

BookMyCourt – Online Sports Facility Booking Platform

A PROJECT REPORT

Submitted by

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In partial fulfilment for the award of the degree of

DIPLOMA ENGINEERING

in

Computer Engineering



Marwadi
University
Marwadi Chandarana Group



Faculty of Diploma Studies

Marwadi University, Rajkot



Marwadi
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Faculty of Diploma Studies

Computer Engineering Department

2025-26

CERTIFICATE

This is to certify that the project entitled **BookMyCourt-Online Sports Facility Booking Platform** has been carried out by **Ridham Godhani (92300938061)** under my guidance in partial fulfilment of the degree of Diploma Engineering in Computer Engineering (6th Semester) of Marwadi University, Rajkot during the academic year 2025-26.

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We also acknowledge the **sports enthusiasts and venue owners** who shared their experiences during our research. Their feedback was instrumental in designing a user-centric platform.

This SRS report is a testament to collective effort, and we are deeply honored to have worked alongside such inspiring individuals.

With Sincere Regards

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Abstract

BookMyCourt is a user-centric online platform designed to simplify discovering and booking sports facilities for activities like Pickleball, Basketball, Squash, Football, Box Cricket, Table Tennis, and Badminton. The platform empowers players to seamlessly reserve venues, connect with teammates, and elevate their sporting experience. It brings together players, venues, and time slots into one easy-to-use space, making sports more accessible, organized, and social. The platform offers an intuitive registration system via email, phone, or Google, allowing users to quickly browse available venues by sport and location.

The frontend is developed using React.js for a smooth, fast, and user-friendly experience. Users can register using email, phone, or Google; browse sports by location; check real-time availability; and book with secure payments. Features like booking history, rescheduling, venue reviews, sharing bookings with friends, and joining waitlists when slots are full make the platform more interactive and personalized. Players can also create profiles to track and manage their activities seamlessly.

The backend is powered by Node.js, Express.js, and MongoDB, handling user data, venue details, slot logic, and payment records. Venue admins get access to a dashboard where they can manage listings, monitor bookings, adjust prices, and schedule maintenance. Features like QR check-ins, offline booking sync, staff access controls, and automated reports streamline day-to-day operations.

Beyond simple bookings, **BookMyCourt** is a complete digital platform that provides venue owners with the tools needed to grow in the digital sports era. It introduces flexible monetization options such as subscription plans, corporate team dashboards, and white-labeled venue systems. Additional revenue can be generated from ancillary add-ons like coaching sessions, equipment rentals, and refreshments. For venue partners, fast settlement reports and transparent dashboards make it easy to track earnings and slot usage. Ultimately, **BookMyCourt** is redefining how urban sports enthusiasts connect and play, making sports more accessible.

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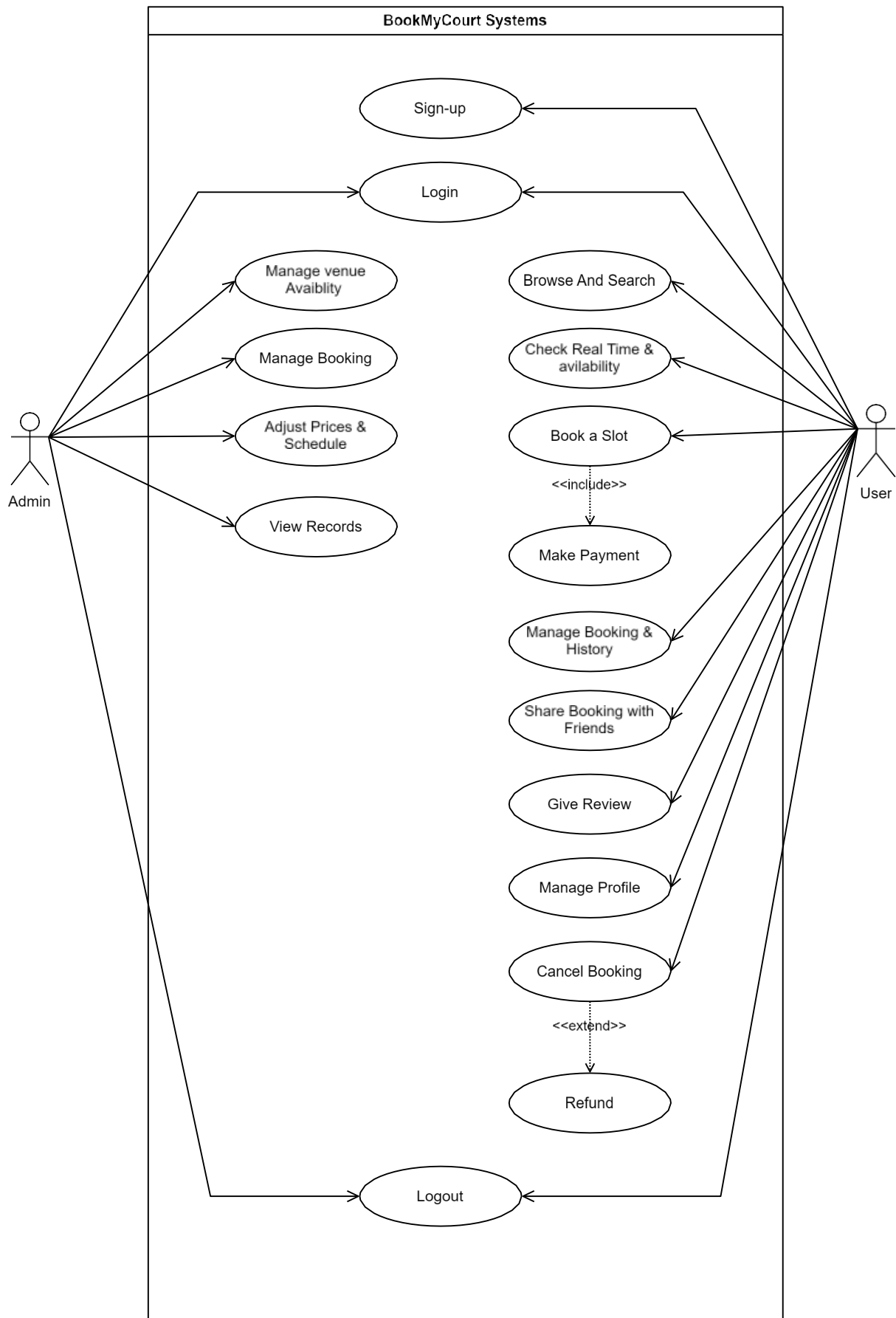


