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5728. Minimum Sideway Jumps

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Back to Contest (/contest/weekly-contest-236/)

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(Medium)

User Accepted:

Total Accepted:

Total Submissions:

User Tried:

Difficulty:

There is a $\bf 3$ lane road of length $\, n \,$ that consists of $\, n \, + \, 1 \,$ points labeled from $\, 0 \,$ to $\, n \, . \,$ A frog starts at point $\, 0 \,$ in the ${f second}$ lane and wants to jump to point $\ n$. However, there could be obstacles along the way.

You are given an array obstacles of length n + 1 where each obstacles [i] (ranging from 0 to 3) describes an obstacle on the lane obstacles [i] at point i. If obstacles [i] == \emptyset , there are no obstacles at point i. There will be at most one obstacle in the 3 lanes at each point.

• For example, if obstacles [2] == 1, then there is an obstacle on lane 1 at point 2.

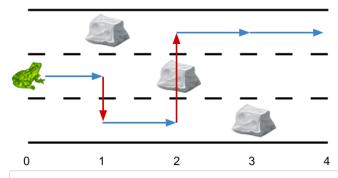
The frog can only travel from point i to point i + 1 on the same lane if there is not an obstacle on the lane at point i + 1. To avoid obstacles, the frog can also perform a side jump to jump to another lane (even if they are not adjacent) at the same point if there is no obstacle on the new lane.

• For example, the frog can jump from lane 3 at point 3 to lane 1 at point 3.

Return the minimum number of side jumps the frog needs to reach any lane at point n starting from lane 2 at point 0.

Note: There will be no obstacles on points 0 and n.

Example 1:

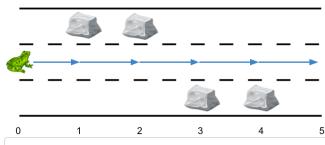


Input: obstacles = [0,1,2,3,0]

Output: 2

Explanation: The optimal solution is shown by the arrows above. There are 2 side jumps (red arrows). Note that the frog can jump over obstacles only when making side jumps (as shown at point 2).

Example 2:

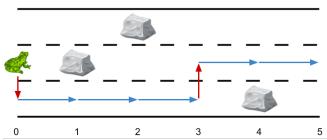


Input: obstacles = [0,1,1,3,3,0]

Output: 0

Explanation: There are no obstacles on lane 2. No side jumps are required.

Example 3:



Input: obstacles = [0,2,1,0,3,0]

Output: 2

Explanation: The optimal solution is shown by the arrows above. There are 2 side jumps.

Constraints:

- obstacles.length == n + 1
- 1 <= n <= $5 * 10^5$
- 0 <= obstacles[i] <= 3
- obstacles[0] == obstacles[n] == 0

