1989. Maximum Number of People That Can Be Caught in Tag Premium

Medium | Topics | Hint

You are playing a game of tag with your friends. In tag, people are divided into two teams: people who are "it", and people who are not "it". The people who are "it" want to catch as many people as possible who are not "it".

You are given a **0-indexed** integer array `team` containing only zeros (denoting people who are **not** "it") and ones (denoting people who are "it"), and an integer `dist`. A person who is "it" at index `i` can catch any **one** person whose index is in the range `[i - dist, i + dist]` (**inclusive**) and is **not** "it".

Return *the **maximum** number of people that the people who are "it" can catch.*

Example 1:

> **Input:** team = [0,1,0,1,0], dist = 3
> **Output:** 2
> **Explanation:**
> The person who is "it" at index 1 can catch people in the range [i-dist, i+dist] = [1-3, 1+3] = [-2, 4].
> They can catch the person who is not "it" at index 2.
> The person who is "it" at index 3 can catch people in the range [i-dist, i+dist] = [3-3, 3+3] = [0, 6].
> They can catch the person who is not "it" at index 0.
> The person who is not "it" at index 4 will not be caught because the people at indices 1 and 3 are already catching one person.

Example 2:

> **Input:** team = [1], dist = 1
> **Output:** 0
> **Explanation:**
> There are no people who are not "it" to catch.

Example 3:

> **Input:** team = [0], dist = 1
> **Output:** 0
> **Explanation:**
> There are no people who are "it" to catch people.

Constraints:

- `1 <= team.length <= 10^5`
- `0 <= team[i] <= 1`
- `1 <= dist <= team.length`

Seen this question in a real interview before? 1/5

Yes No

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Topics

Array Greedy

Hint 1

Try to use as much of the range of a person who is "it" as possible.

Hint 2

Find the leftmost person who is "it" that has not caught anyone yet, and the leftmost person who is not "it" that has not been caught yet.

Hint 3

If the person who is not "it" can be caught, pair them together and repeat the process.

Hint 4

If the person who is not "it" cannot be caught, and the person who is not "it" is on the left of the person who is "it", find the next leftmost person who is not "it".

Hint 5

If the person who is not "it" cannot be caught, and the person who is "it" is on the left of the person who is not "it", find the next leftmost person who is "it".

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