Figure 1.1 Use case Diagram

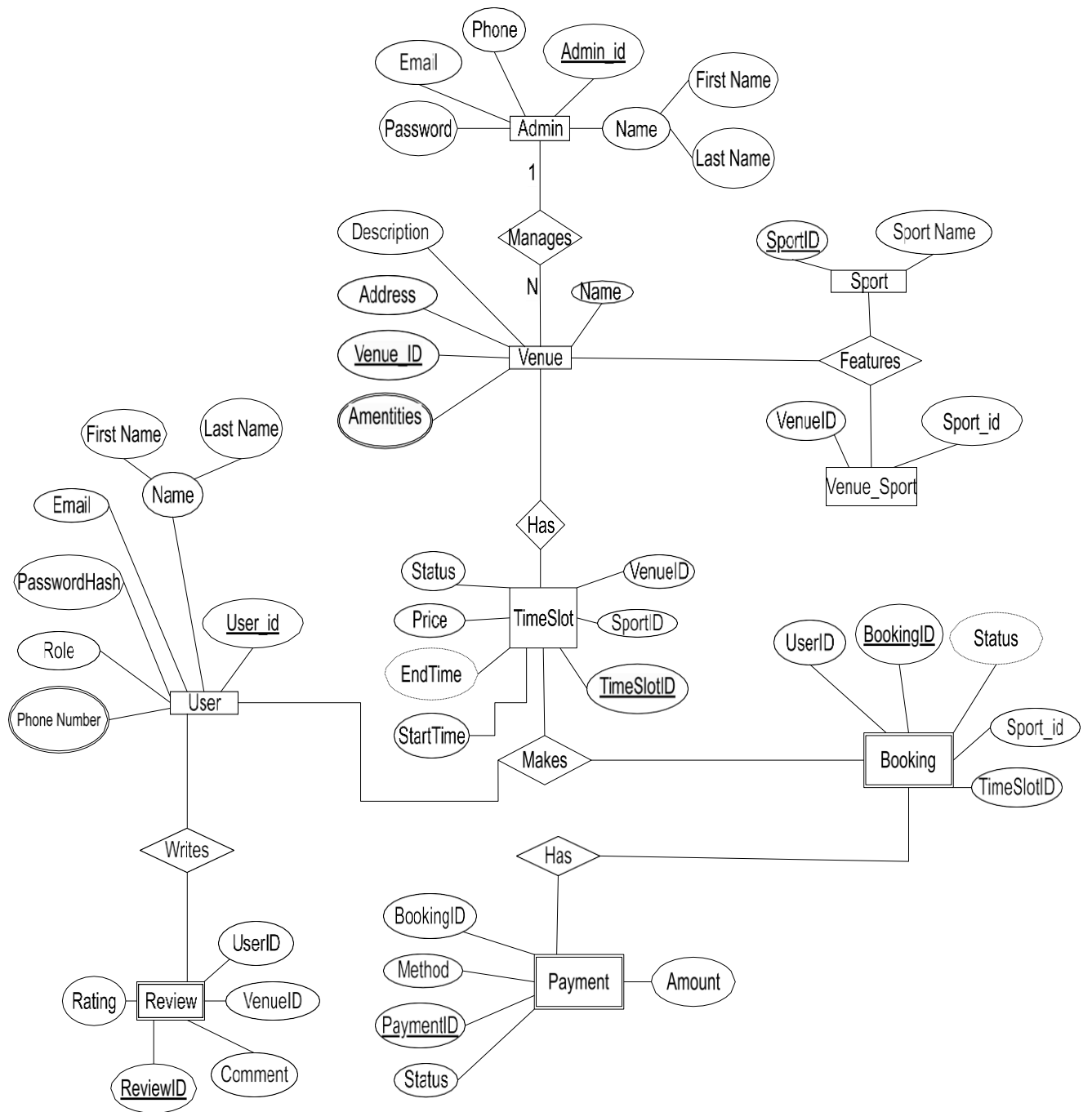


Figure 1.2 ER Diagram

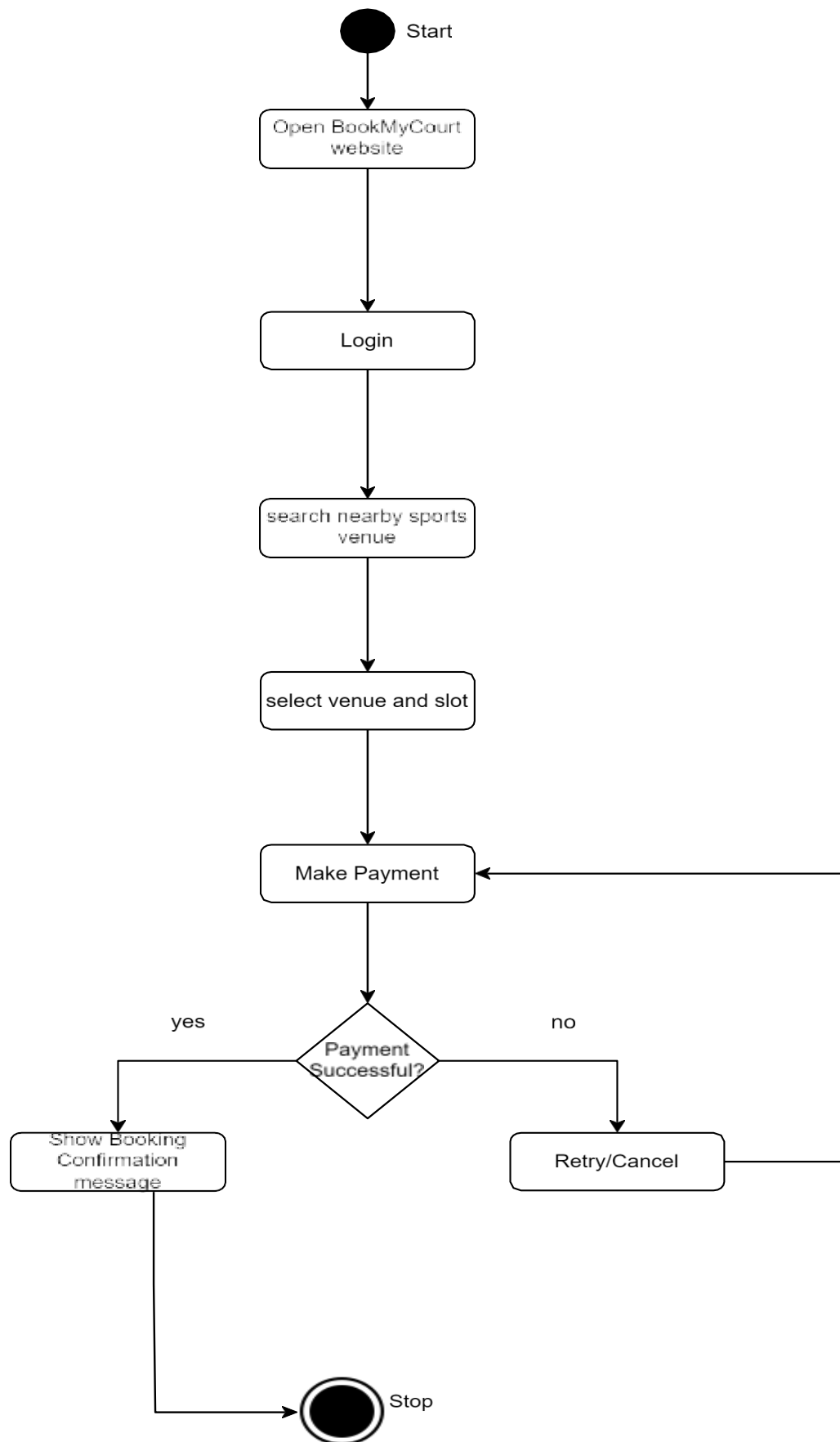


Figure 1.3 Activity Diagram

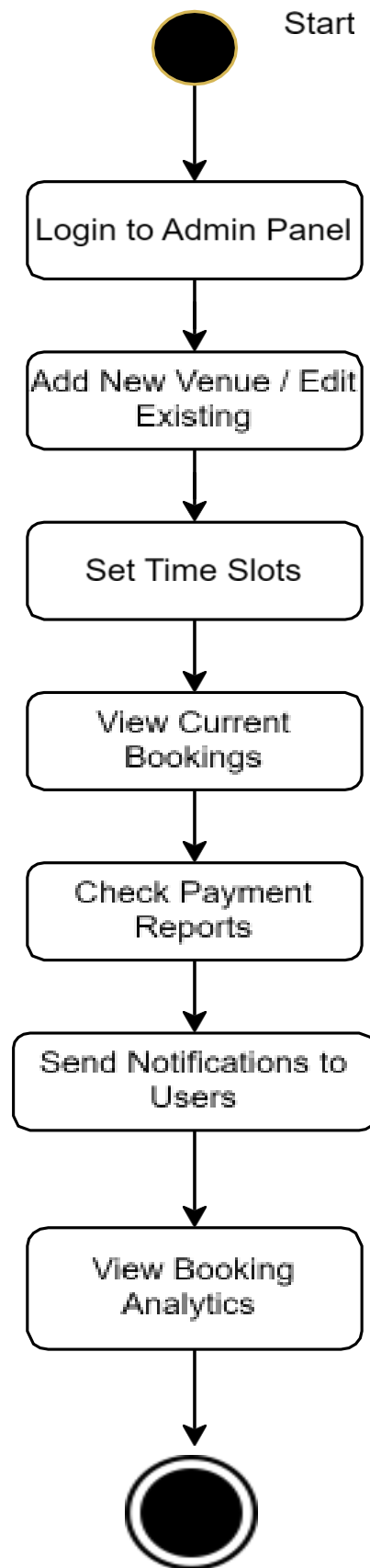


Figure 1.3.1 Admin Management & Reports Activity Diagram

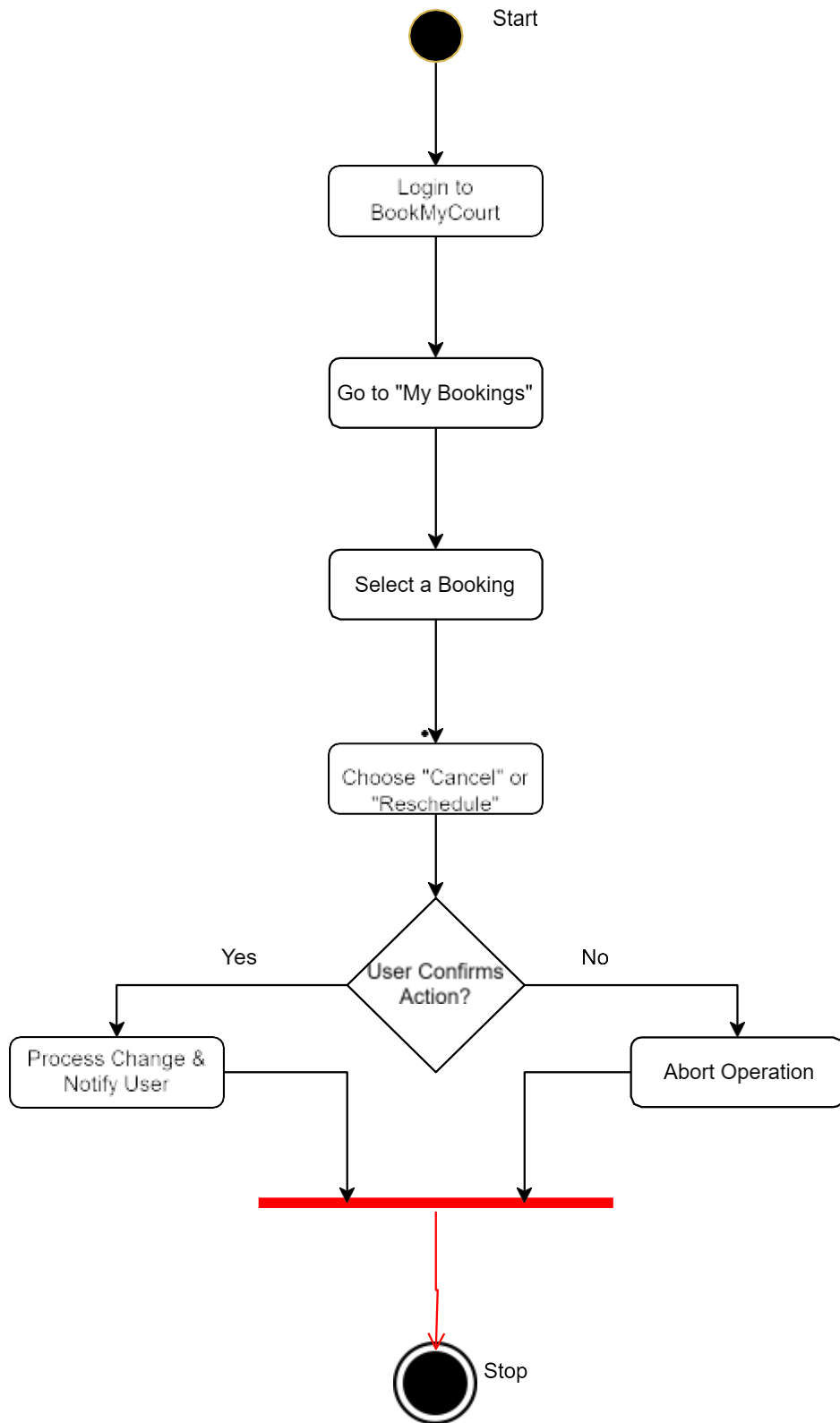


Figure 1.3.2 Cancel/Reschedule Booking Activity Diagram

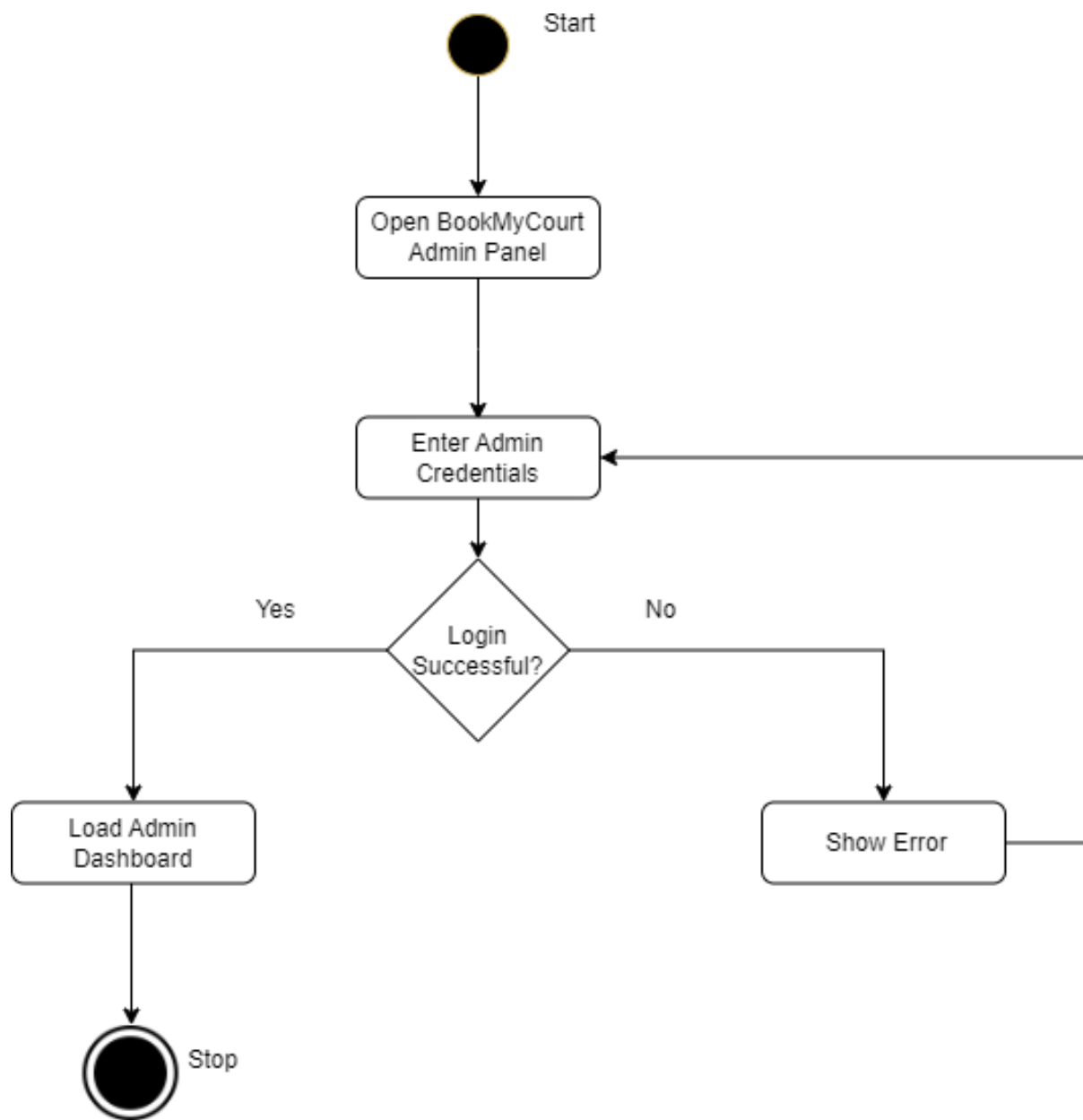


Figure 1.3.3 Admin Login Activity Diagram

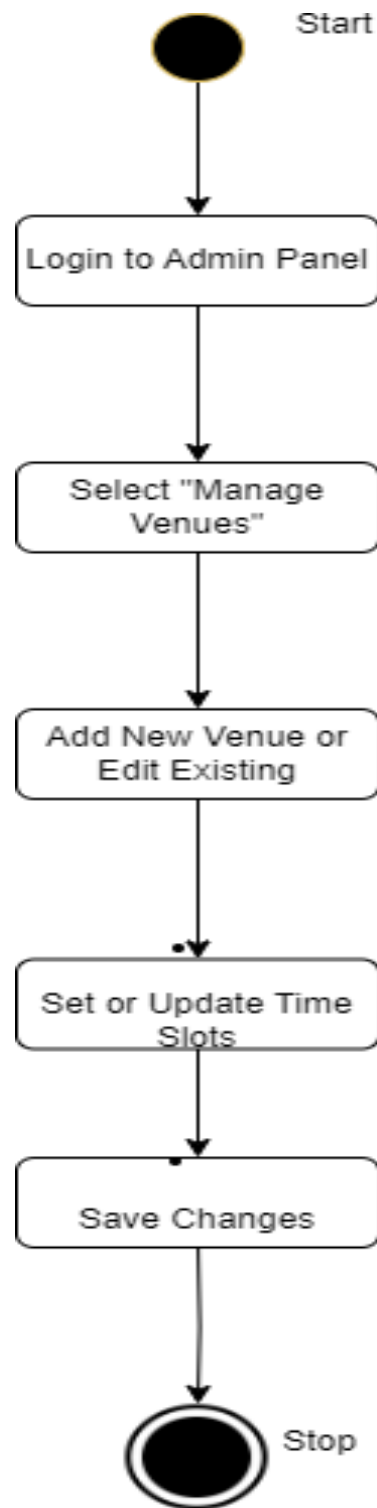


Figure 1.3.4 Manage Venues Activity Diagram

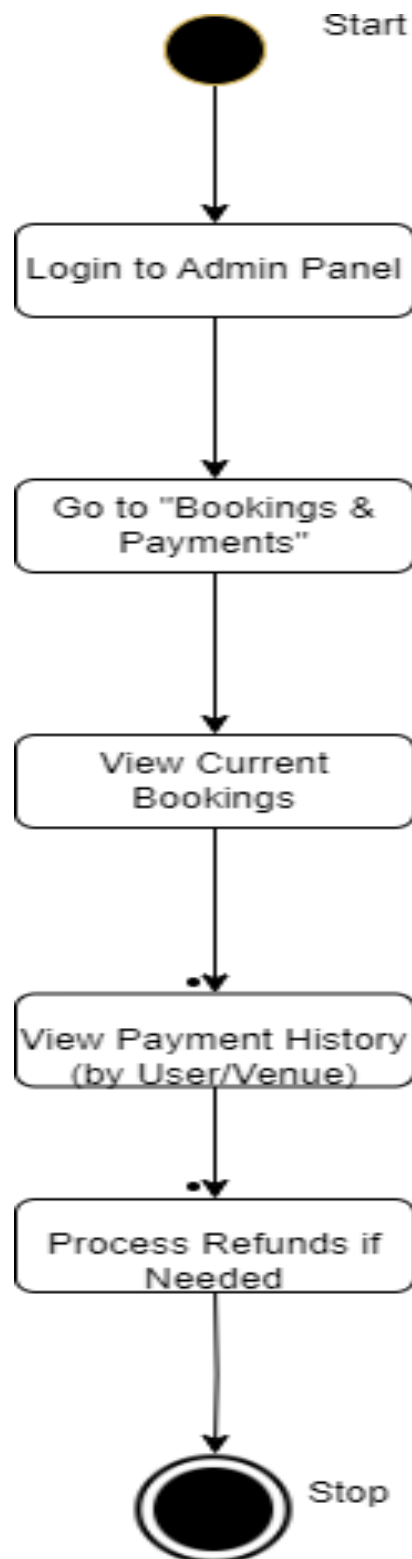


Figure 1.3.5 Handle Bookings & Payments Activity Diagram

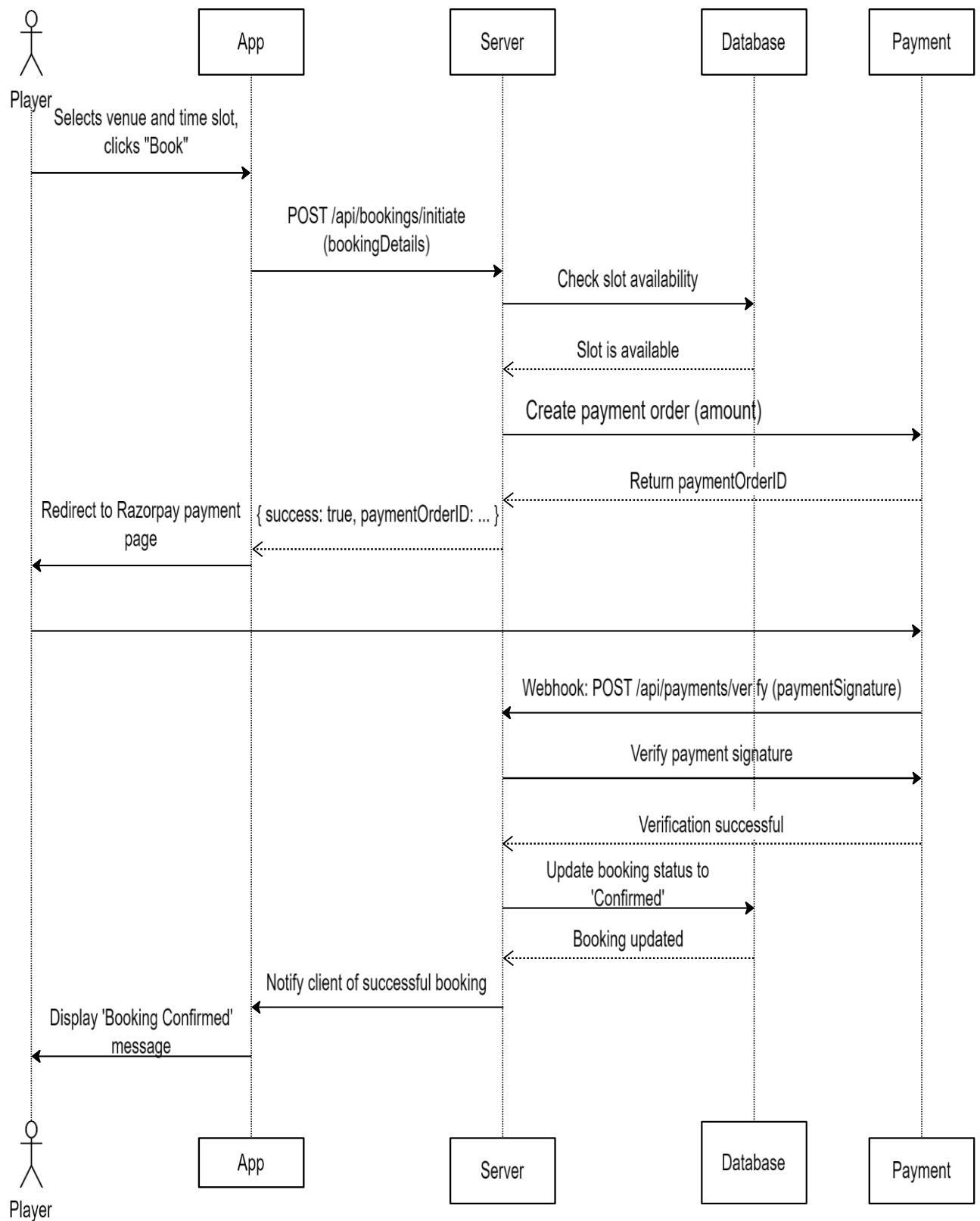


Figure 1.4 Sequence Diagram

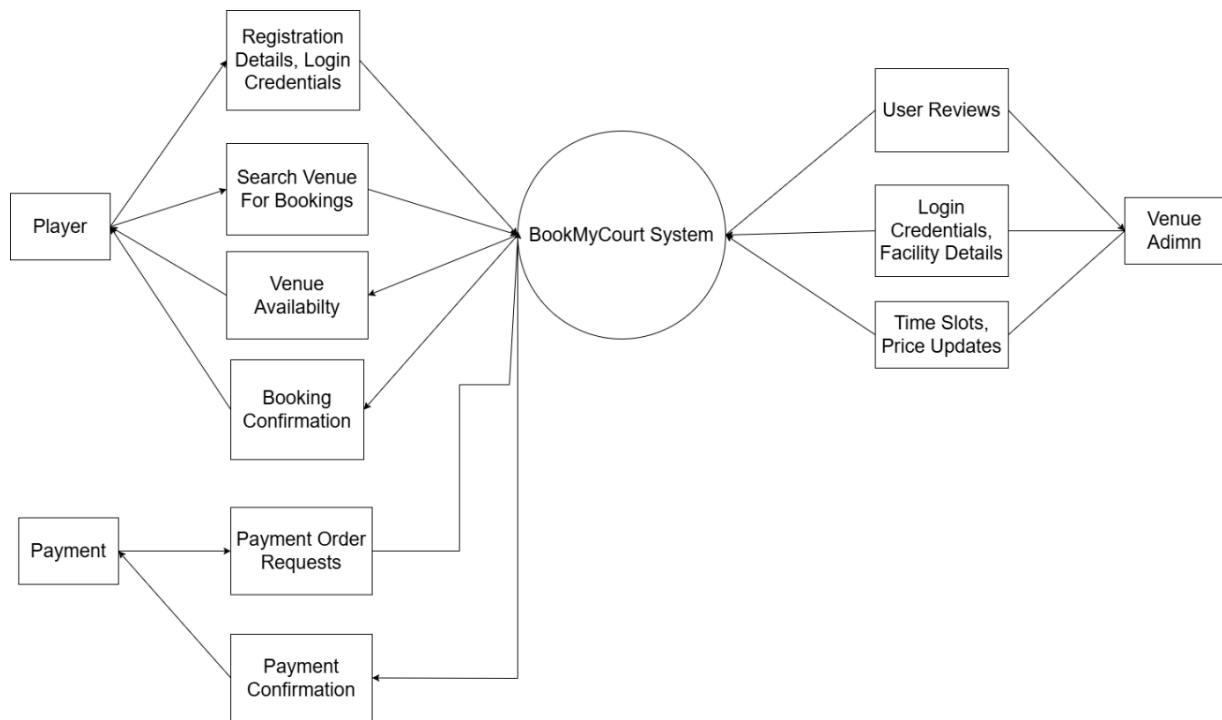


Figure 1.5 DFD Diagram(Level 0)

