Teko Hiring Test - Software Engineer

Instruction:

You will need to complete a take-home assignment: a Coding Task to help us understand your code style. Use the opportunity to demonstrate coding best practices as you understand them.

The hiring assignments are confidential. Please do not share/publish our question, your code, or your design. Please do not share any information related to our assignment to the public or anyone else unrelated to your hiring process with Teko.

This task is not expected to take longer than **6 working hours**.

Due to a novel pandemic spreading around the world, seating must obey the following distancing rules:

- People within the same party can sit next to each other without restrictions.
- Different parties of people must have a minimum Manhattan distance of **min_distance** from one another (diagonal moves are not permitted).
- The example below marks the calculated shortest distance between 2 persons with x's. The distance between the two 1's is, therefore, 7. If min_distance = 7, then this seating is acceptable.

```
[[1, X, X, X, X,],
 [0, 0, 0, 0, X,],
 [0, 0, 0, 0, X,],
 [0, 0, 0, 0, 1,]]
```

ACME Co is looking for ways to ensure that cinema goers respect social distancing. You're tasked to write a gRPC or REST service that ACME can adopt to run its cinema operation.

- The service should be configurable to support a given cinema size and minimum distance (described below), which can be specified as: (rows, columns, min_distance).
- The service should allow one RPC that cinema operations can use to query for a set of seats currently available for purchase. The input will be a number that specifies how many seats are needed. The seats should be together.
- The service should allow one RPC that operations can use to reserve a given set of seats, where seats are specified by a (row, column) coordinate ((0, 0) is top left).

Take note of the following:

- Please explicitly state any assumptions you make about business requirements/preferences.
- Assume that the theater can be massive and that there will be many clients calling your API
- Your solution should showcase your coding style and knowledge.

Do not limit yourself to the suggested topics or details mentioned here. Feel free to dive into a separate area or separate aspect of the area as you see fit. We want you to showcase your technical depth and distinguish yourself from less experienced engineers.