Problem 3631: Sort Threats by Severity and Exploitability

Problem Information

Difficulty: Medium
Acceptance Rate: 70.19%
Paid Only: Yes
Tags: Array, Sorting

Problem Description

You are given a 2D integer array `threats`, where each `threats[i] = [IDi, sevi■, expi]`

* `IDi`: Unique identifier of the threat. * `sevi`: Indicates the severity of the threat. * `expi`: Indicates the exploitability of the threat.

The**score** of a threat `i` is defined as: `score = 2 × sevi + expi`

Your task is to return `threats` sorted in **descending** order of **score**.

If multiple threats have the same score, sort them by **ascending ID** .

Example 1:

Input: threats = [[101,2,3],[102,3,2],[103,3,3]]

Output: [[103,3,3],[102,3,2],[101,2,3]]

Explanation:

Threat | ID | sev | exp | Score = 2 × sev + exp ---|---|---|---|--- `threats[0]` | 101 | 2 | 3 | 2 × 2 + 3 = 7 `threats[1]` | 102 | 3 | 2 | 2 × 3 + 2 = 8 `threats[2]` | 103 | 3 | 3 | 2 × 3 + 3 = 9 Sorted Order: `[[103, 3, 3], [102, 3, 2], [101, 2, 3]]`

Example 2:

Input: threats = [[101,4,1],[103,1,5],[102,1,5]]

Output: [[101,4,1],[102,1,5],[103,1,5]]

Explanation:■■■■■■■

Threat | ID | sev | exp | Score = 2 × sev + exp ---|---|---|---|--- `threats[0]` | 101 | 4 | 1 | 2 × 4 + 1 = 9 `threats[1]` | 103 | 1 | 5 | 2 × 1 + 5 = 7 `threats[2]` | 102 | 1 | 5 | 2 × 1 + 5 = 7 `threats[1]` and `threats[2]` have same score, thus sort them by ascending ID.

Sorted Order: `[[101, 4, 1], [102, 1, 5], [103, 1, 5]]`

Constraints:

* `1 <= threats.length <= 105` * `threats[i] == [IDi, sevi, expi]` * `1 <= IDi <= 106` * `1 <= sevi <= 109` * `1 <= expi <= 109` * All `IDi` are **unique**

Code Snippets

C++:

```
class Solution {
public:
vector<vector<int>> sortThreats(vector<vector<int>>& threats) {

}
};
```

Java:

```
class Solution {
public int[][] sortThreats(int[][] threats) {

}
}
```

Python3:

```
class Solution:
def sortThreats(self, threats: List[List[int]]) -> List[List[int]]:
```