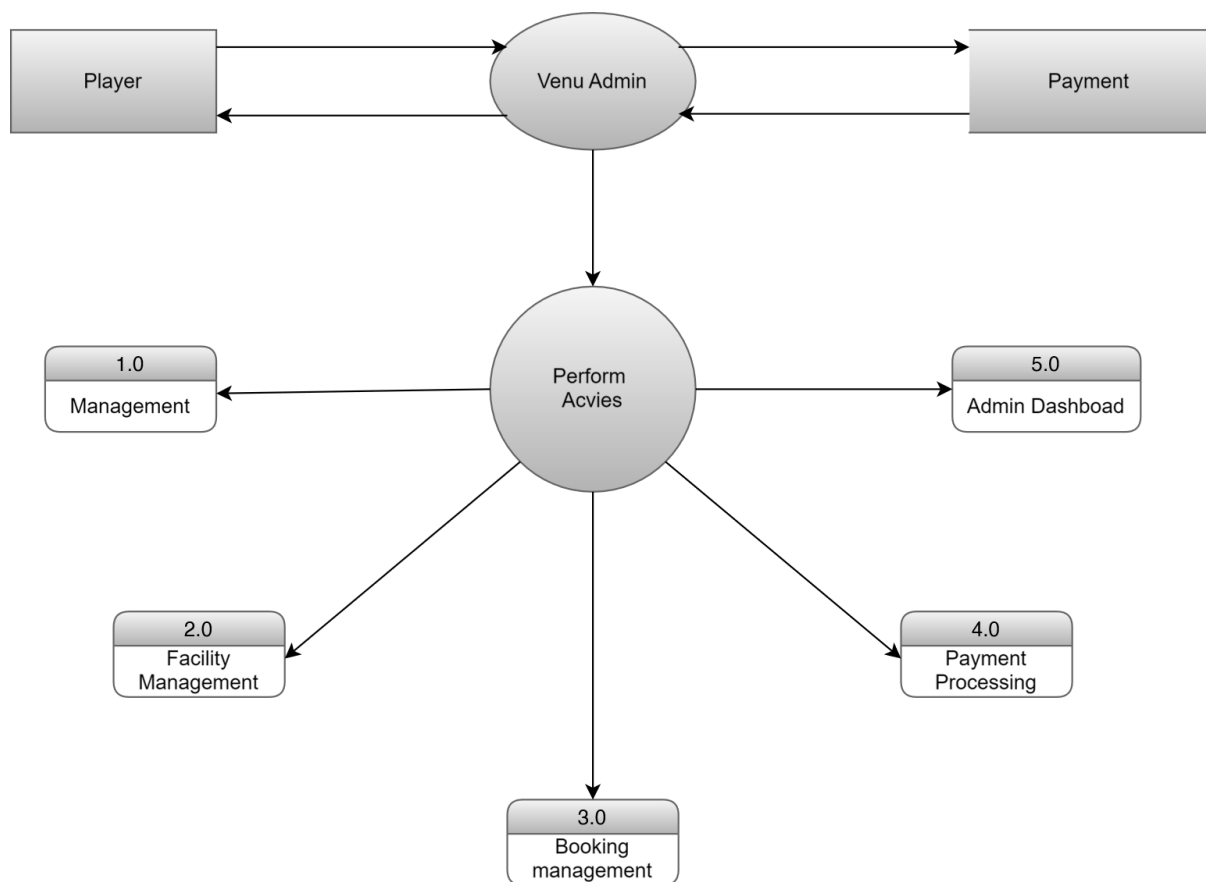


Figure 1.6 DFD Diagram(Level 1)

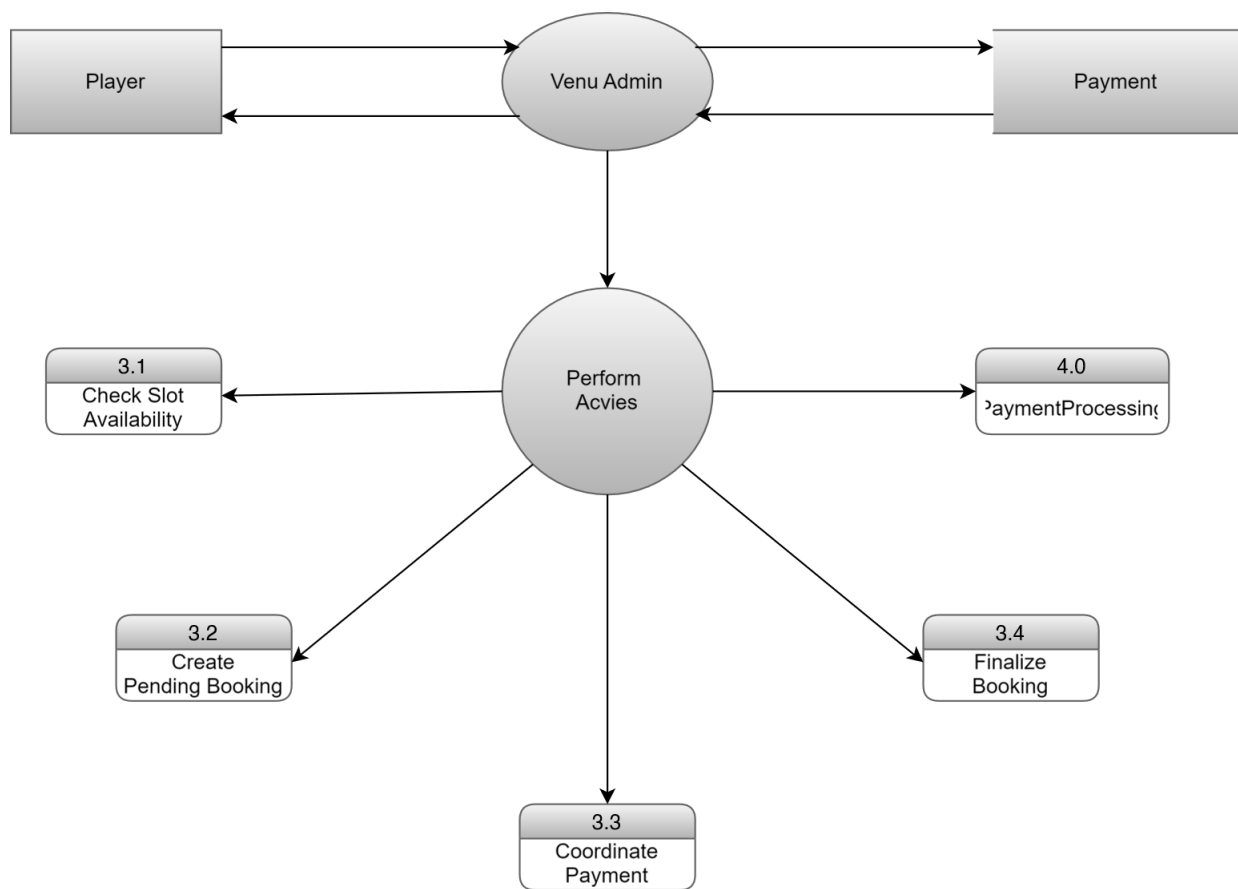


Figure 1.7 DFD Diagram(Level 2)

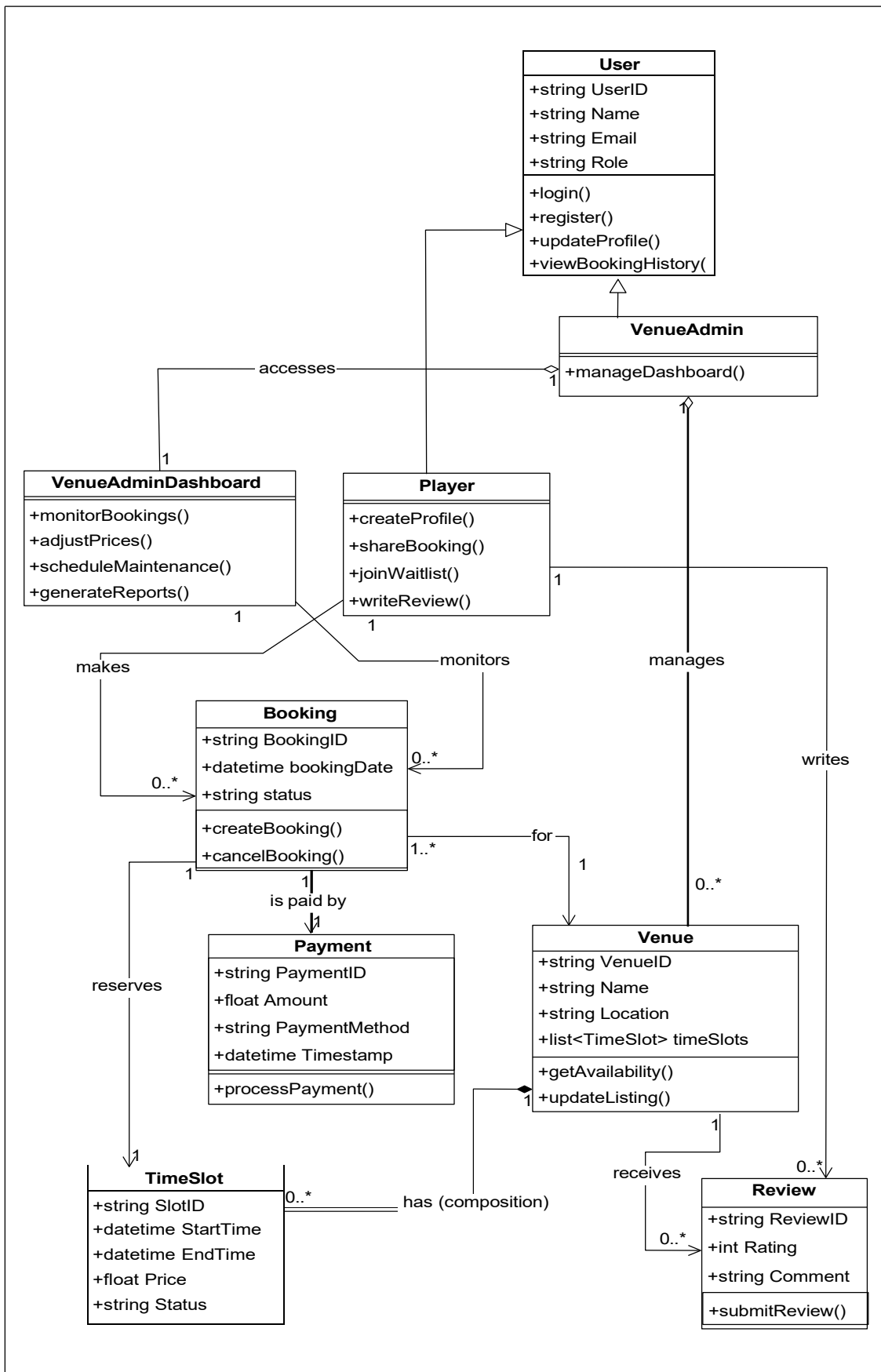


Figure 1.8 Class Diagram

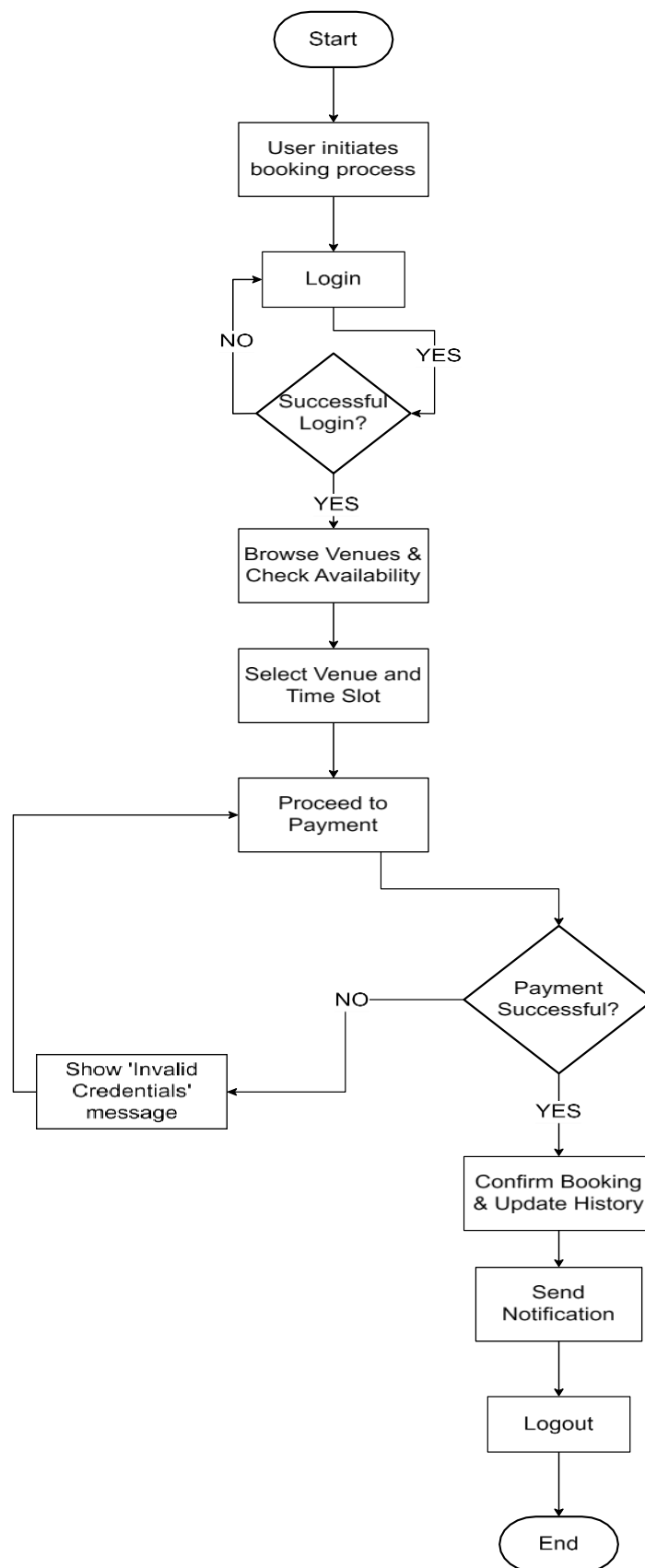


Figure 1.9 Flowchart

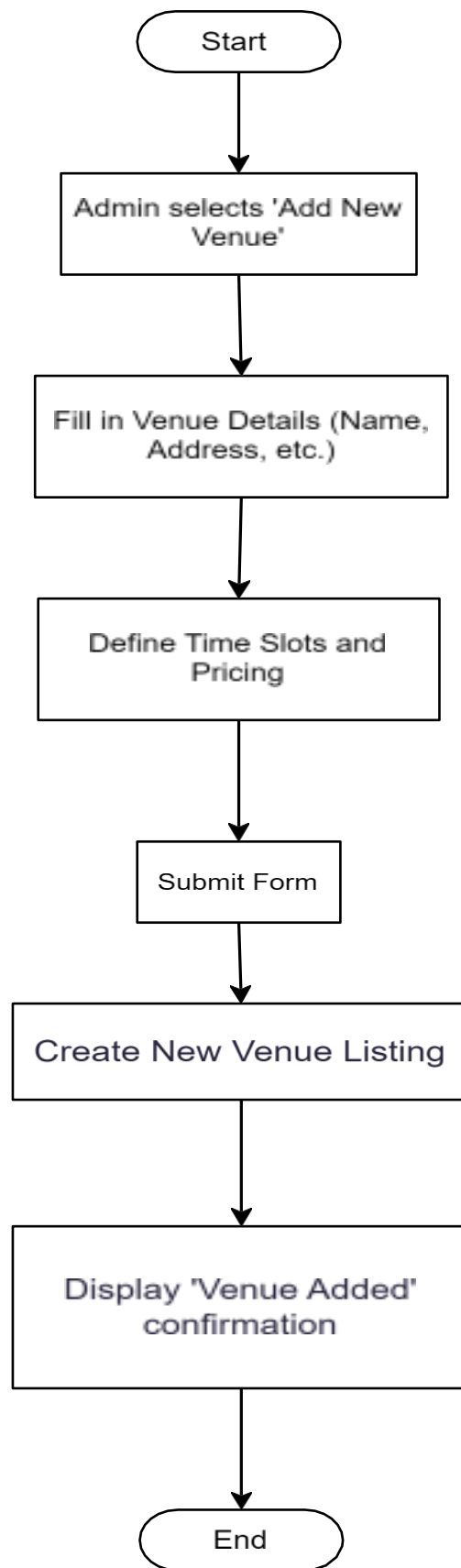


Figure 1.9.1 New Venue Registration Flowchart

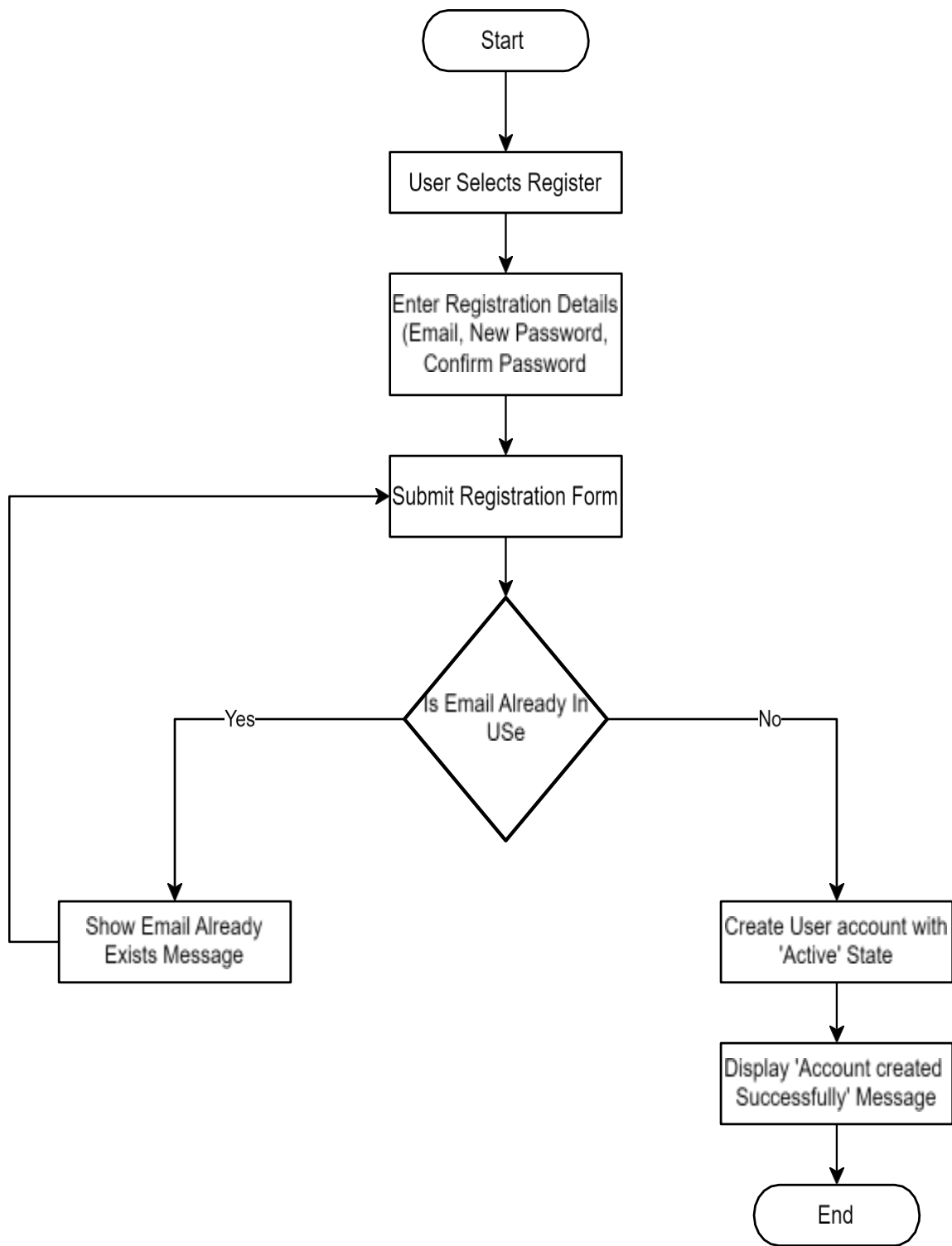


Figure 1.9.2 User Registration Flowchart

1. Introduction

BookMyCourt is a smart, innovative, and user-friendly online platform designed to simplify and digitalize the process of booking sports facilities. Nowadays, sports have become an essential part of people's routines for fitness, recreation, and professional growth. However, the traditional method of booking grounds or courts through phone calls, in-person visits, or manual registers often results in confusion, double bookings, and a lack of transparency. BookMyCourt aims to solve these challenges by providing a seamless, automated solution for both players and venue owners.

