

Project Title: Car Rental Management System

Members:

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Project Description:

The Car Rental Management System is a web application that allows users to perform CRUD (Create, Read, Update, and Delete) operations on a car booking database. The application allows users to manage their car rental business efficiently by providing a user-friendly interface to perform various tasks related to rental management.

Technologies Used:

- **Frontend:** ReactJS
- **Backend:** NodeJS, ExpressJS
- **Database:** MongoDB

Collections:

- **Bookings:** id, carid, userid, day, noOfDays, startDate, endDate
- **Reviews:** id, bookingId, ratings, feedback
- **Cars:** id, title, make, year, image
- **Users:** id, name, email, username

Basic Operations:

- Perform basic CRUD (Create, Read, Update, and Delete) operations.

Complex Operations:

- Retrieve booking details (**collections used: cars, booking**) for a user (**collection used: user**) (My Booking Page)
- Retrieve the cars (**collection used: cars**) and show how many of the car has been booked (**collection used: booking**) by the people and any ratings if given (**collection used: review**) (Cars Page)
- Retrieve Feedback (**collections used: review**) for a particular booking (**collections used: user, car, booking**) (All bookings page)

Visualizations:

- No. of cars booked per date

Functionalities:

- One can sign up for the web application using their details such as name, and unique username, email.
- One can edit any of their details such as name, username, and email, or can delete the user from the collection.
- They can then log in to the application using their username.
- They can see a different list of cars, from where they can perform basic crud operations such as adding a car, editing car details, booking a car, and deleting a car from the database using UI.
- They can view all their bookings and give reviews and ratings to the car they have booked.
- They can edit the booking if they want to change the number of days they want to rent for that particular car or the date they want to book. They can even delete the booking.
- They can edit the reviews given to the given car and can even delete them if they want.
- They can even view the bookings of all the cars that are booked with the username of users who have booked them.
- They can also see the graphical representation to get an idea about how many cars are booked on a particular date.

Below are the screenshots of the functionalities

Screenshots:

➤ Sign Up:

- This page is used to create a new user by adding its username, name, and email.
- If there is an existing user it gives an error.

Username

Name

Email

➤ **Log In:**

- This page is used to log in the user with his username.
- Once the user is logged in, he can see all the cars he has booked.

Your Username

Login

➤ **Settings:**

- This page can be used to edit the user details such as name, username, or email.
- It can even help delete the user from the collection.

