1845. Seat Reservation Manager

Medium 283 21 Add to List Share

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"]
[[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 <= n <= 10^5`
- `1 <= seatNumber <= 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.

Java Autocomplete

```java
class SeatManager {

    private final PriorityQueue<Integer> priorityQueue;

    public SeatManager( int n ) {

        priorityQueue = new PriorityQueue<>();

        for (int i = 1; i <= n; i++)
            priorityQueue.add(i);

    }

    public int reserve() {
        return priorityQueue.remove();
    }

    public void unreserve( int seatNumber ) {
        priorityQueue.add(seatNumber);
    }
}

/**
 * Your SeatManager object will be instantiated and called as such:
 * SeatManager obj = new SeatManager(n);
 * int param_1 = obj.reserve();
 * obj.unreserve(seatNumber);
 */
```

Your previous code was restored from your local storage. Reset to default