The primary objective of this project is to connect sports enthusiasts with sports facility providers through a centralized online system. Users can easily search for different types of sports venues such as football grounds, cricket pitches, badminton courts, tennis courts, and table-tennis halls. They can filter options based on preferred location, sport type, available time slots, price, and user ratings. The platform offers real-time availability updates, ensuring that users always have accurate information before booking.

BookMyCourt supports a smooth and guided booking experience. Once a venue is selected, users can instantly reserve time slots without waiting for offline confirmation. The platform also includes secure online payment features, automated booking receipts, push notifications, and reminders so players do not miss their scheduled session. These features make the process faster, safer, and more convenient.

For venue owners, BookMyCourt acts as a complete digital management system. They can manage bookings, update time slot availability, monitor revenue, track customer details, and manage all operations efficiently from one place. This eliminates the need for paperwork and reduces the chances of errors or overlapping reservations. It also helps venue owners improve customer service by providing easy access to booking trends and demand information.

Overall, BookMyCourt brings modernization to the sports facility booking process. It reduces manual workloads, eliminates communication gaps, saves valuable time, and enhances accessibility for users. By transforming the traditional offline process into a fully digital and automated system, BookMyCourt ensures that sports lovers can enjoy a smooth and hassle-free booking experience while venue owners can efficiently handle their business operations with improved visibility and control.

1.1 Document Purpose

This Software Requirements Specification (SRS) document outlines the functional and non-functional requirements of the BookMyCourt web application. BookMyCourt is an online sports facility booking platform designed to allow users to easily find, view and book sports venues for various games such as football, badminton, squash and more.

The purpose of this document is to provide a clear and complete understanding of the system's functionalities and design expectations. It serves as a guide for developers, testers, reviewers and clients presenting the complete system without focusing on separate modules.

BookMyCourt is a smart user-friendly platform that enables users to explore nearby sports facilities, view real-time availability and make online bookings with ease. It supports secure payment integration, user profiles, booking history, waitlist features and venue reviews. Venue administrators have access to a dedicated dashboard to manage slots, monitor bookings, and schedule maintenance.

This document also establishes a common communication medium between technical and non-technical stakeholders involved in the BookMyCourt project. By presenting requirements in a structured and standardized manner, it helps ensure that related to system behavior, performance, and usability are clearly understood by all parties

The goal of BookMyCourt is to simplify the process of sports venue booking for urban players while providing venue owners with a digital tool to enhance business operations. By bridging the gap between players and venue managers the platform promotes better accessibility, organization and engagement in local sports communities.

1.2 Intended Audience and Document Overview

The **BookMyCourt** project aims to streamline the process of discovering, booking, and managing sports facilities through a user-friendly web-based platform. This document outlines the system's requirements, scope, and core functionalities, serving as a reference for developers, testers, evaluators, and academic supervisors involved in the project.

The **BookMyCourt** platform offers tools for managing sports venue bookings, tracking slot availability, organizing facility schedules, and simplifying communication between players

and venue administrators. It ensures improved accessibility in day-to-day sports facility operations, making the entire booking process seamless and efficient for both users and venue partners. Venue administrators can manage court details, update schedules, approve bookings, and monitor daily bookings through the system

The **BookMyCourt** system facilitates effective communication between players and venue partners through notifications and booking confirmations, reducing manual coordination and scheduling conflicts. By automating booking workflows and maintaining accurate scheduling records, BookMyCourt enhances accessibility, transparency, and operational efficiency in day-to-day sports facility management.

1.3 Definitions and Abbreviation

Table 1.4.1 Abbreviation Table

Acronym	Full Form	Context/Usage
API	Application Programming Interface	Backend context
INR	Indian Rupee	Currency
JSON	JavaScript Object Notation	React/Node.js apps
QR	Quick Response	QR Check-ins
REST	Representational State Transfer	Web service architecture
UI	User Interface	App interface
UPI	Unified Payments Interface	Digital payment
URL	Uniform Resource Locator	Web context

1.4 Document Conventions

- **User Roles:** Terms like Players, Venue Admins, and Staff identify the different groups of users who interact with the system.
- **Technology & Payment Terms:** Names of technologies (React.js, Node.js, MongoDB) and payment services are written with capital letters and highlighted where needed.
- **User Actions:** Words such as register, book, reschedule, cancel, and review describe the activities users can perform on the platform.
- **Interface Elements:** Names like dashboard, profile, and booking history represent different sections of the user interface.
- **Formatting Style:** Consistent headings and subheadings are used throughout the document to maintain clarity and readability.

1.5 References and Acknowledgments

- **Frontend Development:** The project references modern web development frameworks and tools such as **React.js** for building the user interface.
- **Backend Technologies:** The server-side architecture utilizes **Node.js** and **Express.js**, with **MongoDB** serving as the database.
- **Payment Integration:** Secure payment methods
- **Academic Guidance:** The project benefited from mentorship and academic resources provided by the **Head of Department** and **Assistant Professors**.

2. Overall Description

2.1 Product Perspective

BookMyCourt is an independent web-based platform developed to simplify and modernize the process of sports facility booking. Unlike traditional approaches such as phone reservations, on-site registrations, or manual record-keeping in spreadsheets, the system delivers an efficient and intuitive digital **solution** with real-time availability. Designed as an independent system, it can be extended through modular features and API integrations, ensuring scalability and adaptability for future requirements.

The product leverages **modern web technologies** including React.js for the frontend and Node.js with Express.js for backend services, while MongoDB serves as the primary data store. It is designed for **multi-user access**, with distinct roles such as **players (users)**, **venue administrators**, and **support staff**.

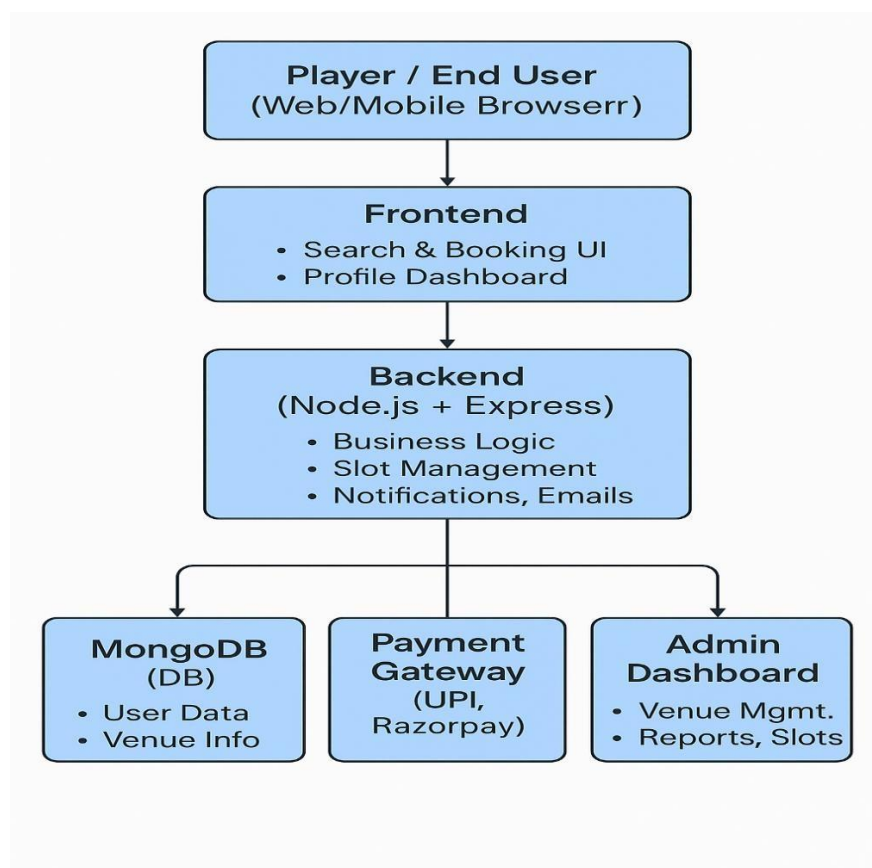


Figure 2.1.1 - System Architecture Diagram – BookMyCourt

2.2 Product Functionality

The **BookMyCourt** platform is designed to provide seamless interaction between users (players), venue administrators, and system components. Below is a high-level summary of the major functional capabilities of the system:

2.2.1 User Functions (Players)

- **User Registration & Login:** Allows players to create accounts and sign in.
- **Search Facilities:** Enables users to search for nearby sports courts or grounds by location, sport type, or facility rating.
- **View Availability:** Displays real-time slot availability for selected venues.
- **Book Slots:** Users can reserve time slots for their preferred sport and venue.
- **Payment Processing:** Integrates Payments gateways for secure online payments.
- **Booking Management:** Users can view, modify, or cancel their bookings.
- **Rate & Review Venues:** Users can leave reviews and rate their experience post-booking.
- **View Booking History:** Displays past and upcoming bookings in the user profile dashboard.

2.2.2 Venue Admin Functions

- **Admin Login & Dashboard Access:** Provides access to venue management tools.
- **Manage Listings:** Admins can add, update, or remove venue details and sport types.
- **Slot Scheduling:** Allows configuration of available time slots, holidays.
- **View & Approve Bookings:** Admins can monitor bookings and approve or manage requests.
- **Subscription Management:** Access and manage their service tier and benefits.

2.2.3 System Functions

- **Authentication & Authorization:** Ensures secure login for both players and venue admins.
- **Notifications & Alerts:** Sends confirmation emails, reminders, and cancellation alerts.

- **Waitlist Management:** Allows users to join a waitlist if slots are full.
- **Data Storage & Management:** Manages all user, venue, and booking information in MongoDB.
- **Real-Time Data Handling:** Updates availability and schedules dynamically across all users.

2.3 Users and Characteristics

2.3.1 Players / End Users

- **Description:** These are individuals who use the platform to search for, book, and manage sports facility reservations.
- **Characteristics:**
- **Frequency of Use:** Moderate to high, especially for regular players.
- **Privileges:** Can register, log in, view/search venues, book slots, make payments, and review past bookings.
- **Key Actions:** Booking, cancellation, rescheduling, providing reviews.

2.3.2 Venue Administrators

- **Description:** Venue owners responsible for managing the sports facility through the admin dashboard.
- **Characteristics:**
- **Frequency of Use:** High frequent logins to manage operations.
- **Technical Expertise:** Moderate must understand web dashboards and tools.
- **Privileges:** Full access to venue-related operations like managing bookings, adding time slots, pricing, reports, and customer feedback.

2.3.3 Platform Administrators (System Admins)

- **Description:** Internal users or developers who oversee system maintenance, user management, issue resolution, and platform updates.
- **Characteristics:**
- **Frequency of Use:** Occasional or as needed.

- **Privileges:** Full system access, including user records, payment logs, error logs, backend updates, and feature controls.
- **Key Actions:** Troubleshooting, database management, feature deployment.

2.4 Operating Environment

The **BookMyCourt** platform is a **web-based application** designed to run on modern browsers and devices, ensuring accessibility across desktops, laptops, tablets, and smartphones. The system follows a **client-server architecture**, where the frontend operates in the user's browser and communicates with the backend hosted on a cloud-based server.

2.4.1 Frontend (Client-side):

- **Supported Browsers:** Google Chrome, Microsoft Edge
- **Operating System:** Windows
- **Hardware Requirements:** Stable internet connection
- **Software Requirements:** Browser with JavaScript enabled and support for HTML5 and CSS3

2.4.2 Backend (Server-side):

- **Platform:** Node.js with Express.js
- **Database:** MongoDB
- **Authentication:** Secure login and session management
- **Operating System:** Windows Server

2.4.3 Third-Party Integrations:

- **Payment Gateways:** Secure Payments
- **Authentication Services:** JWT-based user auth with optional OAuth integration
- **Optional:** OTP notification services

2.5 Design and Implementation Constraints

2.5.1 Technology Stack Constraint

- The platform **must be developed using React.js for the frontend**, and **Node.js with Express.js for the backend**, as per initial planning and team expertise.

- No alternative frontend frameworks (e.g., Angular, Vue.js) or backend languages (e.g., Python/Django, PHP) will be considered.

2.5.2 Database Constraint

- **MongoDB** is the required database system due to its flexible schema and integration with Node.js.
- Migration to other database types (like SQL-based systems) is not allowed during initial development due to time and skill constraints.

2.5.3 Hosting and Platform Limitations

- The application will only work on supported hosting platforms that provide Windows Server environments.
- It cannot be installed or run on personal or office servers.

2.5.4 Third-Party Integration Dependency

- Payment gateways for secure transactions.
- System must comply with Payments which may impose limitations on transaction workflows and error handling.

2.5.5 Security and Compliance Requirements

- All communications must use **HTTPS protocols** for data protection.
- **JWT (JSON Web Tokens)** will be used for user authentication, and no alternative authentication methods are supported in the current version.

2.5.6 Hardware and Performance Constraints

- The system should run smoothly on standard devices without requiring high-end hardware.
- The user interface must load quickly on a stable internet connection.

2.5.7 Maintenance and Codebase Conventions

- The code must follow **JavaScript ES6+ standards** and **RESTful API conventions**.
- Proper code commenting, modularization, and use of version control (Git/GitHub) are required for team collaboration and post-deployment maintenance.

2.6 User Documentation

To help users understand and use the BookMyCourt platform easily, several types of support materials will be provided. These include a **simple user guide** for players that explains how to sign up, search for courts, book slots, make payments, and view bookings. Venue owners will get a **separate admin guide** that shows how to manage their venue, update available slots, and track bookings. The platform will also include helpful tips inside the website and a list of frequently asked questions (FAQs) to guide users step by step. All help materials will be available directly on the platform for easy access whenever needed.

2.7 Assumptions and Dependencies

The design and functionality of the BookMyCourt platform on several critical assumptions and external dependencies. While these factors are expected to remain stable, any deviation may affect the successful deployment and operation of the system. The key assumptions and dependencies are as follows:

- **Urban Sports Culture Adoption:** Urban users prefer digital methods for booking sports facilities, supporting the platform's growing relevance.
- **Device and Browser Standards Compliance:** Users are assumed to access the platform via modern browsers and devices compatible with JavaScript and React.js.
- **Static Rules for Cancellation and Refunds:** Venue owners are expected to follow simple, static cancellation and refund policies.

3. Specific Requirements

3.1 External Interface Requirements

3.1.1 User Interfaces

The system will feature a responsive, user-friendly web interface developed using React.js, ensuring seamless operation across modern web browsers and devices. The user interface will be consistent with modern design standards, focusing on usability, accessibility, and clarity.

General UI Characteristics

- A consistent header and footer will appear across all pages for easy navigation.
- Standard buttons like **Login**, **Register**, **Book Now**, **Cancel**, and **Submit** will be present with recognizable icons where appropriate.
- Error and confirmation messages will be displayed using modal or toast notifications, following a consistent color and style pattern (e.g., red for errors, green for success).
- All screens will be responsive and follow mobile-first design principles to ensure compatibility with smartphones and tablets.
- Fonts, color themes, and layout will follow a clean and minimal design, in line with modern web design practices.

User Interface Screens

1. Home Page

- Displays a **welcome message** along with a brief **overview of the platform** and its features.
- Includes a allowing users to find sports facilities based on **sport type** (e.g., Football, Badminton) or **location** (city, area).
- Provides **quick access links** to essential actions such as **Login**, **Register**, and **View Bookings** for easy navigation.

2. User Registration and Login

- Registration form with fields for name, email, mobile number, and password.
- Login form for registered users.
- Password reset and OTP verification screens.

3. Dashboard (Player)

- Displays user profile details and past bookings.
- "Upcoming Bookings" section with the option to cancel or reschedule.
- Notifications for booking confirmations, refunds, and platform updates.

4. Search & Facility Listing

- List of available venues filtered by sport type, date, time, and location.
- Facility cards with photos, ratings, amenities, and pricing.

5. Facility Detail Page

- Detailed view with facility description, photos, availability calendar, and Google Maps integration.
- "Book Slot" button to initiate booking.

6. Booking Interface

- Slot selection screen showing time and date availability.
- Payment summary with integrated Razorpay gateway.
- Booking confirmation screen after successful payment.

7. Admin Panel (Venue Owner)

- Dashboard showing bookings, earnings, and slot management.
- Ability to add/edit/delete time slots and update facility details.

8. Cancellation & Refund

- Interface to cancel a booking based on the facility's cancellation policy.
- Display of refund eligibility and processing status.

9. Support & Feedback

- Contact form for help or issues.
- Option to submit feedback or rate the venue.

3.1.2 Hardware Interfaces

The BookMyCourt platform is web-based and supports interaction through standard hardware interfaces:

1. Client-Side Devices

Supported: Desktops, laptops, tablets, and smartphones.

Requirements: Devices must support modern browsers with JavaScript and React.js.

Interaction: Users interact via standard input/output (keyboard, mouse, touchscreen).

