Problem 2345: Finding the Number of Visible Mountains

Problem Information

Difficulty: Medium
Acceptance Rate: 36.73%
Paid Only: Yes
Tags: Array, Stack, Sorting, Monotonic Stack

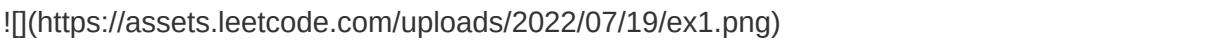
Problem Description

You are given a **0-indexed** 2D integer array `peaks` where `peaks[i] = [xi, yi]` states that mountain `i` has a peak at coordinates `(xi, yi)`. A mountain can be described as a right-angled isosceles triangle, with its base along the `x`-axis and a right angle at its peak. More formally, the **gradients** of ascending and descending the mountain are `1` and `-1` respectively.

A mountain is considered **visible** if its peak does not lie within another mountain (including the border of other mountains).

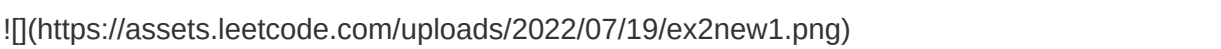
Return _the number of visible mountains_.

Example 1:



Input: peaks = [[2,2],[6,3],[5,4]] **Output:** 2 **Explanation:** The diagram above shows the mountains. - Mountain 0 is visible since its peak does not lie within another mountain or its sides. - Mountain 1 is not visible since its peak lies within the side of mountain 2. - Mountain 2 is visible since its peak does not lie within another mountain or its sides. There are 2 mountains that are visible.

Example 2:



Input: peaks = [[1,3],[1,3]] **Output:** 0 **Explanation:** The diagram above shows the mountains (they completely overlap). Both mountains are not visible since their peaks lie within each other.

Constraints:

* `1 <= peaks.length <= 105` * `peaks[i].length == 2` * `1 <= xi, yi <= 105`

Code Snippets

C++:

```
class Solution {
public:
int visibleMountains(vector<vector<int>>& peaks) {

}
};
```

Java:

```
class Solution {
public int visibleMountains(int[][] peaks) {

}
}
```

Python3:

```
class Solution:
def visibleMountains(self, peaks: List[List[int]]) -> int:
```