Court Booking App

Introduction

The Admin Panel Application is a React-based web application designed to streamline the management of sports centres and their associated sports. The system enables administrators to view all centres and their sports, add new centres, and associate sports with existing centres efficiently. It provides a user-friendly interface with responsive design and real-time feedback on administrative actions.

Design Decisions

Overall Structure

- **Modular Design**: Each functionality (e.g., dashboard, centre management, sport management) is segregated into different components for better code maintainability and scalability.
- **Ant Design UI Library**: Used for creating a visually appealing and consistent interface with minimal effort.

Navigation

- Sidebar navigation simplifies access to the core functionalities: Dashboard, Centres, and Sports.
- Dropdowns dynamically display centres for associating sports, ensuring real-time data fetching from the backend.

Notifications

- Real-time notifications alert users about successful or failed actions, enhancing the user experience.

Implementation Details

Technologies Used

- **Frontend**:
    - React.js: Core framework for building the application.
    - Ant Design: Component library for UI design.
    - Axios: HTTP client for API requests.
- **Backend**: (Assumes a separate backend server running)

- Flask/Node.js: For handling API requests.
- MongoDB/PostgreSQL: For database storage of centres and sports.

Backend API

The frontend communicates with the backend through RESTful API endpoints:

1. `GET /api/centre/all`: Fetch all centres.
2. `POST /api/centre/new`: Add a new centre.
3. `POST /api/centre/:centreId/addsport`: Add a sport to a specific centre.

Challenges and Solutions

Challenge 1: Dynamic Data Fetching

Fetching data for centres dynamically while ensuring no lag in the user interface was crucial.

Solution: Implemented useEffect hooks with dependency arrays to manage API calls and prevent unnecessary re-fetching.

Challenge 2: Error Handling

Handling API errors, such as server downtime or invalid inputs, required robust error-handling mechanisms.

Solution: Added try-catch blocks in API calls and used Ant Design notifications to display informative messages to the user.

Challenge 3: UI Consistency

Ensuring the UI is responsive and consistent across different screen sizes.

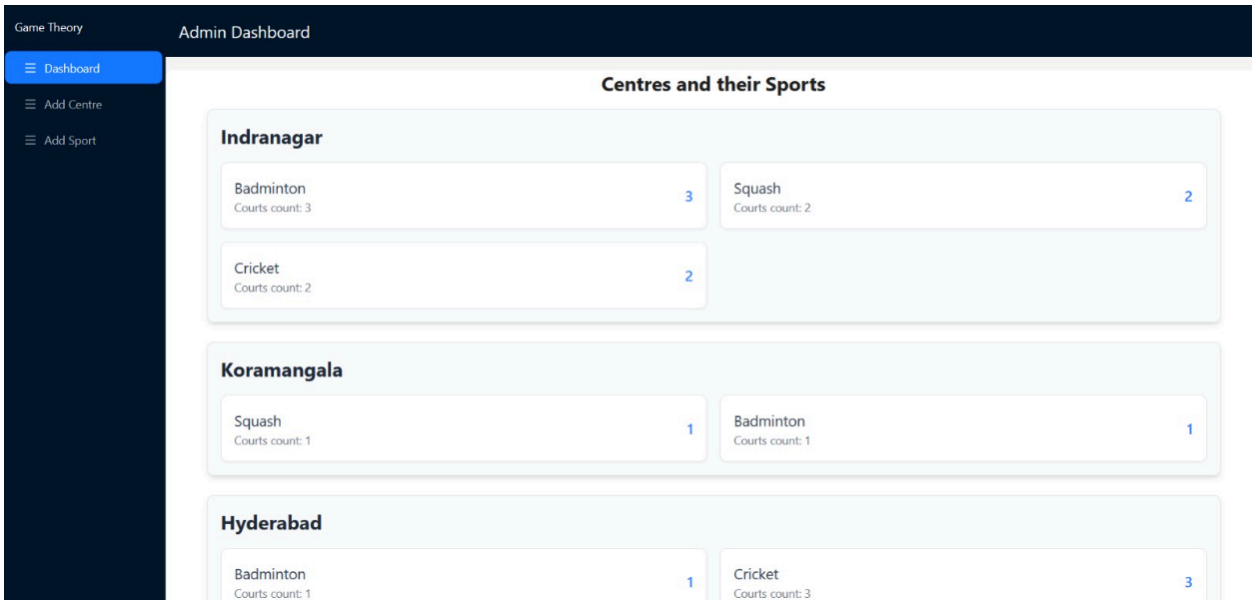
Solution: Used Ant Design's layout system and customized CSS to make the application mobile-friendly.