2. Server-Side Infrastructure

Hosting: Deployed on cloud platforms like AWS or Heroku.

Database: Uses MongoDB Atlas with secure server communication.

Interaction: Backend (Node.js/Express.js) communicates with the database and APIs.

3. Third-Party Device Access (Future Scope)

Future integration may include IoT devices such as smart gates or lighting via APIs or SDKs.

3.1.3 Software Interfaces

The BookMyCourt platform connects with several software components, including the operating system, database, and third-party services, to deliver its full functionality.

1. Operating System Interface

- **Server-Side:** The backend application runs on a **server environment** using **Node.js** and **Express.js**. It is responsible for handling application logic, managing API routing, and providing backend services.
- **Client-Side:** The frontend is accessed through modern web browsers such as **Google Chrome** and **Microsoft Edge**. It is compatible with major operating systems including **Windows, macOS, Android, and iOS**. Since the platform is **browser-based**, no additional software installation is required.

2. Database Interface

- The system uses MongoDB Atlas, a cloud-hosted NoSQL database, for persistent data storage.

- The backend communicates with the database through Mongoose, an Object Data Modeling (ODM) library for Node.js, which manages schemas and performs database operations.
- Data shared between the application and the database includes user profiles, facility listings, bookings, reviews, and payment records.
- All data exchanges occur over secure HTTPS connections in JSON format.

3. Third-Party Software and APIs

- Payments: Integrated for secure online payments, using its REST API
- Authentication Libraries:
 - bcrypt is used for securely hashing user passwords.
 - JWT (JSON Web Tokens) is used for managing user sessions and authentication tokens.

4. Data Communication

- Communication between the frontend and backend occurs via HTTPS to ensure security.
- Data is exchanged in JSON format, which allows for structured and lightweight communication.
- Typical data items exchanged include:
 - User login and registration details
 - Facility information and availability
 - Booking and cancellation requests
 - Payment confirmation and status updates

3.1.4 Communications Interfaces

The BookMyCourt platform is a web-based application and relies on standard internet communication protocols for interaction between client devices and the server. All communication takes place over secure channels using the **HTTPS (HTTP Secure)** protocol, ensuring encrypted data transmission between users and the platform.

The frontend (React.js) communicates with the backend (Node.js/Express.js) through RESTful API endpoints. Data exchanged between the client and server is structured using the **JSON** (JavaScript Object Notation) format. The system may also use **WebSockets** or similar technologies in the future for real-time updates such as live booking status or notifications.

User authentication and sensitive data transfers (such as payments) are protected using standard encryption practices., which also communicate securely over HTTPS. No FTP, email protocols, or local network-based communication is currently used.

3.2 Functional Requirements

The functional requirements of the BookMyCourt platform are grouped into several key functional areas. Each area defines the core system operations that must be supported to fulfill user and administrative needs.

3.2.1 User Account Management

- Users shall be able to **register** with the platform by providing their name, email, mobile number, and password.
- Users shall be able to **log in** using their registered email/mobile and password.
- The system shall allow users to **reset their password** using OTP-based verification.
- Users shall be able to **edit their profile** information such as name and contact details.

3.2.2 Facility Discovery and Search

- Users shall be able to **search for sports facilities** by location, sport type, date, and time.
- The system shall display a **list of matching venues**, including their ratings, availability, pricing, and photos.

3.2.3 Booking and Slot Management

- Users shall be able to **select a facility** and **book an available time slot**.
- The system shall display **real-time slot availability** for each facility.
- Upon selecting a slot, users shall be able to **confirm and proceed to payment**.
- After successful payment, the system shall generate a **booking confirmation** with transaction details.

3.2.4 Payment and Refund Processing

- The system shall support **online payments** via including UPI, debit/credit cards, and net banking.
- Upon payment completion, the system shall mark the booking as **confirmed**.
- The system shall trigger **refunds automatically** in case of eligible cancellations, as per the defined cancellation policy.
- Payment failures shall display appropriate **error messages** and allow retry.

3.2.5 Venue Management (Admin)

- Venue administrators shall be able to **log in** to a dedicated admin panel.
- Admins shall be able to **add and edit facility information**, including pricing, location, sport types, and images.
- Admins shall be able to **add, update, or delete time slots** for booking availability.
- Admins shall be able to **view bookings**, check availability, and manage user feedback.
- Admins shall receive **notifications** for new bookings or cancellations.

3.2.6 Notifications and Communication

- Users shall receive **email or in-app notifications** for booking confirmations, reminders, cancellations, and refunds.
- The system shall support **feedback and rating submission** for booked venues.

3.3 Behaviour Requirements

3.3.1 Use Case View

The use case view provides a high-level representation of all the major interactions between the users (actors) and the system. Each use case describes a goal-oriented interaction that leads to an observable outcome for the actor. The diagram captures the complete scope of user-system interactions for the BookMyCourt platform.

Actors:

Player/User – A registered or guest user who searches for facilities, makes bookings, and manages their profile and bookings.

Admin (Venue Owner) – Manages sports facilities, updates slot availability, and monitors bookings and reviews.

3.3.2 Primary Use Cases

Table 3.3.2 Use Case Description Table

Actor	Use Case	Description
Player	Register	Allows a user to create a new account on the platform.
Player	Login	Authenticates the user and provides access to features.
Player	Create Profile	Enables players to set up their profile with personal details.
Player	Browse and Search	Lets users find available venues or courts based on filters.
Player	Check Real-Time Availability	Displays current availability of slots at selected venues.
Player	Book a Slot	Facilitates booking of an available time slot at a venue.
Player	Manage Booking & History	View and manage current, upcoming, and past bookings.
Player	Share Booking With Friend	Allows users to share booking details with friends via a link or app.
Player	Give Review	Users can rate venues and provide written feedback.
Player	Manage Profile	Modify profile information and preferences.
Player	Logout	Logs the user out and ends the session securely.
Admin	Login	Grants admin access to the management panel.
Admin	Manage Venue Availability	Add, edit, or remove venue information listed on the platform.
Admin	Manage Booking	Oversee and edit user bookings for any venue.
Admin	Adjust Prices & Schedule	Set or update pricing and schedule for courts or grounds.
Admin	View Record	Access logs and historical data related to bookings and user actions.
Admin	Logout	Securely exit the admin session.

4. Other Non-functional Requirements

This section explains the background qualities that make the BookMyCourt system work well. These are not direct features like booking or payment, but they define how fast, safe, and reliable the platform should be.

4.1 Performance Requirements

4.1.1 Booking Transaction Speed:

The system must complete a booking process, including slot selection, payment, and confirmation, within a few seconds. A fast response prevents users from getting frustrated or leaving the website before completing payment.

4.1.2 Page Load Time:

Important pages such as the home page, search page, and booking dashboard should open quickly. Ideally, each page should load within 2–3 seconds on normal internet. This ensures a smooth experience on both mobile and desktop.

4.1.3 Concurrent User Handling:

The platform should support many users at the same time. Even if hundreds of players are searching or booking together, the system should still run smoothly without slowing down.

4.1.4 Slot Availability Synchronization:

When a booking or cancellation happens, the slot status should update immediately for all users. This avoids confusion and ensures no two users try to book the same slot at once.

4.2 Safety and Security Requirements

The **BookMyCourt** platform handles sensitive user data such as personal information, payment details, and booking history. Therefore, the system must include robust safety and security measures to protect against misuse, data loss, and unauthorized access.

4.2.1 Safety Requirements

- **Real-Time Booking Logout for Overlapping Slots:**

When a user starts booking, the selected slot should be locked for a short time so no one else can book it at the same moment.

- **Auto-Logout for Inactive Sessions:**

If a user stays inactive for a long time, the system should log them out automatically. This prevents misuse on shared devices.

- **Emergency Cancellation Control:**

In case of safety hazards like natural disasters, heavy rain, or facility damage, venue admins must be able to **cancel all bookings for a particular day** with a single command. Users shall be notified instantly, and refunds will be automatically triggered as per the policy.

4.2.2 Security Expectations

- All data should be transferred using **HTTPS**, so it cannot be read by attackers.
- Passwords must be stored in encrypted form and never in plain text.
- Login sessions should use **JWT (JSON Web Tokens)** for secure access control.
- Different users (players, admins) should have different permissions, so no one can misuse the system.
- User privacy must follow Indian data protection rules, and no data should be shared without permission.

4.3 Software Quality Attributes

This section outlines key software quality attributes that define how the **BookMyCourt** platform will perform beyond its functional requirements. These attributes contribute to the product's long-term usability, maintainability, scalability, and overall success

4.3.1 Reliability

- If a booking fails due to network issues, the system should try again automatically.
- The system will have regular checks to make sure everything is running smoothly, and problems will be fixed quickly.

4.3.2 Maintainability

- The code will be well-organized and clean, so it's easier for developers to update.
- We will use standard coding rules and keep all settings in a simple config file.

4.3.3 Usability

- The platform will be easy to use, even for people using it for the first time.
- Users should be able to find and book a court.
- The design will work well on both mobile phones and desktops.
- Buttons, messages, and tooltips will help guide the user at each step.

4.3.4 Portability

- The system will run on operating system, like Windows.
- All settings will be stored in files so nothing needs to be changed in the code.

4.3.5 Scalability

- The system will be able to handle more users during busy times without slowing down.
- We will build it in a way that new features or sports can be added easily in the future.
- The database will be flexible enough to grow without major changes.

4.3.6 Testability

- The system should support **automated testing** for frequently used features such as user registration, login, slot booking, payment processing, and booking cancellation.
- Each module (authentication, booking, payment, admin dashboard) should be **independently testable** without affecting other parts of the system.
- Clear and meaningful **error messages** should be generated to help testers quickly identify the cause of failures.
- The system should maintain **test logs and reports** that record test results, failures, and system behavior during testing.
- A **separate testing environment** should be available so that test data does not affect real user bookings or payments.
- Mock or dummy payment gateways should be used during testing to safely verify payment-related functionality.

Appendix A – Data Dictionary

Table 1.1 Admin Table

Sr.No.	Field	Size	Datatype	Description	Keys
1	adminID	24	VARCHAR	store adminID	Primary Key
2	Name	100	VARCHAR	store admin name	—
3	Email	100	VARCHAR	Store admin email	—
4	Password	255	VARCHAR	Store admin password	—
5	PhoneNumber	15	VARCHAR	Store user phone number	—

Table 1.2 Users Table

Sr.No.	Field	Size	Datatype	Description	Keys
1	userID	24	VARCHAR	store user ID	Primary Key
2	name	100	VARCHAR	store username	—
3	email	100	VARCHAR	store user email	—
4	PhoneNumber	15	VARCHAR	store user phone number	—
5	Password	255	VARCHAR	store user password	—
6	role	20	VARCHAR	store user role	—
7	createdAt	—	TIMESTAMP	store account creation time	—

Table 1.3 Venues Table

Sr.No.	Field	Size	Datatype	Description	Keys
1	venueID	24	VARCHAR	store venue ID	Primary Key
2	adminID	24	VARCHAR	store admin user ID	Foreign Key (users)
3	Name	100	VARCHAR	store venue name	—
4	Address	—	CLOB	store venue address	—
5	Description	—	CLOB	store venue description	—
6	amenities	—	CLOB	store venue amenities	—

Table 1.4 Sports Table

Sr.No.	Field	Size	Datatype	Description	Keys
1	sportID	24	VARCHAR	store sport ID	Primary Key
2	sportName	50	VARCHAR	store sport name	—

Table 1.5 VenueSports Table

Sr.No.	Field	Size	Datatype	Description	Keys
1	venueID	24	VARCHAR	store venue ID	Composite PK, FK (venues)
2	sportID	24	VARCHAR	store sport ID	Composite PK, FK (sports)

Table 1.6 TimeSlots Table

Sr.No.	Field	Size	Datatype	Description	Keys
1	slotID	24	VARCHAR	store slot ID	Primary Key
2	venueID	24	VARCHAR	store venue ID	Foreign Key (venues)
3	startTime	—	TIMESTAMP	store slot start time	—
4	endTime	—	TIMESTAMP	store slot end time	—
5	price	10,2	NUMBER	store slot price	—
6	status	20	VARCHAR	store slot status	—
7	sportID	24	VARCHAR	store sport ID	Foreign Key (sports)

Table 1.7 Bookings Table

Sr.No.	Field	Size	Datatype	Description	Keys
1	bookingID	24	VARCHAR	store booking ID	Primary Key
2	userID	24	VARCHAR	store user ID	Foreign Key (users)
3	TimeslotID	24	VARCHAR	store slot ID	Foreign Key (timeSlots)
4	status	20	VARCHAR	store booking status	—
5	bookedAt	—	TIMESTAMP	store booking time	—
6	sportID	24	VARCHAR	store sport ID	Foreign Key (sports)

Table 1.8 Payments Table

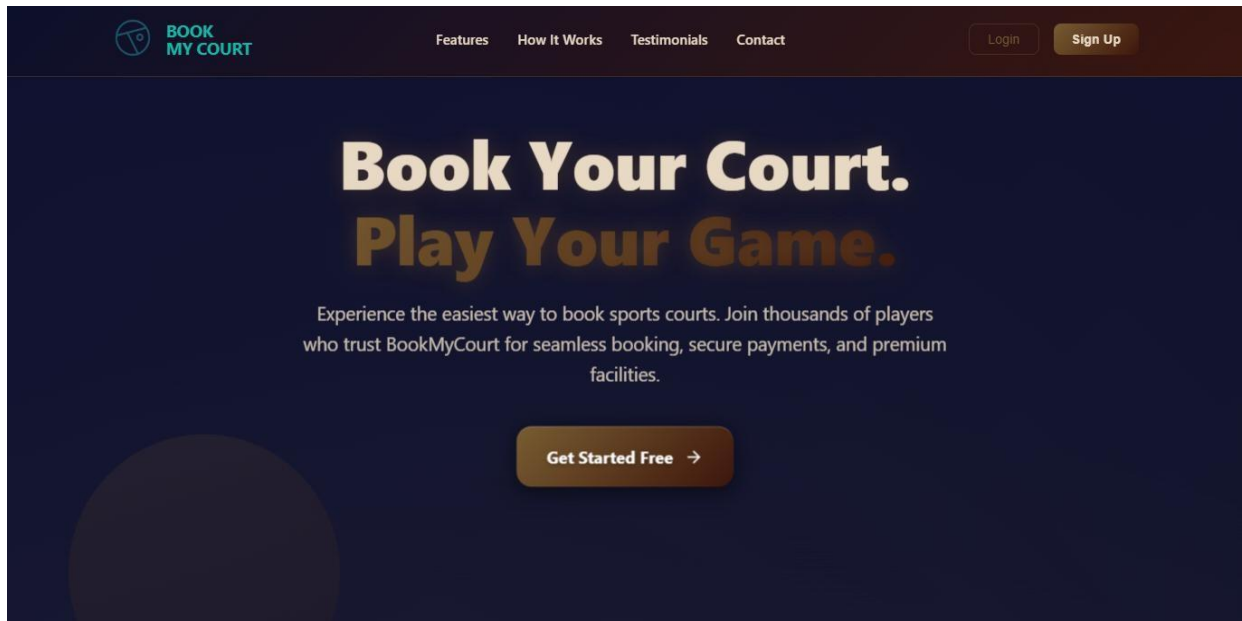
Sr.No.	Field	Size	Datatype	Description	Keys
1	paymentID	24	VARCHAR	store payment ID	Primary Key
2	bookingID	24	VARCHAR	store booking ID	Foreign Key (booking)
3	amount	10,2	NUMBER	store payment amount	—
4	method	30	VARCHAR	store payment method	—
5	transactionID	100	VARCHAR	store transaction ID	—
6	status	20	VARCHAR	store payment status	—
7	paidAt	—	TIMESTAMP	store payment time	—

Table 1.9 Reviews Table

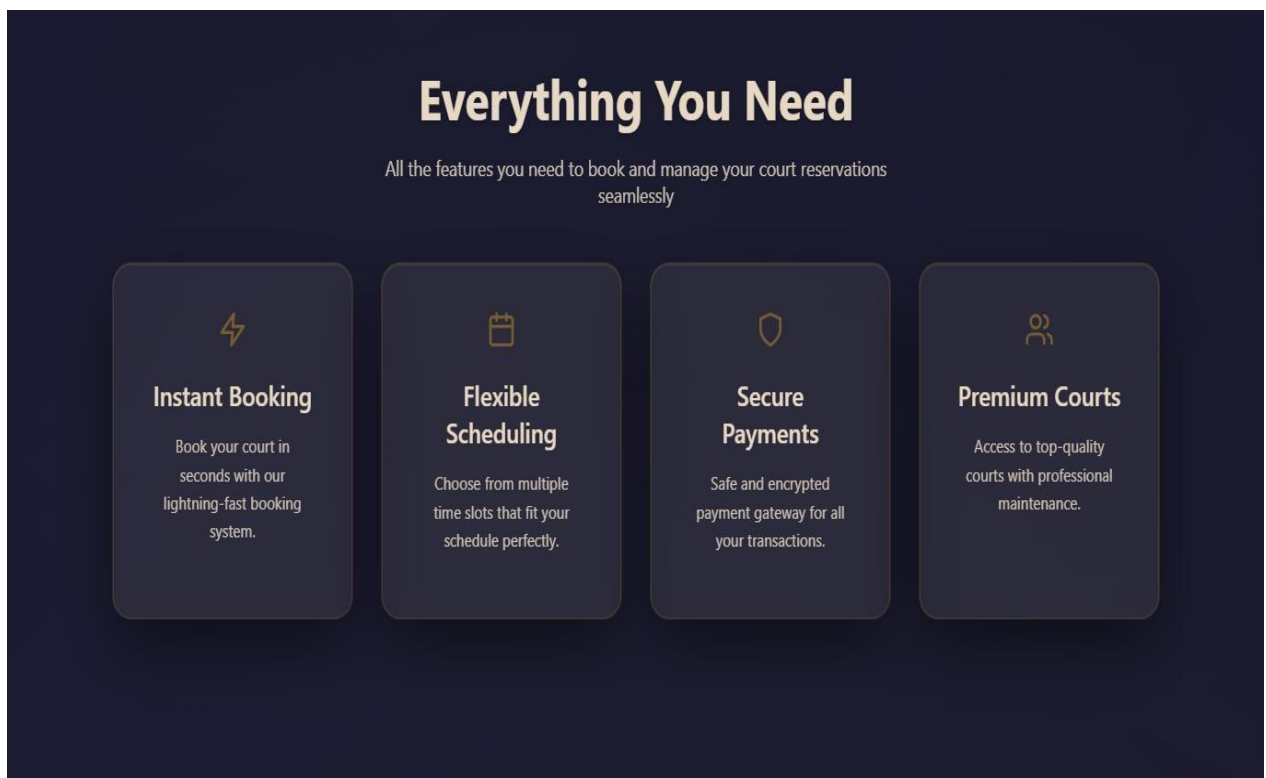
Sr.No.	Field	Size	Datatype	Description	Keys
1	reviewID	24	VARCHAR(24)	store review ID	Primary Key
2	userID	24	VARCHAR(24)	store user ID	Foreign Key (users)
3	venueID	24	VARCHAR(24)	store venue ID	Foreign Key (venue)
4	rating	—	NUMBER(2,1)	store rating	—
5	comment	—	CLOB	store review comment	—
6	reviewedAt	—	TIMESTAMP	store review time	—
7	sportID	24	VARCHAR	store sport ID	Foreign Key (sports)

