Problem 1395: Count Number of Teams

Problem Information

Difficulty: Medium
Acceptance Rate: 70.14%
Paid Only: No
Tags: Array, Dynamic Programming, Binary Indexed Tree, Segment Tree

Problem Description

There are `n` soldiers standing in a line. Each soldier is assigned a **unique** `rating` value.

You have to form a team of 3 soldiers amongst them under the following rules:

* Choose 3 soldiers with index (`i`, `j`, `k`) with rating (`rating[i]`, `rating[j]`, `rating[k]`). * A team is valid if: (`rating[i] < rating[j] < rating[k]`) or (`rating[i] > rating[j] > rating[k]`) where (`0 <= i < j < k < n`).

Return the number of teams you can form given the conditions. (soldiers can be part of multiple teams).

Example 1:

Input: rating = [2,5,3,4,1] **Output:** 3 **Explanation:** We can form three teams given the conditions. (2,3,4), (5,4,1), (5,3,1).

Example 2:

Input: rating = [2,1,3] **Output:** 0 **Explanation:** We can't form any team given the conditions.

Example 3:

Input: rating = [1,2,3,4] **Output:** 4

Constraints:

* `n == rating.length` * `3 <= n <= 1000` * `1 <= rating[i] <= 105` * All the integers in `rating` are **unique**.

Code Snippets

C++:

```
class Solution {
public:
int numTeams(vector<int>& rating) {

}
};
```

Java:

```
class Solution {
public int numTeams(int[] rating) {

}
}
```

Python3:

```
class Solution:
def numTeams(self, rating: List[int]) -> int:
```