Username

Name

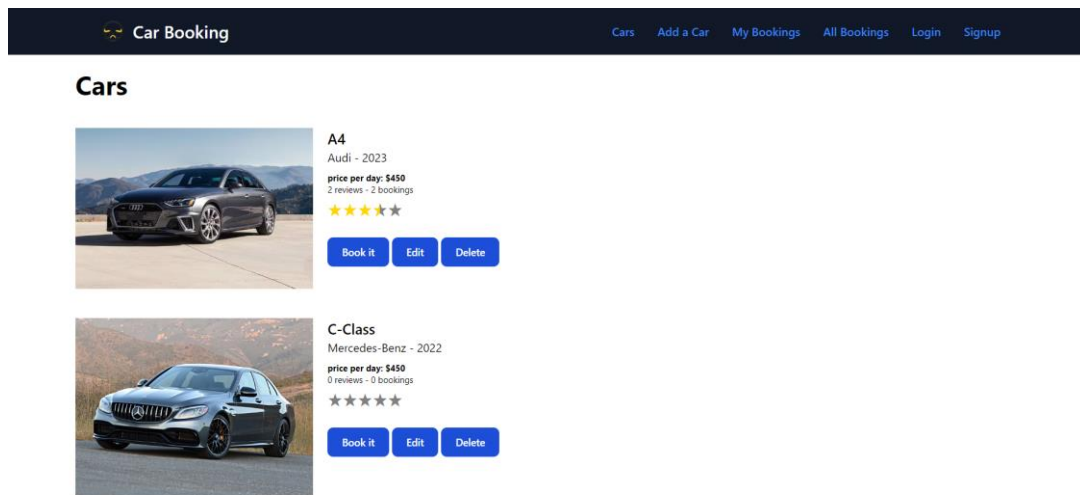
Email

Update

Delete

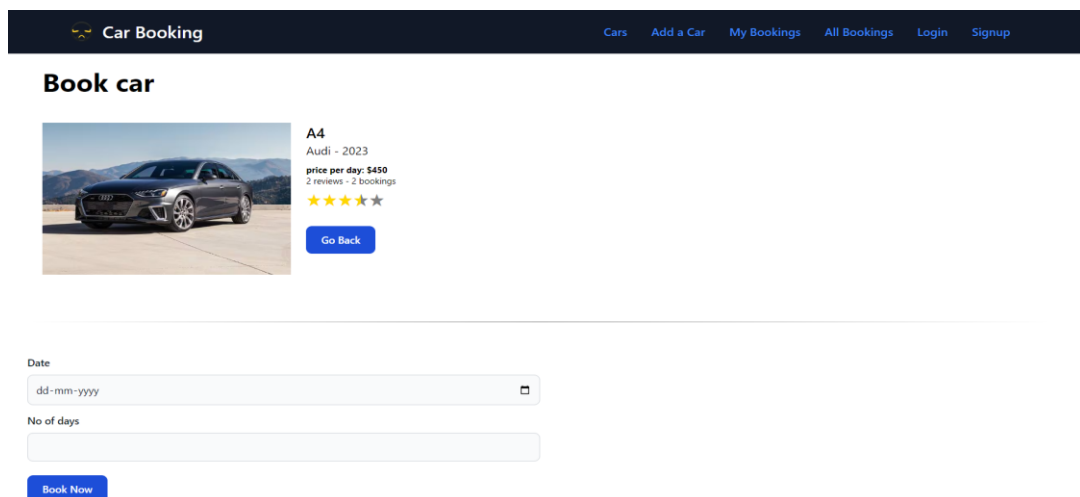
➤ Cars Page:

- It gives the list of all the cars that can be booked.
- This page gives all details of the car such as its name, model, price, number of reviews, shows ratings given to a car, and the number of bookings.
- Using this page one can book a car, edit a car and delete a car.
- This page (complex query 1) uses 3 collections of cars, bookings, and reviews to display car details, number of reviews, and number of bookings.




➤ Book Car:

- This page gives all the details of the specific car that the user is trying to book.
- User can book a car by providing the date and number of days.



➤ **Edit Car:**

- Edit car page allows editing car details.
- This page takes 5 arguments such as the Title(name) of the car, the Model(make) of the car, its year of production, its rent for the day, and the URL for the image of the car.

 Car Booking

[Cars](#) [Add a Car](#) [My Bookings](#) [All Bookings](#) [Login](#) [Signup](#)

Title

A4

Model

Audi

Year

2023

Price

450


Image URL

https://media.ed.edmunds-media.com/audi/a4/2022/oem/2022_audi_a4_sedar

Update Car

➤ **Add Car:**

- This page allows you to add a new car to the list of cars.
- This page also takes 5 arguments such as the Title(name) of the car, the Model(make) of the car, its year of production, its rent for the day, and the URL for the image of the car.

 Car Booking

[Cars](#) [Add a Car](#) [My Bookings](#) [All Bookings](#) [Login](#) [Signup](#)

Title

Model

Year

Price


Image URL

Add Car

➤ **Edit Booking:**

- This page allows users to edit bookings such as user can change the booking date and number of days.

My Bookings



Camry
Toyota - 2022

Date
06-04-2023

No of days
1

[Update](#) [Cancel](#)

★★★★★


Your feedback

[Review](#)

➤ **Delete Booking:**

- This page allows users to delete bookings.

