

1845. Seat Reservation Manager

Medium

Topics

Companies

Hint

Design a system that manages the reservation state of n seats that are numbered from 1 to n .

Implement the `SeatManager` class:

- `SeatManager(int n)` Initializes a `SeatManager` object that will manage n seats numbered from 1 to n . All seats are initially available.
- `int reserve()` Fetches the **smallest-numbered** unreserved seat, reserves it, and returns its number.
- `void unreserve(int seatNumber)` Unreserves the seat with the given `seatNumber`.

Example 1:

Input
["SeatManager", "reserve", "reserve", "unreserve", "reserve", "reserve", "reserve", "reserve", "unreserve", "reserve"]
[[5], [], [], [2], [], [], [], [], [5]]

Output
[null, 1, 2, null, 2, 3, 4, 5, null]

Explanation

```
SeatManager seatManager = new SeatManager(5); // Initializes a SeatManager with 5 seats.
seatManager.reserve();    // All seats are available, so return the lowest numbered seat, which is 1.
seatManager.reserve();    // The available seats are [2,3,4,5], so return the lowest of them, which is 2.
seatManager.unreserve(2); // Unreserve seat 2, so now the available seats are [2,3,4,5].
seatManager.reserve();    // The available seats are [2,3,4,5], so return the lowest of them, which is 2.
seatManager.reserve();    // The available seats are [3,4,5], so return the lowest of them, which is 3.
seatManager.reserve();    // The available seats are [4,5], so return the lowest of them, which is 4.
seatManager.reserve();    // The only available seat is seat 5, so return 5.
seatManager.unreserve(5); // Unreserve seat 5, so now the available seats are [5].
```

Constraints:

- $1 \leq n \leq 10^5$
- $1 \leq \text{seatNumber} \leq n$
- For each call to `reserve`, it is guaranteed that there will be at least one unreserved seat.
- For each call to `unreserve`, it is guaranteed that `seatNumber` will be reserved.
- At most 10^5 calls **in total** will be made to `reserve` and `unreserve`.

Seen this question in a real interview before? 1/4

Yes

No

Accepted 115.9K

Submissions 167.8K

Acceptance Rate 69.1%

Topics

Companies

Hint 1

Hint 2

Hint 3

Similar Questions