

LeetCode

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October LeetCode Challenge 2021

Premium

Description

Solution

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Submissions

i

Java

Autocomplete

2038. Remove Colored Pieces if Both Neighbors are the Same Color

Medium

71

2

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There are n pieces arranged in a line, and each piece is colored either by 'A' or by 'B'. You are given a string `colors` of length n where `colors[i]` is the color of the i^{th} piece.

Alice and Bob are playing a game where they take **alternating turns** removing pieces from the line. In this game, Alice moves **first**.

- Alice is only allowed to remove a piece colored 'A' if **both its neighbors** are also colored 'A'. She is **not allowed** to remove pieces that are colored 'B'.
- Bob is only allowed to remove a piece colored 'B' if **both its neighbors** are also colored 'B'. He is **not allowed** to remove pieces that are colored 'A'.
- Alice and Bob **cannot** remove pieces from the edge of the line.
- If a player cannot make a move on their turn, that player **loses** and the other player **wins**.

Assuming Alice and Bob play optimally, return `true` if Alice wins, or return `false` if Bob wins.

Example 1:

Input: `colors = "AAABABB"`
Output: `true`
Explanation:
`A``A``B``A``B``B` -> `A``A``B``A``B``B`
Alice moves first.
She removes the second 'A' from the left since that is the only 'A' whose neighbors are both 'A'.

Now it's Bob's turn.
Bob cannot make a move on his turn since there are no 'B's whose neighbors are both 'B'.
Thus, Alice wins, so return `true`.

Example 2:

Input: `colors = "AA"`
Output: `false`
Explanation:
Alice has her turn first.
There are only two 'A's and both are on the edge of the line, so she cannot move on her turn.
Thus, Bob wins, so return `false`.

Example 3:

Input: `colors = "ABBBBBA"`
Output: `false`
Explanation:
`A``B``B``B``B``B``A` -> `A``B``B``B``B``B``A`
Alice moves first.
Her only option is to remove the second to last 'A' from the right.

`A``B``B``B``B``B``A` -> `A``B``B``B``B``B``A`
Next is Bob's turn.
He has many options for which 'B' piece to remove. He can pick any.

On Alice's second turn, she has no more pieces that she can remove.
Thus, Bob wins, so return `false`.

Constraints:

- $1 \leq \text{colors.length} \leq 10^5$
- `colors` consists of only the letters 'A' and 'B'

Accepted 4,818 Submissions 9,685

Seen this question in a real interview before?

Yes

No

Companies

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1

2

3

4

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```
class Solution {
    public boolean winnerOfGame(String colors) {
    }
}
```

Problems

Pick One

< Prev

2038/2045

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Console

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Run Code

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https://leetcode.com/problems/remove-colored-pieces-if-both-neighbors-are-the-same-color/

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