Line Sweep Algorithm Concepts & Qns

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CSwithMIK

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Video - 7

Motivation :

Your posts/comments about your success

story not only make me feel good, but also motivates me to do even better & work even harder.
Always remember, if someone is able to do it, you definitely can as well.

MIK...

3-bookings are !

732. My Calendar III

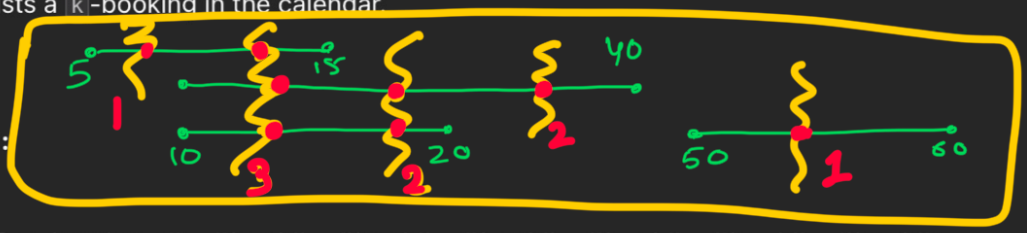
Hard | Topics | Companies | Hint

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
```

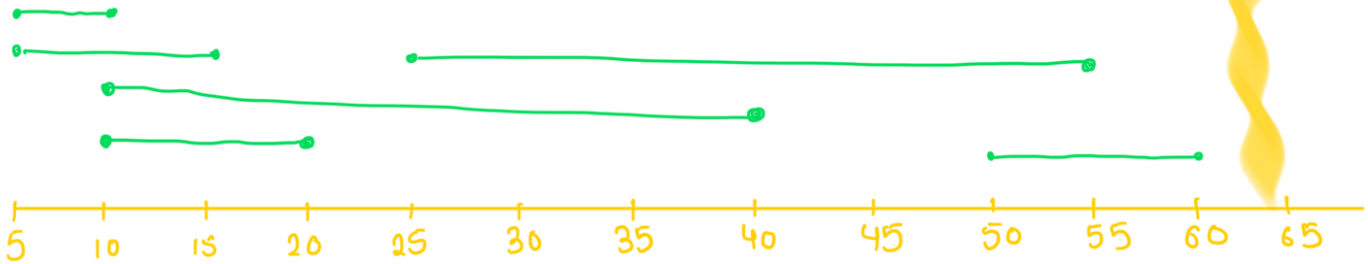
Constraints:

- `0 <= startTime < endTime <= 10^9`
- At most `400` calls will be made to `book`.

Thought Process

(50,60), (10,20), (10,40), (5,15), (5,10), (25,55)

ans = { 1, 1, 2, 3, 3, 3 }



Events = { (10, +1), (20, -1), (50, +1), (60, -1), (5, 7) }

Sort →

Everytime we need to sort when a new event is added

map

10 → 2

20 → -1

40 → -1

50 → +1

60 → -1

count = 1 - 1 + 1 →

maxInt = 2

map + line sweep.

Hard. → 70 %.