1894. Find the Student that Will Replace the Chalk

Solved ●

Medium Topics Companies Hint

There are `n` students in a class numbered from `0` to `n - 1`. The teacher will give each student a problem starting with the student number `0`, then the student number `1`, and so on until the teacher reaches the student number `n - 1`. After that, the teacher will restart the process, starting with the student number `0` again.

You are given a **0-indexed** integer array `chalk` and an integer `k`. There are initially `k` pieces of chalk. When the student number `i` is given a problem to solve, they will use `chalk[i]` pieces of chalk to solve that problem. However, if the current number of chalk pieces is **strictly less** than `chalk[i]`, then the student number `i` will be asked to **replace** the chalk.

Return *the **index** of the student that will **replace** the chalk pieces.*

Example 1:

> **Input:** chalk = [5,1,5], k = 22
> **Output:** 0
> **Explanation:** The students go in turns as follows:
> - Student number 0 uses 5 chalk, so k = 17.
> - Student number 1 uses 1 chalk, so k = 16.
> - Student number 2 uses 5 chalk, so k = 11.
> - Student number 0 uses 5 chalk, so k = 6.
> - Student number 1 uses 1 chalk, so k = 5.
> - Student number 2 uses 5 chalk, so k = 0.
> Student number 0 does not have enough chalk, so they will have to replace it.

Example 2:

> **Input:** chalk = [3,4,1,2], k = 25
> **Output:** 1
> **Explanation:** The students go in turns as follows:
> - Student number 0 uses 3 chalk so k = 22.
> - Student number 1 uses 4 chalk so k = 18.
> - Student number 2 uses 1 chalk so k = 17.
> - Student number 3 uses 2 chalk so k = 15.
> - Student number 0 uses 3 chalk so k = 12.
> - Student number 1 uses 4 chalk so k = 8.
> - Student number 2 uses 1 chalk so k = 7.
> - Student number 3 uses 2 chalk so k = 5.
> - Student number 0 uses 3 chalk so k = 2.
> Student number 1 does not have enough chalk, so they will have to replace it.

Constraints:

- `chalk.length == n`
- `1 <= n <= 10^5`
- `1 <= chalk[i] <= 10^5`
- `1 <= k <= 10^9`

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

Yes No

Accepted 184.9K Submissions 347.1K Acceptance Rate 53.3%

Topics

Companies

Hint 1

Hint 2

Similar Questions

Discussion (190)