Appendix B – User Manual

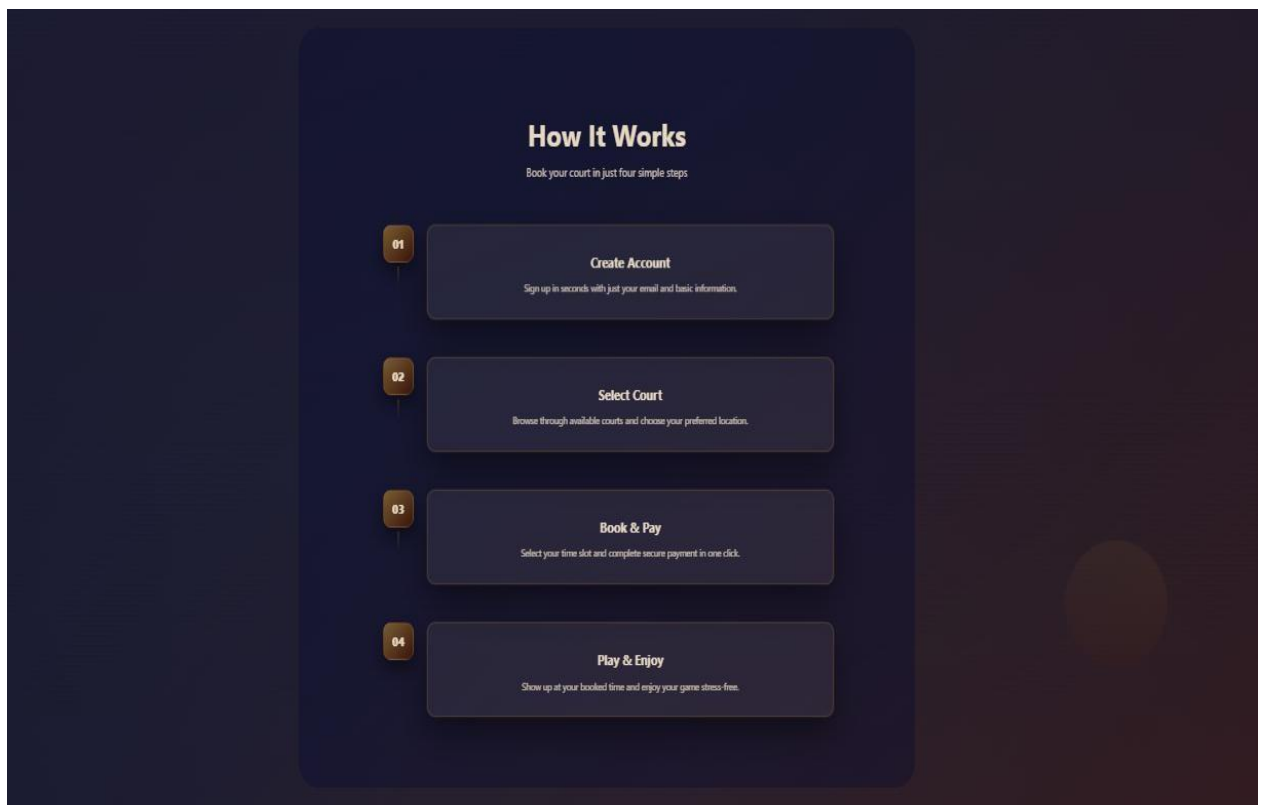
User Panel



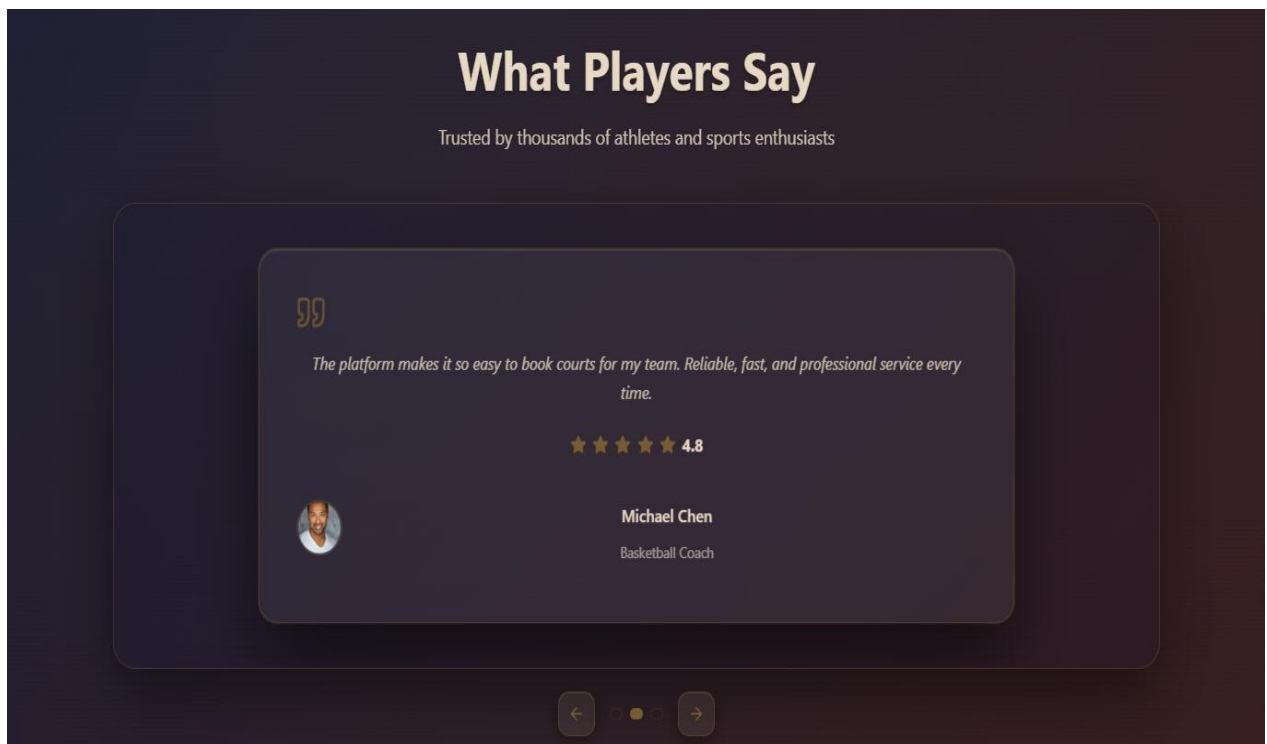
Step 1: The user lands on the Home Page



Step 2: The user scrolls down to see the Features Section



Step 3: The initial step where new users register and join the platform.



Step 4: The user continues scrolling to read the Testimonials Section

WELCOME TO THE FUTURE OF COURT BOOKING

Book My Court

Book courts instantly. Play more. Win together.

50+ Courts

Instant Book

Easy Pay

Top Rated

✓ Trusted by 10,000+ players • ★ 4.9/5 Rating

Sign In

Create Account

Create Your Account

Join BookMyCourt

1


2

3

DETAILSVERIFYBOOKING


First Name

Last Name


 First name

Last name


Username

 Choose a unique username

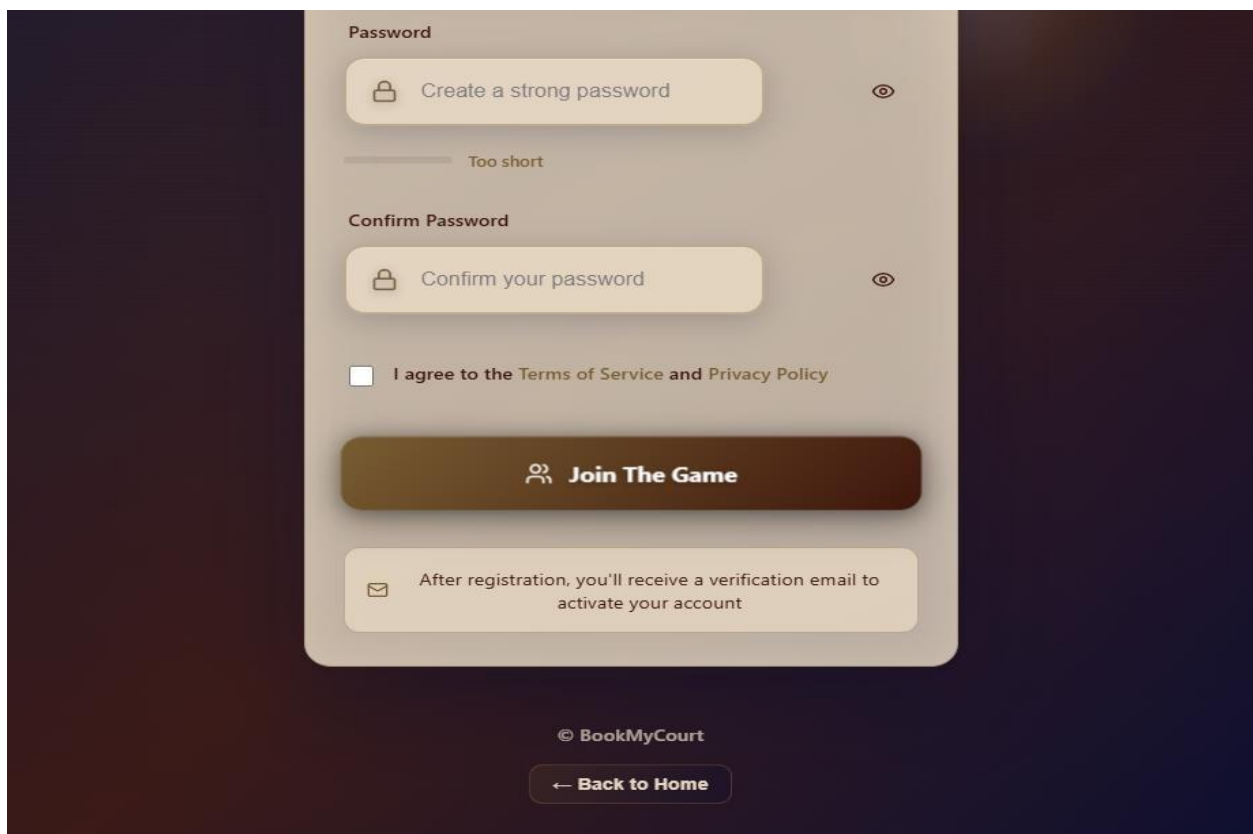
Email Address

 Enter your email

Phone Number

 Enter your phone number

Step 5: The user begins the Create Account process



This screenshot shows a registration form for 'BookMyCourt'. It features two password input fields with a strength indicator for the first. Below these is a checkbox for terms and privacy policy, a 'Join The Game' button, and a note about a verification email. At the bottom, there is a copyright notice and a 'Back to Home' button.

Password


Create a strong password


Too short

Confirm Password

Confirm your password

☐ I agree to the Terms of Service and Privacy Policy

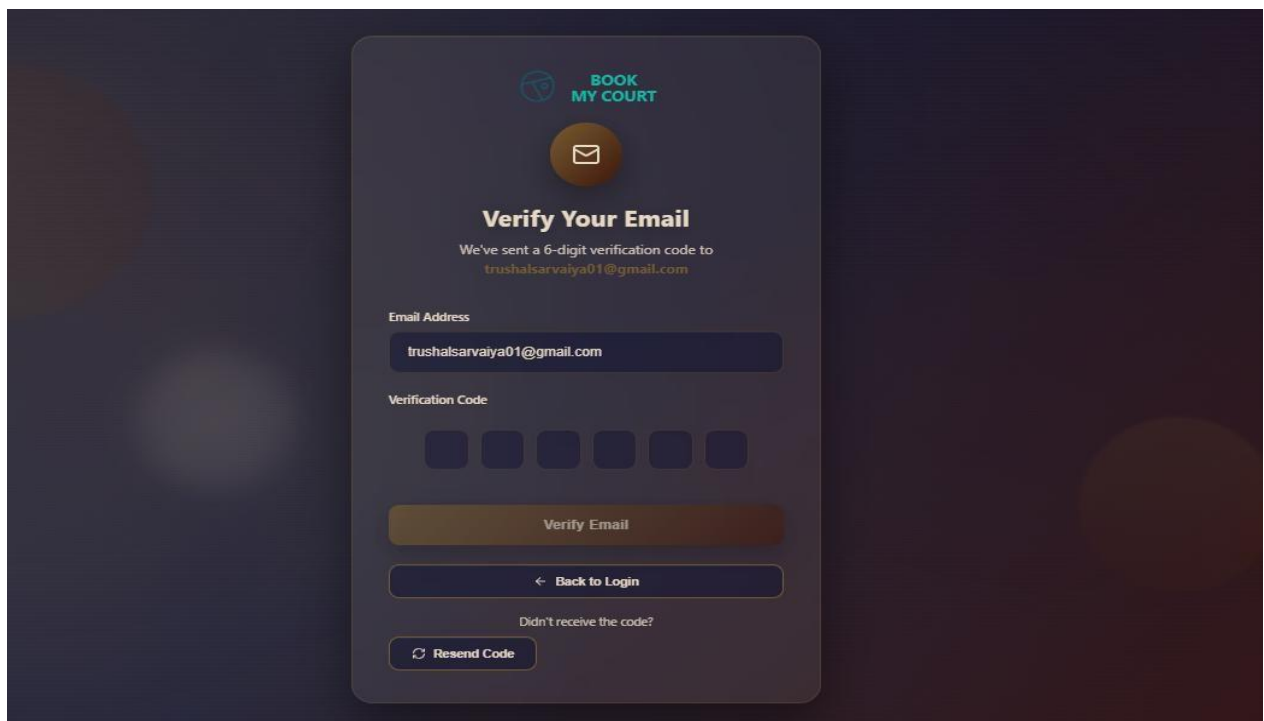
 **Join The Game**

 After registration, you'll receive a verification email to activate your account


© BookMyCourt


[← Back to Home](#)

Step 6: The user continues filling out the Registration Form (Part 2)



This screenshot shows an email verification screen for 'BookMyCourt'. It displays the user's email address and a 6-digit verification code input field. The screen includes a 'Verify Email' button, a 'Back to Login' button, and a 'Resend Code' button for users who haven't received the code.





