5983. Maximum Running Time of N Computers

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User Accepted:	0
User Tried:	2
Total Accepted:	0
Total Submissions:	3
Difficulty:	Hard

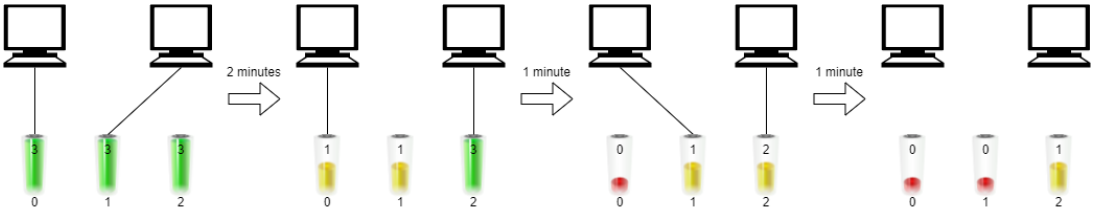
You have `n` computers. You are given the integer `n` and a **0-indexed** integer array `batteries` where the i^{th} battery can **run** a computer for `batteries[i]` minutes. You are interested in running **all** `n` computers **simultaneously** using the given batteries.

Initially, you can insert **at most one battery** into each computer. After that and at any integer time moment, you can remove a battery from a computer and insert another battery **any number of times**. The inserted battery can be a totally new battery or a battery from another computer. You may assume that the removing and inserting processes take no time.

Note that the batteries cannot be recharged.

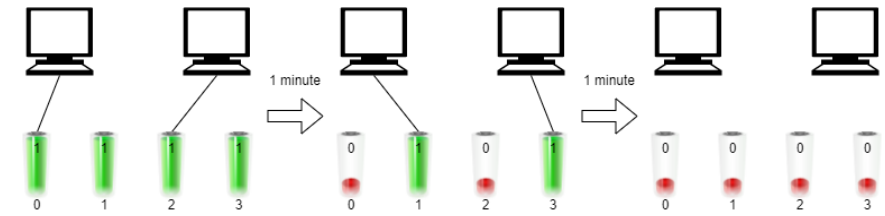
Return *the **maximum** number of minutes you can run all the* `n` *computers simultaneously.*

Example 1:




```
Input: n = 2, batteries = [3,3,3]
Output: 4
Explanation:
Initially, insert battery 0 into the first computer and battery 1 into the second computer.
After two minutes, remove battery 1 from the second computer and insert battery 2 instead. Note that battery 1 can stil
At the end of the third minute, battery 0 is drained, and you need to remove it from the first computer and insert batt
By the end of the fourth minute, battery 1 is also drained, and the first computer is no longer running.
We can run the two computers simultaneously for at most 4 minutes, so we return 4.
```

Example 2:




```
Input: n = 2, batteries = [1,1,1,1]
Output: 2
Explanation:
Initially, insert battery 0 into the first computer and battery 2 into the second computer.
After one minute, battery 0 and battery 2 are drained so you need to remove them and insert battery 1 into the first co
After another minute, battery 1 and battery 3 are also drained so the first and second computers are no longer running.
We can run the two computers simultaneously for at most 2 minutes, so we return 2.
```

Constraints:

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

JavaScript

```javascript
const maxRunTime = (n, a) => {
    let low = 0, high = 1e14;
    while (low <= high) {
        let mid = parseInt((low + high) / 2), sum = 0;
        for (const x of a) sum += Math.min(x, mid);
        if (sum >= n * mid) {
            low = mid + 1;
        } else {
            high = mid - 1;
        }
    }
    return high;
};

```

Custom Testcase Use Example Testcases

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Submission Result: Accepted (/submissions/detail/620792096/) More Details > (/submissions/detail/620792096/)

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