There are n children standing in a line. Each child is assigned a rating value given in the integer array ratings.

You are giving candies to these children subjected to the following requirements:

Each child must have at least one candy.
Children with a higher rating get more candies than their neighbors.
Return the minimum number of candies you need to have to distribute the candies to the children.

Example 1:

Input: ratings = [1,0,2]
Output: 5
Explanation: You can allocate to the first, second and third child with 2, 1, 2 candies respectively.
Example 2:

Input: ratings = [1,2,2]
Output: 4
Explanation: You can allocate to the first, second and third child with 1, 2, 1 candies respectively.
The third child gets 1 candy because it satisfies the above two conditions.

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You are playing the following Nim Game with your friend:

Initially, there is a heap of stones on the table.
You and your friend will alternate taking turns, and you go first.
On each turn, the person whose turn it is will remove 1 to 3 stones from the heap.
The one who removes the last stone is the winner.
Given n, the number of stones in the heap, return true if you can win the game assuming both you and your friend play optimally, otherwise return false.

Example 1:

Input: n = 4
Output: false
Explanation: These are the possible outcomes:
1. You remove 1 stone. Your friend removes 3 stones, including the last stone. Your friend wins.
2. You remove 2 stones. Your friend removes 2 stones, including the last stone. Your friend wins.
3. You remove 3 stones. Your friend removes the last stone. Your friend wins.
In all outcomes, your friend wins.
Example 2:

Input: n = 1
Output: true
Example 3:

Input: n = 2
Output: true