Parking Garage

Design a parking garage backend component.

Assumptions

1. The parking garage has multiple levels. Each level has multiple rows of spots.
2. The parking garage can park motorcycles, cars, and buses.
3. The parking garage has motorcycle spots, compact spots, and large spots.
4. A motorcycle can park in any spot.
5. A car can park in either a single compact spot or a single large spot.
6. A bus can park in five large spots that are consecutive and within the same row. It cannot park in small spots.

Goal

Define classes and interfaces in your language of choice (Java, Python, C#, etc) to simulate the parking garage. Implement **all methods of at least one class**. Be ready to discuss your design decisions during the interview. Writing tests for your implementation is a plus.

Bonus: Design DB schema and implement routines that store and read “state of the garage” from a DB. The state should at least include a list of all vacant and occupied spots. Think about different addressing schemes and how they can be mapped onto the DB design.

Challenge Tips

Here are some tips to help you be successful at this stage of the interview process. We understand that some of them may not apply to you, if you are straight out of college, or have little experience working in the tech industry. Do your best!

- Your solution to this assessment should be complete, tested, and documented.
- The biggest aspect of your skill set an evaluator will be trying to glean is "how do you write production code?" In other words, how do you write code you plan to release into production, share with other engineers, and will it be easily usable and maintainable?
- The most elegant solution in terms of algorithmic approach and feature-fullness, is certainly recognized and taken into account when grading, but the aforementioned "production code" focus is more important.

Notes

While we know there are many college project implementations of parking garages, this assignment allows for a variety of solutions to a real-world problem. Your solution will be reviewed by the engineers you would be working with if you joined Also Energy. We are interested in seeing your real-world design, coding, and testing skills.