Problem 1860: Incremental Memory Leak

Problem Information

Difficulty: Medium
Acceptance Rate: 72.90%
Paid Only: No
Tags: Math, Simulation

Problem Description

You are given two integers `memory1` and `memory2` representing the available memory in bits on two memory sticks. There is currently a faulty program running that consumes an increasing amount of memory every second.

At the `ith` second (starting from 1), `i` bits of memory are allocated to the stick with **more available memory** (or from the first memory stick if both have the same available memory). If neither stick has at least `i` bits of available memory, the program **crashes**.

Return _an array containing_`[crashTime, memory1crash, memory2crash]`_, where_`crashTime` _is the time (in seconds) when the program crashed and_`memory1crash` _and_`memory2crash` _are the available bits of memory in the first and second sticks respectively_.

Example 1:

Input: memory1 = 2, memory2 = 2 **Output:** [3,1,0] **Explanation:** The memory is allocated as follows: - At the 1st second, 1 bit of memory is allocated to stick 1. The first stick now has 1 bit of available memory. - At the 2nd second, 2 bits of memory are allocated to stick 2. The second stick now has 0 bits of available memory. - At the 3rd second, the program crashes. The sticks have 1 and 0 bits available respectively.

Example 2:

Input: memory1 = 8, memory2 = 11 **Output:** [6,0,4] **Explanation:** The memory is allocated as follows: - At the 1st second, 1 bit of memory is allocated to stick 2. The second stick now has 10 bit of available memory. - At the 2nd second, 2 bits of memory are allocated

to stick 2. The second stick now has 8 bits of available memory. - At the 3rd second, 3 bits of memory are allocated to stick 1. The first stick now has 5 bits of available memory. - At the 4th second, 4 bits of memory are allocated to stick 2. The second stick now has 4 bits of available memory. - At the 5th second, 5 bits of memory are allocated to stick 1. The first stick now has 0 bits of available memory. - At the 6th second, the program crashes. The sticks have 0 and 4 bits available respectively.

Constraints:

* `0 <= memory1, memory2 <= 231 - 1`

Code Snippets

C++:

```
class Solution {
public:
vector<int> memLeak(int memory1, int memory2) {

}
};
```

Java:

```
class Solution {
public int[] memLeak(int memory1, int memory2) {

}
}
```

Python3:

```
class Solution:
def memLeak(self, memory1: int, memory2: int) -> List[int]:
```