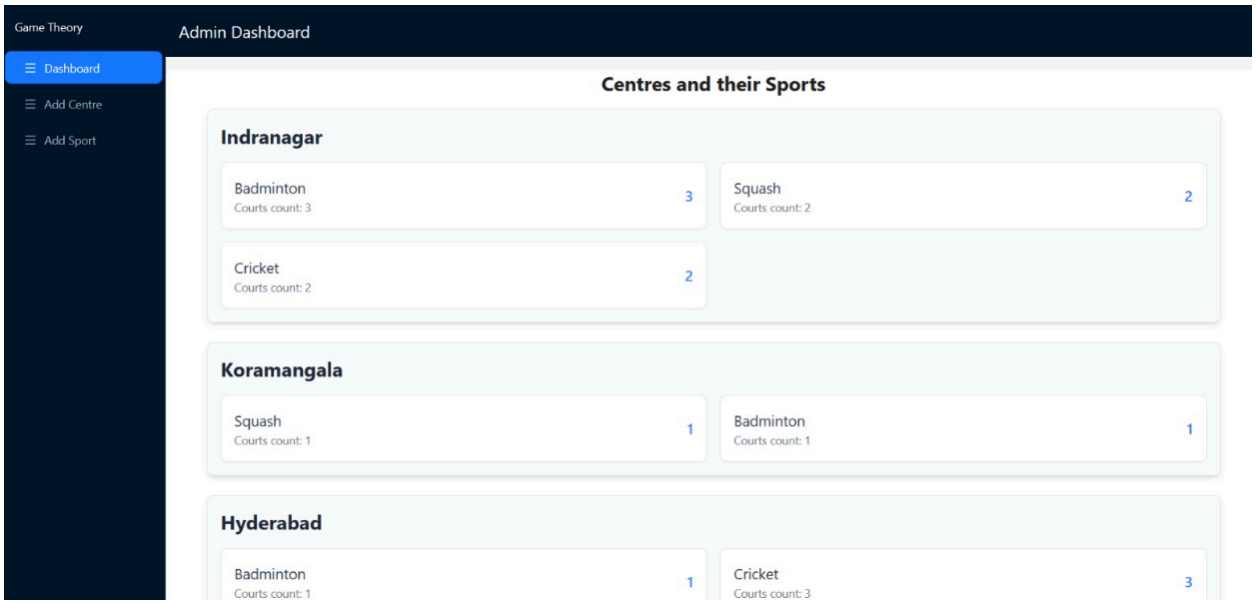
Future Improvements

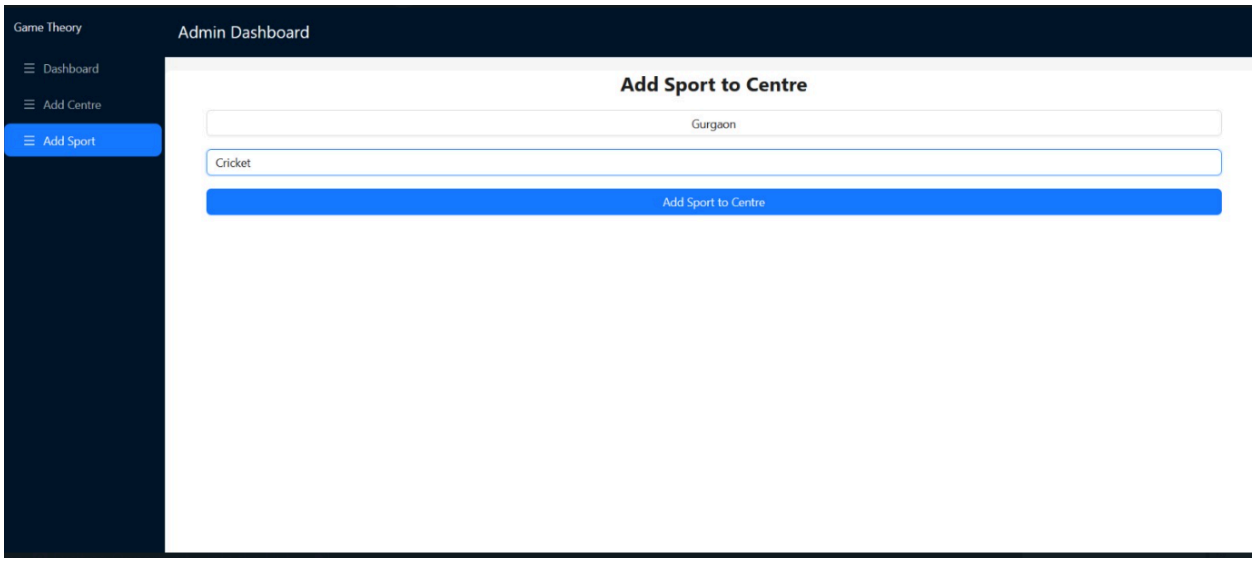
1. **Enhanced Dashboard**:
   - Add filtering and sorting capabilities for centres and sports.
   - Include search functionality for quick data retrieval.

