Problem 732: My Calendar III

Problem Information

Difficulty: Hard
Acceptance Rate: 71.05%
Paid Only: No
Tags: Binary Search, Design, Segment Tree, Prefix Sum, Ordered Set

Problem Description

A `k`-booking happens when `k` events have some non-empty intersection (i.e., there is some time that is common to all `k` events.)

You are given some events `[startTime, endTime)`, after each given event, return an integer `k` representing the maximum `k`-booking between all the previous events.

Implement the `MyCalendarThree` class:

* `MyCalendarThree()` Initializes the object. * `int book(int startTime, int endTime)` Returns an integer `k` representing the largest integer such that there exists a `k`-booking in the calendar.

Example 1:

Input ["MyCalendarThree", "book", "book", "book", "book", "book", "book"] [[], [10, 20], [50, 60], [10, 40], [5, 15], [5, 10], [25, 55]] **Output** [null, 1, 1, 2, 3, 3, 3] **Explanation** MyCalendarThree myCalendarThree = new MyCalendarThree(); myCalendarThree.book(10, 20); // return 1 myCalendarThree.book(50, 60); // return 1 myCalendarThree.book(10, 40); // return 2 myCalendarThree.book(5, 15); // return 3 myCalendarThree.book(5, 10); // return 3 myCalendarThree.book(25, 55); // return 3

Constraints:

* `0 <= startTime < endTime <= 109` * At most `400` calls will be made to `book`.

Code Snippets

C++:

```
class MyCalendarThree {
public:
MyCalendarThree() {

}

int book(int startTime, int endTime) {

}
};

/**
* Your MyCalendarThree object will be instantiated and called as such:
* MyCalendarThree* obj = new MyCalendarThree();
* int param_1 = obj->book(startTime,endTime);
*/
```

Java:

```
class MyCalendarThree {

public MyCalendarThree() {

}

public int book(int startTime, int endTime) {

}
}

/**
* Your MyCalendarThree object will be instantiated and called as such:
* MyCalendarThree obj = new MyCalendarThree();
* int param_1 = obj.book(startTime,endTime);
*/
```

Python3:

```
class MyCalendarThree:

def __init__(self):


def book(self, startTime: int, endTime: int) -> int:



# Your MyCalendarThree object will be instantiated and called as such:
# obj = MyCalendarThree()
# param_1 = obj.book(startTime,endTime)
```