Shortest Bridge problem.

We'll cover the following

Statement

We are given an $n \times n$ binary matrix grid containing `0`s and `1`s. Each cell in the grid represents either land or water. A cell with a value of `1` represents land. Whereas, a cell with a value of `0` represents water. A group of adjacent cells with the value `1` constitutes an island. Two cells are considered adjacent if one of them is above, below, to the left of, or to the right of the second cell. We have to return the smallest number of `0`s we must flip to connect the two islands.

> **Note:** We may assume all four edges of the grid are surrounded by water.

Constraints:

- $2 \leq$ `n` ≤ 100
- $n ==$ `grid.length` $==$ `grid[i].length`, such that $2 \leq$ `i` $\leq n$
- `grid[i][j]` is either 0 or 1, where $2 \leq$ `i`, `j` $\leq n$
- There are exactly *two* islands in the grid.

Example

Sample example 1

Input

1	0	0
0	0	0
0	0	1

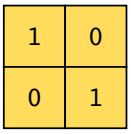
Output

```
Result = 3
```

In this example, we can set the cells (0, 1), (0, 2) and (1, 2) to 1 to create the shortest bridge, of length 3. We can also flip some other cells, for example, (1, 0), (2, 0) and (2, 1) to 1, but the bridge with the shortest length would still be 3.

Sample example 2

Input



Output

```
Result = 1
```

In this example, we can flip either the top right cell, (0, 1), or the bottom left cell, (1, 0), to connect the two islands. Hence, the answer is 1.

Understand the problem

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

Shortest Bridge

1 What is the smallest number of 0s we must flip to connect the two islands if the following matrix is given?

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

A) 1

B) 2

C) 3

D) None of the above

Submit Answer

Question 1 of 2
0 attempted

Reset Quiz

Try it yourself

Implement your solution in the following coding playground:

Java

usercode > ShortestBridge.java

```java
import java.util.*;
public class ShortestBridge{
    public static int shortestBridge(int[][] grid){

        // Your code will replace this placeholder return statement

        return -1;
    }
}
```

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Submit

Test Cases | Results

Case 1 | Case 2 | Case 3

Input #1

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

Shortest Bridge

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Challenge Yourself: Int...

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