

# Problem 836: Rectangle Overlap

## Problem Information

**Difficulty:** Easy

**Acceptance Rate:** 46.13%

**Paid Only:** No

**Tags:** Math, Geometry

## Problem Description

An axis-aligned rectangle is represented as a list `[x1, y1, x2, y2]`, where `(x1, y1)` is the coordinate of its bottom-left corner, and `(x2, y2)` is the coordinate of its top-right corner. Its top and bottom edges are parallel to the X-axis, and its left and right edges are parallel to the Y-axis.

Two rectangles overlap if the area of their intersection is **positive**. To be clear, two rectangles that only touch at the corner or edges do not overlap.

Given two axis-aligned rectangles `rec1` and `rec2`, return `true` if they overlap, otherwise return `false`.

**Example 1:**

**Input:** `rec1 = [0,0,2,2], rec2 = [1,1,3,3]` **Output:** true

**Example 2:**

**Input:** `rec1 = [0,0,1,1], rec2 = [1,0,2,1]` **Output:** false

**Example 3:**

**Input:** `rec1 = [0,0,1,1], rec2 = [2,2,3,3]` **Output:** false

**Constraints:**

`* `rec1.length == 4` * `rec2.length == 4` * `-109 <= rec1[i], rec2[i] <= 109`` \* `rec1` and `rec2` represent a valid rectangle with a non-zero area.

## Code Snippets

### C++:

```
class Solution {
public:
    bool isRectangleOverlap(vector<int>& rec1, vector<int>& rec2) {
        }
};
```

### Java:

```
class Solution {
    public boolean isRectangleOverlap(int[] rec1, int[] rec2) {
        }
}
```

### Python3:

```
class Solution:
    def isRectangleOverlap(self, rec1: List[int], rec2: List[int]) -> bool:
```