

Car rental service

Our software can be used from a browser interface to interact with customer data, car data and information regarding the rental of cars. Rental information includes the car, the customer who is currently renting it and the day it was rented. The possible interactions with customer and car data are to list all, edit or delete existing data as well as adding new customers or cars. Listing, adding and deleting is also implemented for rental information. Editing existing rental information was deemed unnecessary for the user.

We utilize a strict three-layer architecture using React for the frontend, Java Spring Boot for the backend and an H2 in-memory database. The H2 database is very simple and sufficient for presenting an MVP. However, because we use JPA/Hibernate, changing the database for production is feasible. The system implements a client-server pattern with communication via RESTful APIs. This enables the distribution of all layers on different machines (assuming the database was changed). All in all, this architecture provides high maintainability and scalability. Furthermore, parallel development is simplified. Java Spring Boot was selected for the backend due to existing familiarity with the framework. From this choice, there were two options: Either use Java Server Faces as in previous projects or change the framework. In order to decouple the frontend and the backend, we chose to do the latter by using React because it is popular for modern web development.