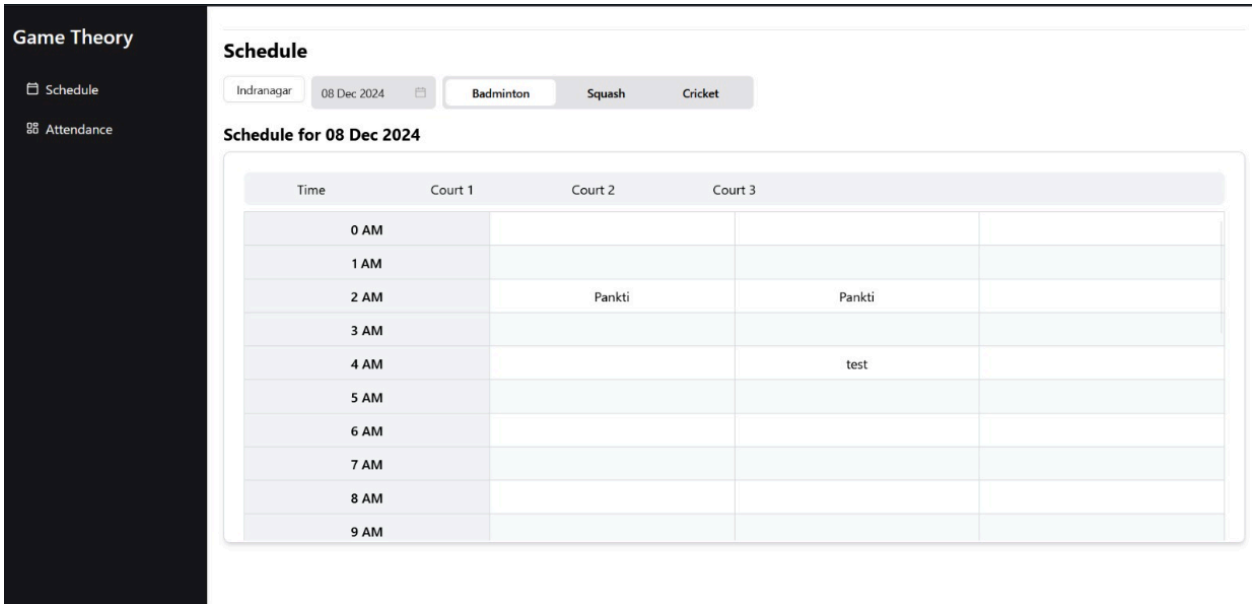
2. **Edit/Delete Options**:
    - Enable users to update or remove existing centres and sports.
3. **Authentication**:
    - Implement user authentication to secure the Admin Panel.
4. **Real-Time Updates**:
    - Use WebSockets or similar technologies to provide live updates when centres or sports are added.
5. **Performance Optimization**:
    - Reduce the initial load time by optimizing API calls and implementing caching mechanisms.

Screenshots




Game Theory
Admin Dashboard
Dashboard
Add Centre
Add Sport
Centres and their Sports
Indranagar
Badminton
Courts count: 3
3
Squash
Courts count: 2
2
Cricket
Courts count: 2
2
Koramangala
Squash
Courts count: 1
1
Badminton
Courts count: 1
1
Hyderabad
Badminton
Courts count: 1
1
Cricket
Courts count: 3
3


Game Theory
Admin Dashboard
Dashboard
Add Centre
Add Sport
Add Sport to Centre
Gurgaon
Cricket
Add Sport to Centre


Game Theory
Schedule
Attendance
Schedule
Indranagar
08 Dec 2024
Badminton
Squash
Cricket
Schedule for 08 Dec 2024
Time
Court 1
Court 2
Court 3
0 AM
1 AM
2 AM
Pankti
Pankti
3 AM
4 AM
test
5 AM
6 AM
7 AM
8 AM
9 AM