Verify Your Email

We've sent a 6-digit verification code to
trushalsarvaiya01@gmail.com

Email Address


trushalsarvaiya01@gmail.com

Verification Code

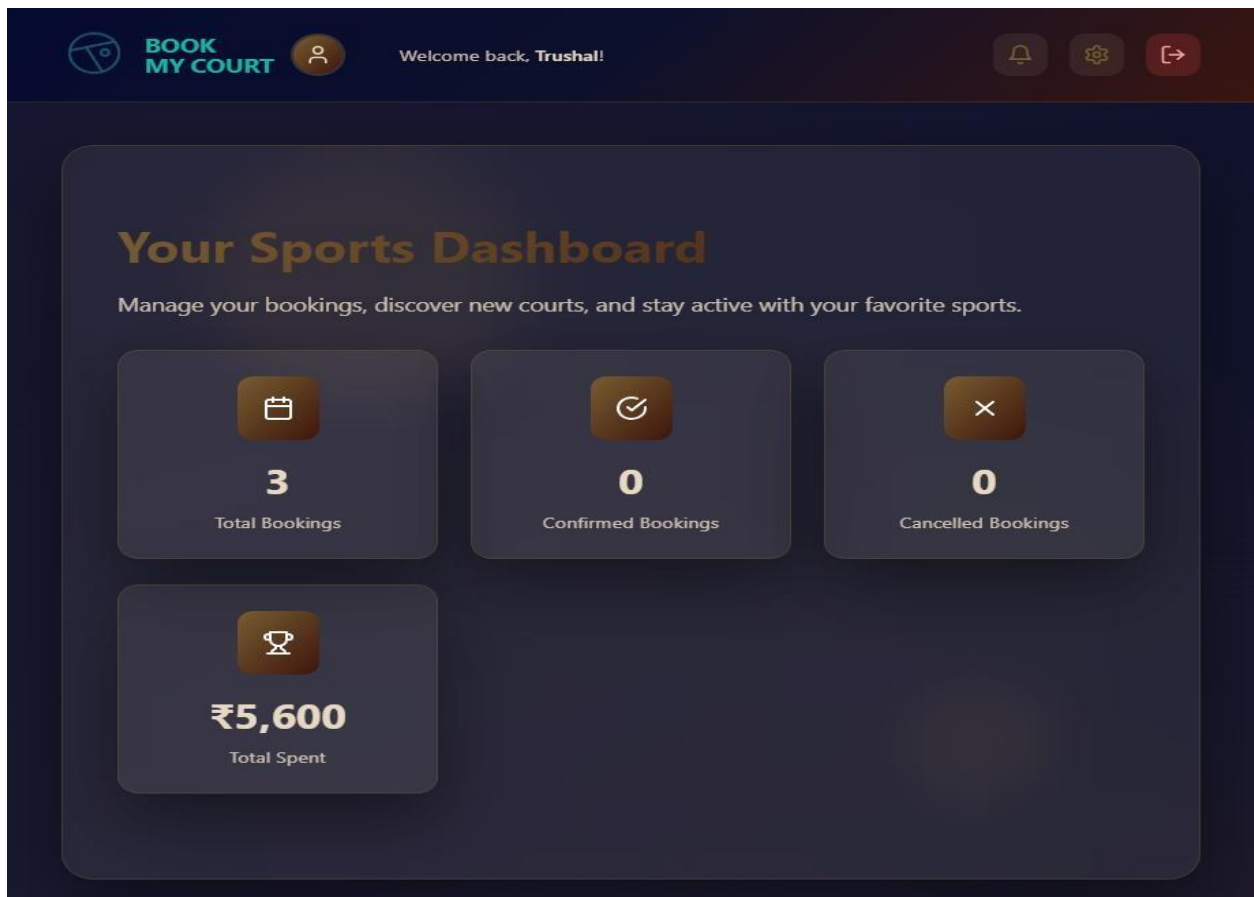
Verify Email

[← Back to Login](#)

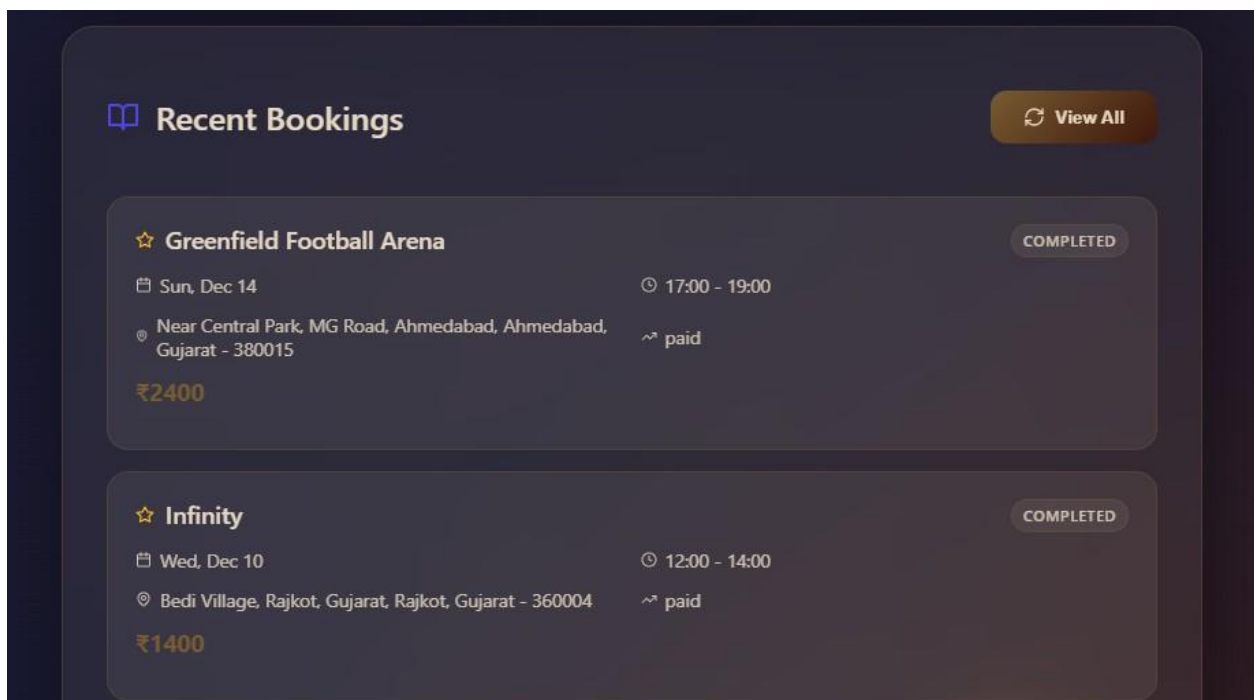
Didn't receive the code?

 **Resend Code**

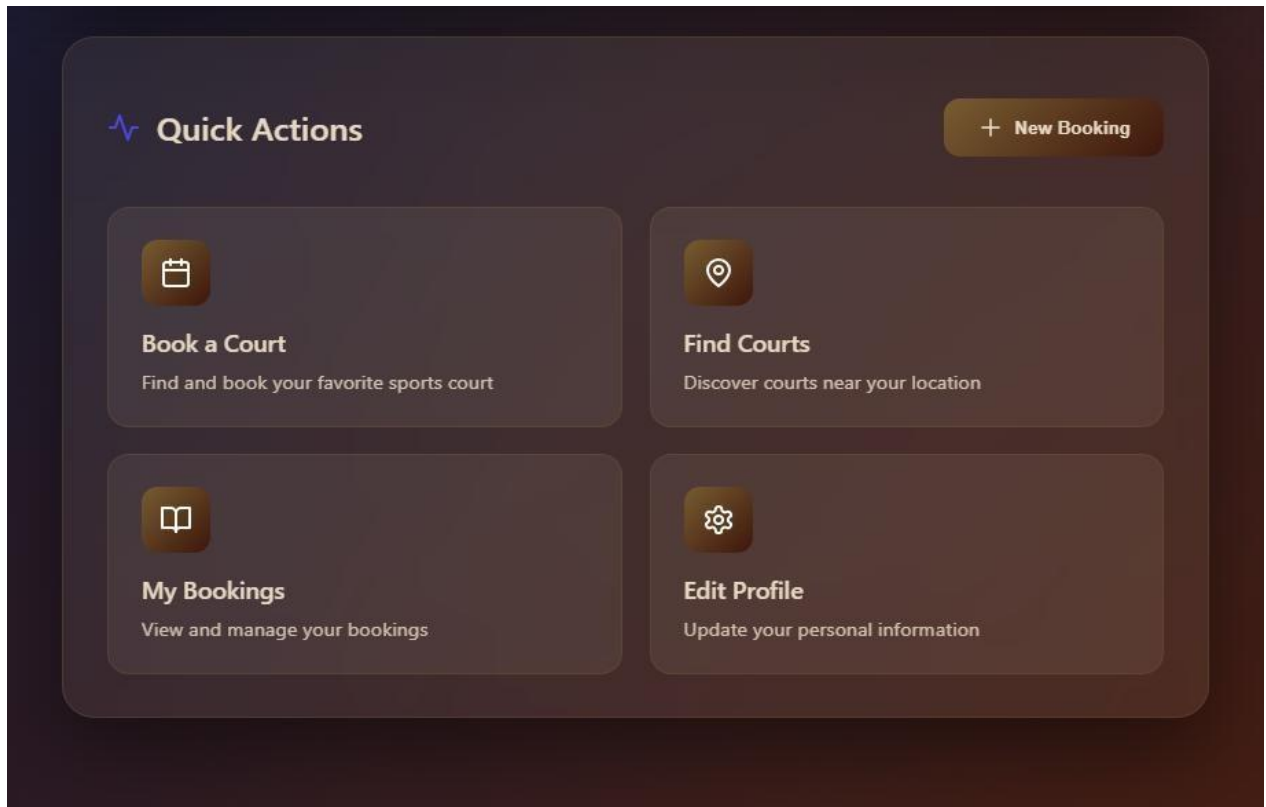
Step 7: The user is prompted to complete Email Verification



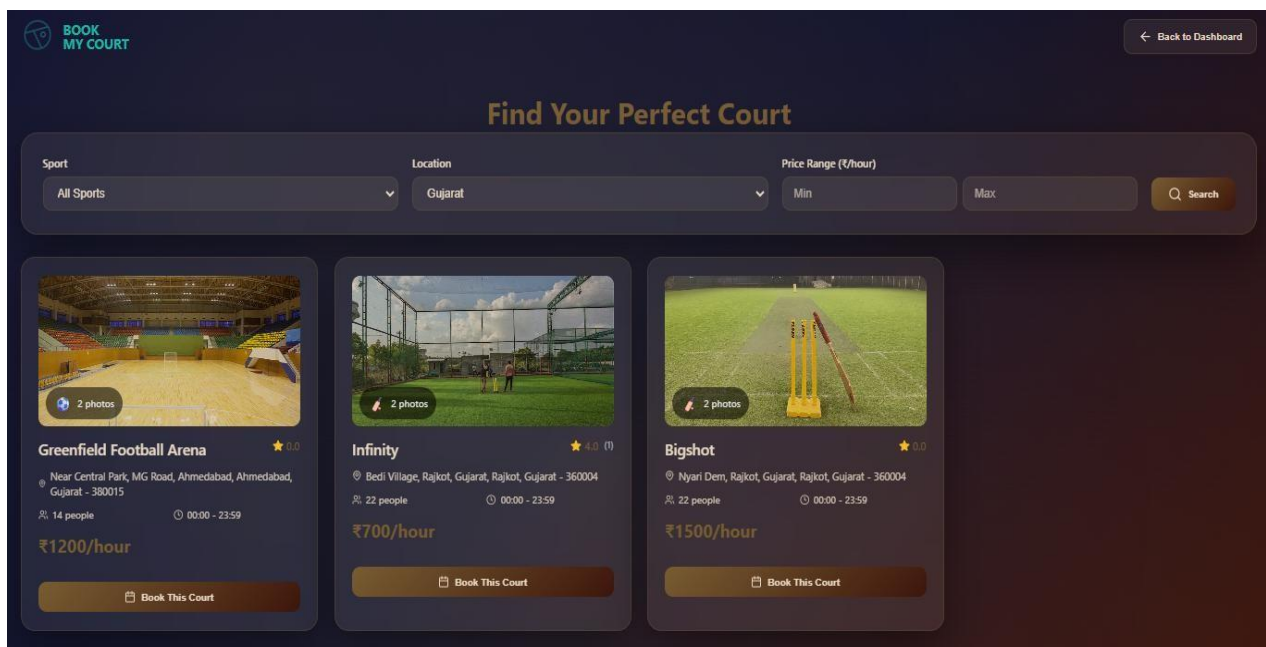
Step 8: The user is taken to their main User Dashboard



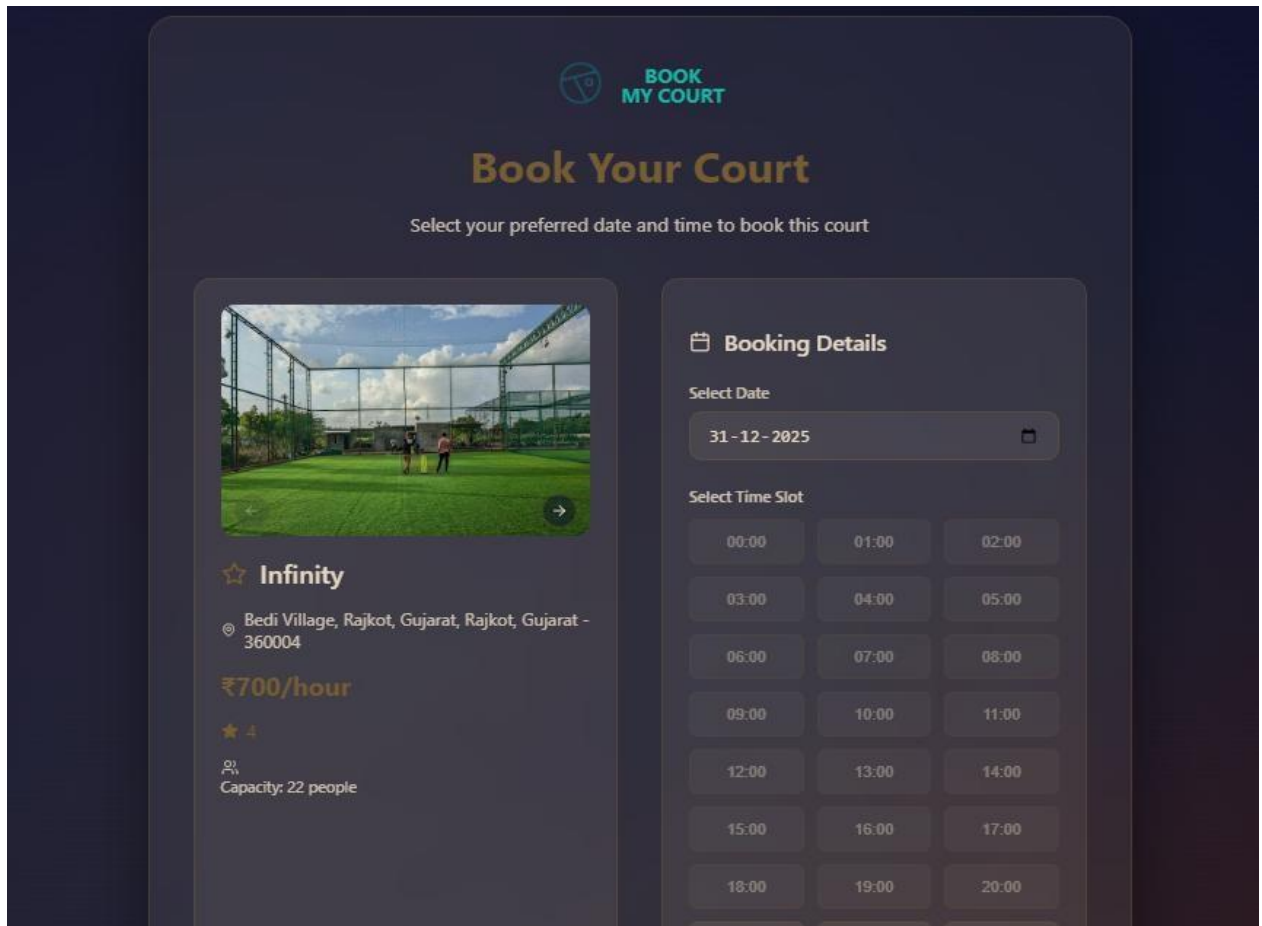
Step 9: Recent court bookings with date, time, location, and payment info.



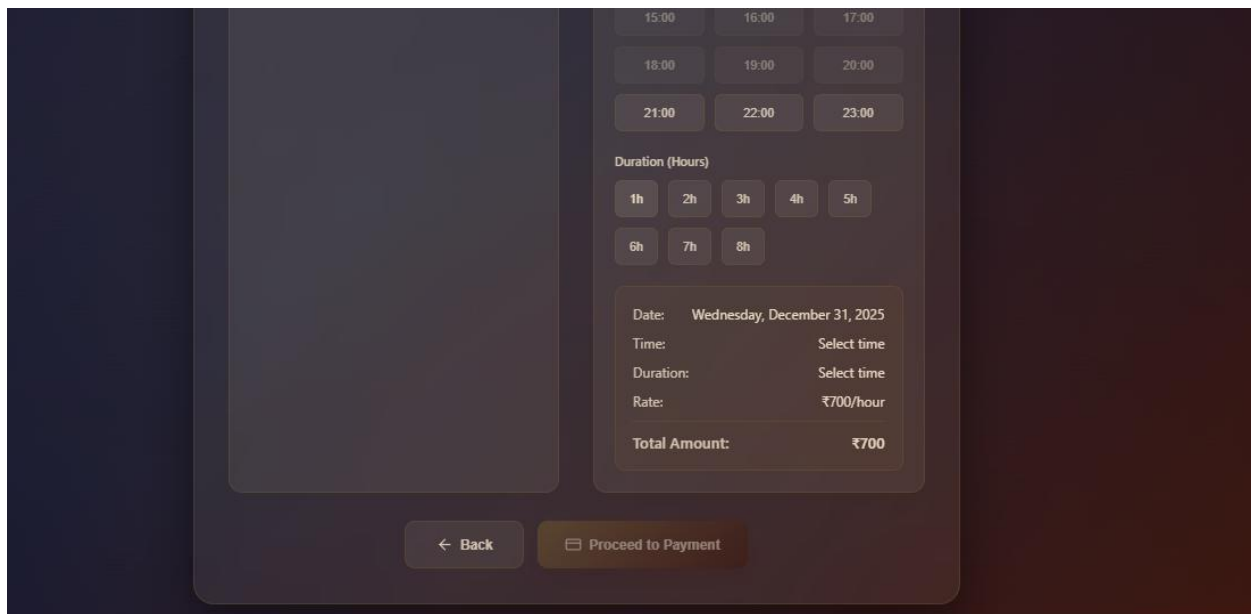
Step 10: The system shall allow users to quickly book courts, find facilities, manage bookings, and edit profiles.



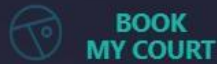
Step 11: Court list showing available courts with prices and ratings.



Step 12: The user views the detailed page of the selected court.



Step 13: The user selects an available time slot for the chosen court.