My Bookings



Camry
Toyota - 2022
Booking started from April 05, 23for 1 days by you

[Edit](#) [Delete Booking](#)

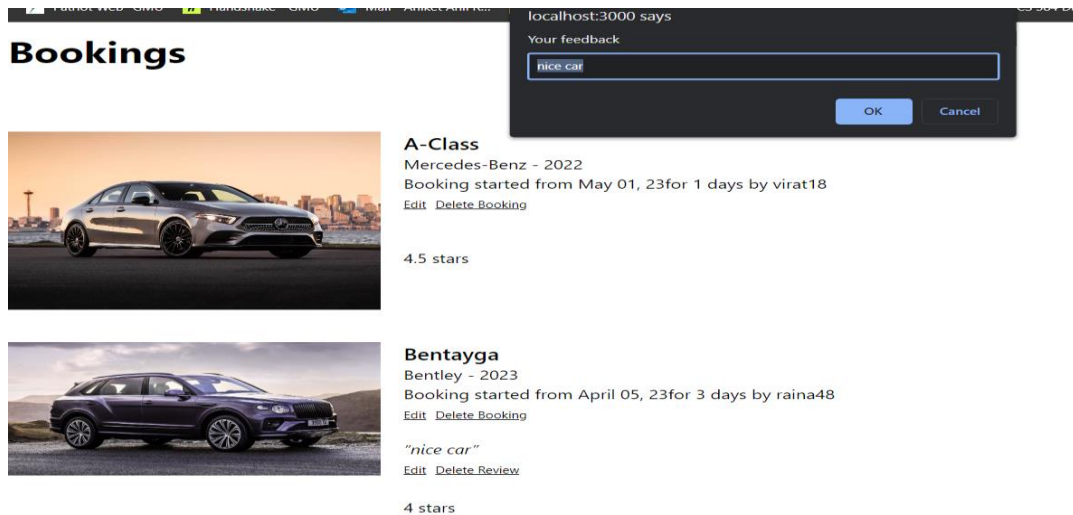
★★★★★

Your feedback

[Review](#)

➤ **Edit Reviews:**

- This page allows users to edit reviews and add new reviews of their wish.



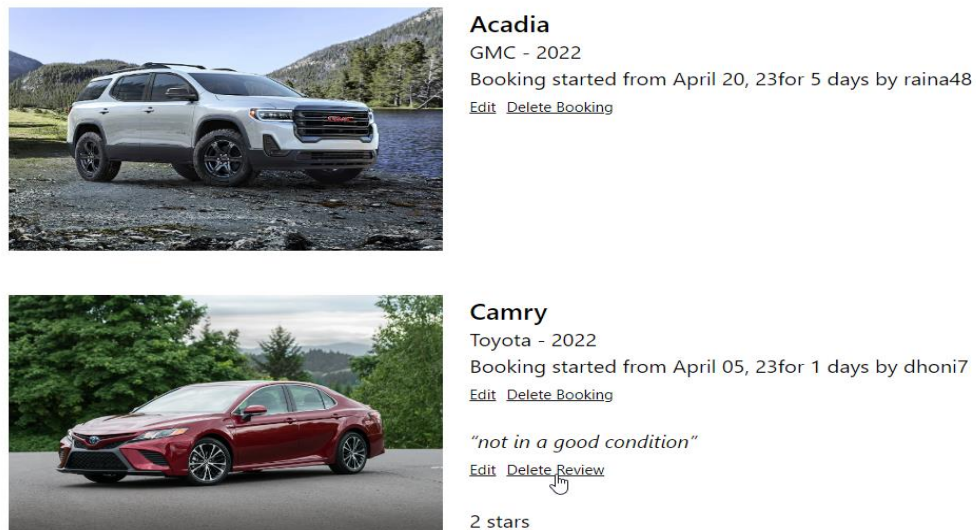
The screenshot shows a web application interface for car bookings. The main heading is "Bookings". There are two car listings:

- A-Class**
Mercedes-Benz - 2022
Booking started from May 01, 23for 1 days by virat18
[Edit](#) [Delete Booking](#)
4.5 stars
- Bentayga**
Bentley - 2023
Booking started from April 05, 23for 3 days by raina48
[Edit](#) [Delete Booking](#)
"nice car"
[Edit](#) [Delete Review](#)
4 stars

A feedback modal is open over the A-Class listing. It has a title "localhost:3000 says", a label "Your feedback", a text input field containing "nice car", and two buttons: "OK" and "Cancel".

➤ **Delete Review:**

- This page allows users to delete reviews given by the them on a car they have booked.



The screenshot shows a web application interface for deleting reviews. There are two car listings:

- Acadia**
GMC - 2022
Booking started from April 20, 23for 5 days by raina48
[Edit](#) [Delete Booking](#)
- Camry**
Toyota - 2022
Booking started from April 05, 23for 1 days by dhoni7
[Edit](#) [Delete Booking](#)
"not in a good condition"
[Edit](#) [Delete Review](#)
2 stars

The "Delete Review" link for the Camry listing is highlighted with a mouse cursor.

➤ **My Booking:**

- Once the user is logged in, he can view this page.
- This page gives the details of all the cars the user has booked.
- This page even allows user to give reviews and ratings to the car he has booked.
- This page (complex query 2) uses 3 collections User, Booking, and Cars, which gives car details from the cars collection, booking details from bookings, and user from the user collection.



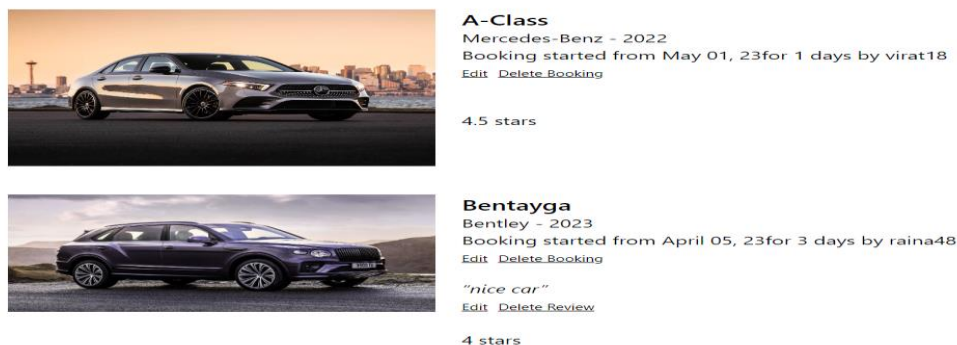
My Bookings



➤ **All Bookings:**

- This page shows the list of all the cars that are booked by the user.
- This page shows the car details, booking details, reviews, and ratings given to specific cars.
- This page (bonus query) uses 4 collections i.e., users, cars, bookings, and reviews collection to get car details, booking details, user details and reviews.

Bookings

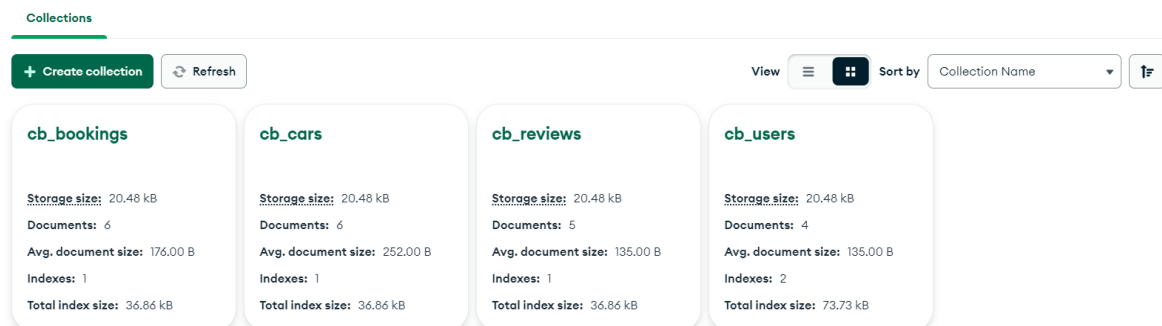


➤ Graph:

- This shows a bar chart indicating the number of cars booked on each date.



Database (MongoDB):



Accomplishments:

We successfully implemented a simple web application using a NoSQL database (MongoDB) and other technologies such as ExpressJS, ReactJS, and NodeJS.

Aniket Anil Raut worked mostly on the backend and Shubham Milind Kasar worked on the front end but the whole project was evenly distributed. We worked on the database together.

We were able to perform add, edit, and delete on cars, reviews and bookings collections and were also able to perform 3 complex queries and visualization as well.