Code report:

"Car Rental Application" by Philipp Link

The Car Rental Application is designed to manage the basic operations of a car rental business. These include adding new customers, managing the customers, vehicle management and rental bookings. For each of these operations there are different, collapsable menus to add or edit the data. The application consists of a React.js frontend and a Node.js/Express backend. To process the Data it is using an SQLite3 database for simplicity, while Axios is used for handling HTTP requests between the frontend and backend.

Because I recently started to learn React.js as part of the "Meta Frontend Developer" Certificate by Coursera, I chose this as the Frontend technology. It's used by many of the big companies and their products like AirBnB, Netflix or Meta and because of the virtual DOM approach it ensures high speed rendering. I also like the modular development due to the component based architecture, which allows to extend the software with ease and to track down errors by component.

I used Node.js as the Backend technology because I already used it for small projects in University. Being familiar with it and knowing there are a lot of libraries to extend the functionality led to using the lightweight database SQLite3. It is easy to set up and a good way to start a first local test development. If needed it is easy to upgrade to a more robust database like MySQL in the future as the structure and SQL commands remain similar. Finally, I needed a way to communicate between Node and React and after some research I decided to use the Axios library for handling HTTP requests between the front- and backend due to its simplicity by transforming JSON data automatically. During the project I worked with ChatGPT to speed up the coding process and generating a good foundation as well as creating some sample data.