

## Automated parking lot

### Problem:

You should design and implement a backend system for an automated parking lot.

The parking has N floors, where each floor may have a different ceiling height and a different total weight capacity.

There is only one entrance to the lot, but additional entrances might be added later.

Any client car, when it arrives at the parking building, gets automatically scanned. Its weight and height are passed to the system as the car approaches the gate. The system must assign the approaching car to the best suitable spot and calculate the resulting price per minute.

The payment, car transportation, and the rest is handled by other components, and you can simply emulate them to build a business flow. E.g. just add placeholder methods, where you would call methods to transport the car or transfer data to the billing system.

There are only a few initial business requirements in that system, but it should be easily extensible.

### Technical requirements:

- Try to keep your code as readable as possible. We value code simplicity.
- Use an object-oriented approach with common design patterns where applicable.
- We use spring boot in our daily work, but you are free to choose any other framework.
- For datastore you can take any embedded database, like H2 or HSQL, but it should be possible to easily replace with any other datastore later on.
- Java 11 or newer.
- Tests are mandatory.

You can read more about the automated parking systems in wikipedia:

[https://en.wikipedia.org/wiki/Automated\\_parking\\_system](https://en.wikipedia.org/wiki/Automated_parking_system)

Some images of how it looks like:

