

Game Theory Assignment

(BOOKMYCOURT)

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INTRODUCTION

The **BOOKMYCOURT** is a web application designed for managing court bookings across multiple sports centers present at multiple different places with each place having different sports and variable number of courts. The goal is to provide a interactive user friendly experience for users and as well as operations teams. The major goal of the project is to avoid multiple bookings of the court at the same time. This project is build using **MERN stack** (MongoDB, Express.js, React.js, Node.js) **TailwindCSS** for better UI. Frontend is Hosted using NETLIFY and backend is hosted using RENDER.

Design Decisions

I have implemented User Login authentication using JWT Tokens and had encrypted the password Using bcrypt library.

Now After user is logged In I had displayed the available centers using React and tailwind using the data retrieved from the MongoDB Atlas Cluster using axios for Api

callings.

After selecting one center user is presented with the available sports in that center and when the user Selects One of sports available user is directed to calender page implemented using Date-FNS library. And after selecting a day.

User can see the availability of the courts and time in a tabular format for the sport and also user can change his preference of sport check the availability.

Technologies Used

React with TailwindCSS for the Frontend: I chose React for building the frontend due to its component-based architecture, which promotes reusability and scalability. TailwindCSS was used alongside React to ensure a responsive and visually appealing user interface with minimal custom CSS.

Node.js with MongoDB Atlas for the Backend: Node.js was selected for the backend because of its efficiency in handling asynchronous operations, making it ideal for building fast and scalable web applications. MongoDB Atlas was chosen for cloud-based database storage, removing the need for managing local databases and ensuring high availability and easy scaling.

Backend Hosting on Render.com: I hosted the Node.js backend on Render.com, which simplifies the deployment and management of web services. It offers a smooth and reliable hosting experience, allowing us to focus more on development rather than infrastructure.

Frontend Hosting on Netlify: The React frontend is hosted on Netlify, a platform that provides fast and automatic deployment with seamless GitHub integration. This ensures that any new changes are quickly deployed without manual intervention.

Challenges Faced And Solutions

1. Got error due to higher versions of express and mongoose gone through multiple sources like stackoverflow mongodb documentations and finally got the solution of down grading the packages.
2. Had tough time implementing the interactive bookings for the courts but it was challenging.
3. Changes during Deployment due to small errors which does not have impact at a local level but drastically changes during production/deployment
4. Had Used my previous project experience of handling the date-fns libraries and react hooks made job a bit easier
- 5.

Future Improvements

1. A more user friendly interface can be built
2. Split booking with friends can be one of the best approach
3. Event Reminders and notifications