Complete Your Payment

Secure payment processing for your court booking

Booking Summary

User	Trushal Sarvaiya
Court	Greenfield Football Arena
Date	12/30/2025
Time	23:00 - 23:59
Duration	1 hour
Total Amount	₹1200

Payment Details

Payment Method

<input type="radio"/> Credit/Debit Card	<input type="radio"/> UPI
<input type="radio"/> Net Banking	<input type="radio"/> Digital Wallet

Card Number

1234 5678 9012 3456

Expiry Date

MM/YY

CVV

123

Cardholder Name

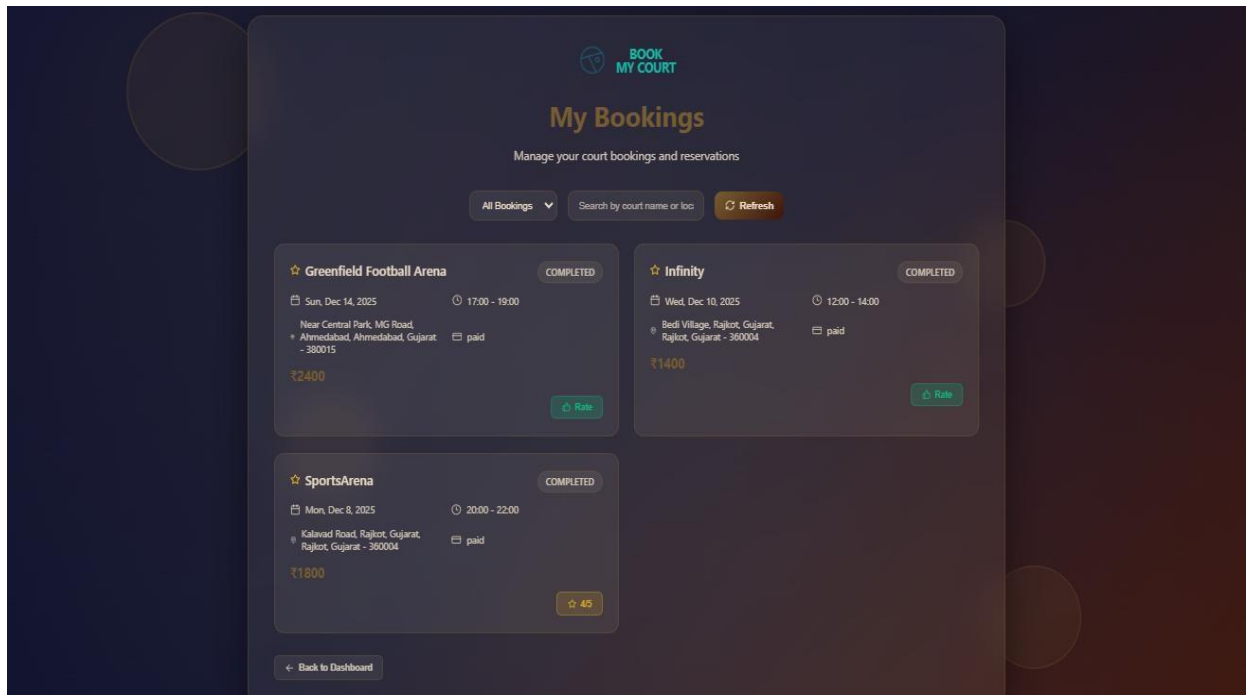
John Doe

Your payment is secured with 256-bit SSL encryption. We do not store your payment details.

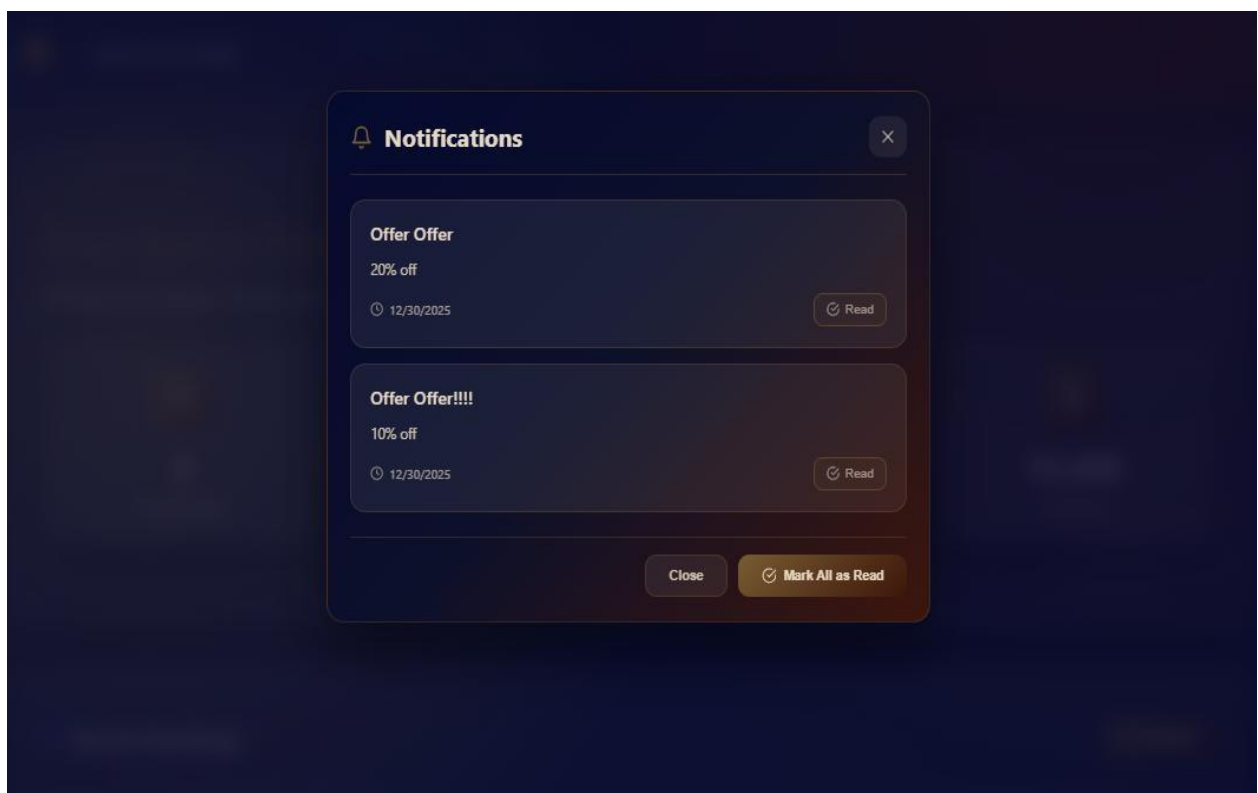
← Back

Pay ₹1200


Step 14: The user reviews the booking summary before proceeding to payment.




Step 15: The user can view list of bookings.




Step 17: The user receives a notification.

BOOK
MY COURT





Edit Profile

Update your personal information and security settings




Click on the photo to upload a new one
Supported formats: JPEG, PNG, GIF, WebP (max 5MB)


 Upload Photo

 First Name


Trushal

 Last Name


Sarvaiya


 Email Address

trushalsarvaiya01@gmail.com


 Current Password (required to change password)


Enter your current password




 New Password


Enter your new password




 Confirm New Password

Confirm your new password

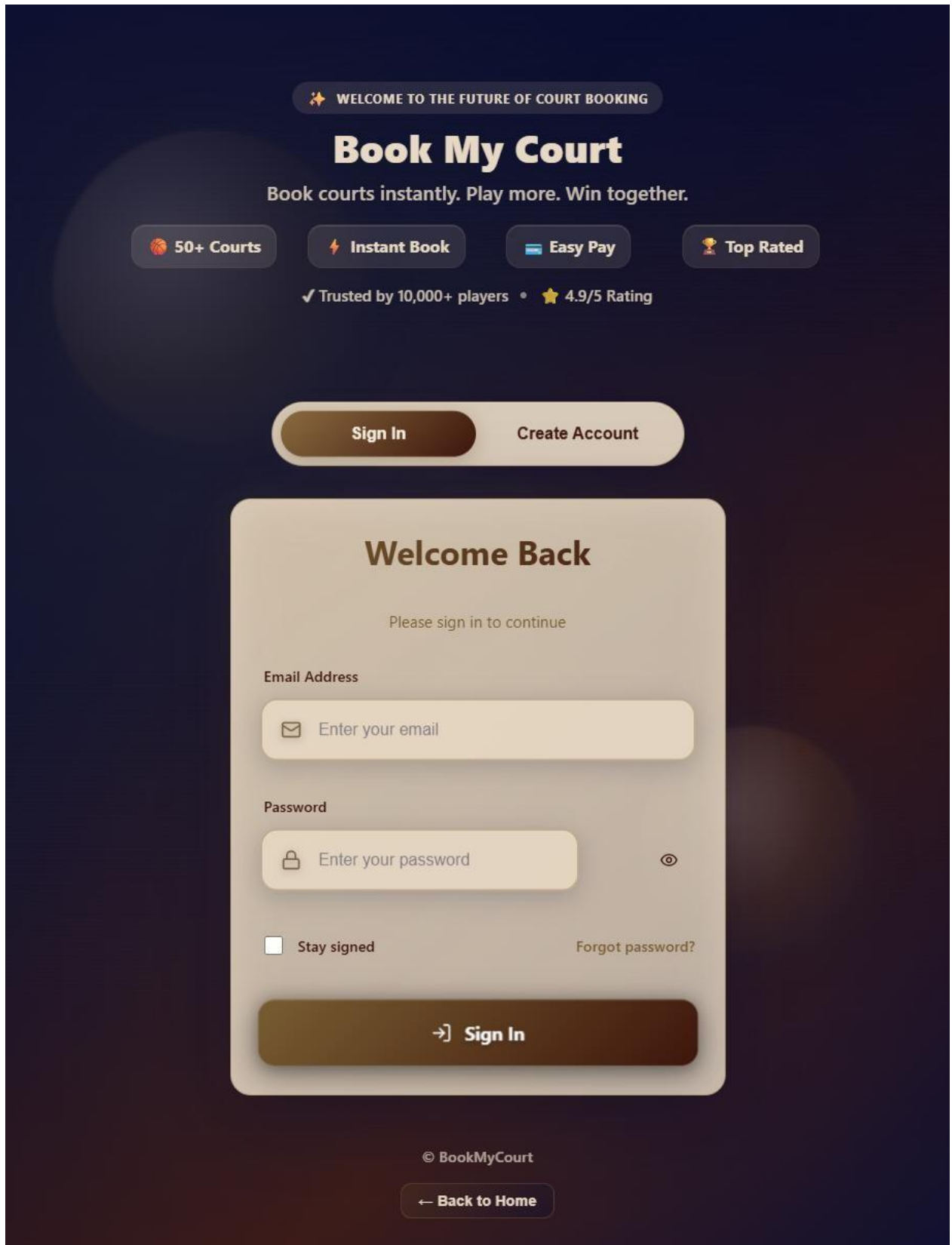


 Back

 Save Changes

Step 18: The user navigates to Edit Profile to change their personal details.

Admin Panel



The image shows the 'Book My Court' Admin Panel login page. At the top, a dark blue banner contains the text 'WELCOME TO THE FUTURE OF COURT BOOKING' with a star icon. Below this is the 'Book My Court' logo and the tagline 'Book courts instantly. Play more. Win together.' Four feature buttons are displayed: '50+ Courts' (with a basketball icon), 'Instant Book' (with a lightning bolt icon), 'Easy Pay' (with a credit card icon), and 'Top Rated' (with a trophy icon). A trust badge states 'Trusted by 10,000+ players • 4.9/5 Rating'. The main navigation area has 'Sign In' and 'Create Account' buttons. The 'Sign In' button is active, leading to a 'Welcome Back' modal. This modal prompts the user to 'Please sign in to continue' and provides input fields for 'Email Address' and 'Password'. The email field has an envelope icon and placeholder text 'Enter your email'. The password field has a lock icon, placeholder text 'Enter your password', and a toggle eye icon. Below the password field are a 'Stay signed' checkbox and a 'Forgot password?' link. A large 'Sign In' button with a right arrow icon is at the bottom of the modal. The footer includes '© BookMyCourt' and a 'Back to Home' button.

WELCOME TO THE FUTURE OF COURT BOOKING

Book My Court

Book courts instantly. Play more. Win together.

50+ Courts Instant Book Easy Pay Top Rated

✓ Trusted by 10,000+ players • 4.9/5 Rating

Sign In Create Account

Welcome Back

Please sign in to continue

Email Address

Enter your email

Password

Enter your password

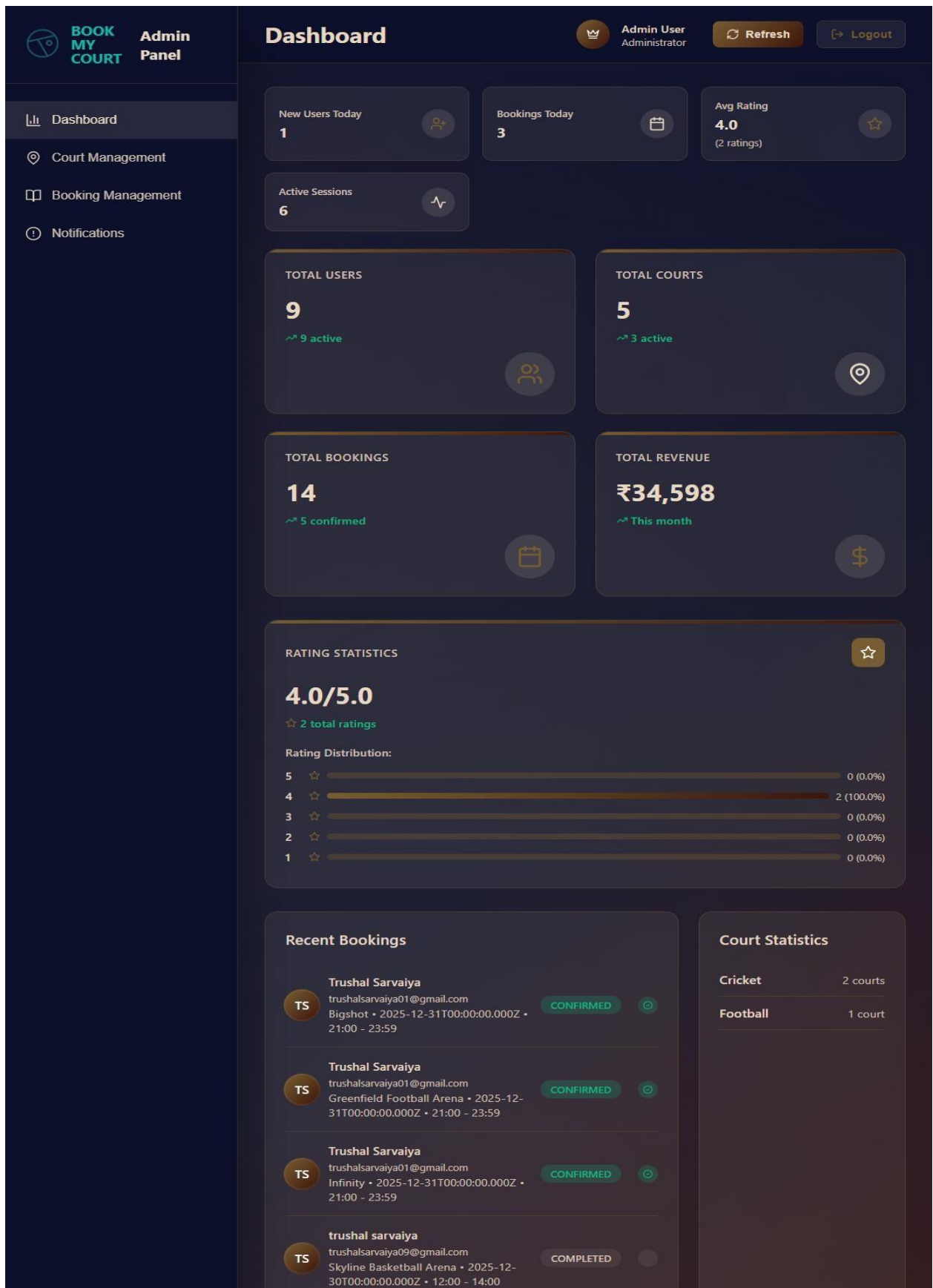
☐ Stay signed [Forgot password?](#)

→ Sign In

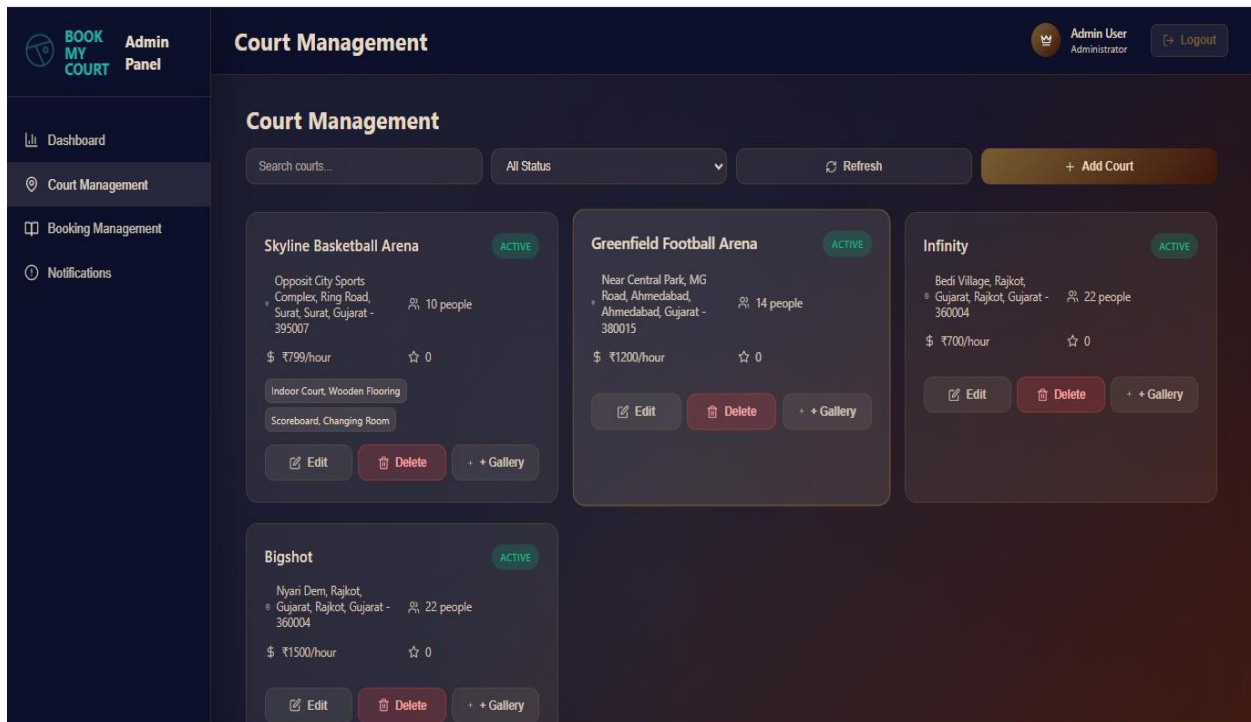
© BookMyCourt

← Back to Home

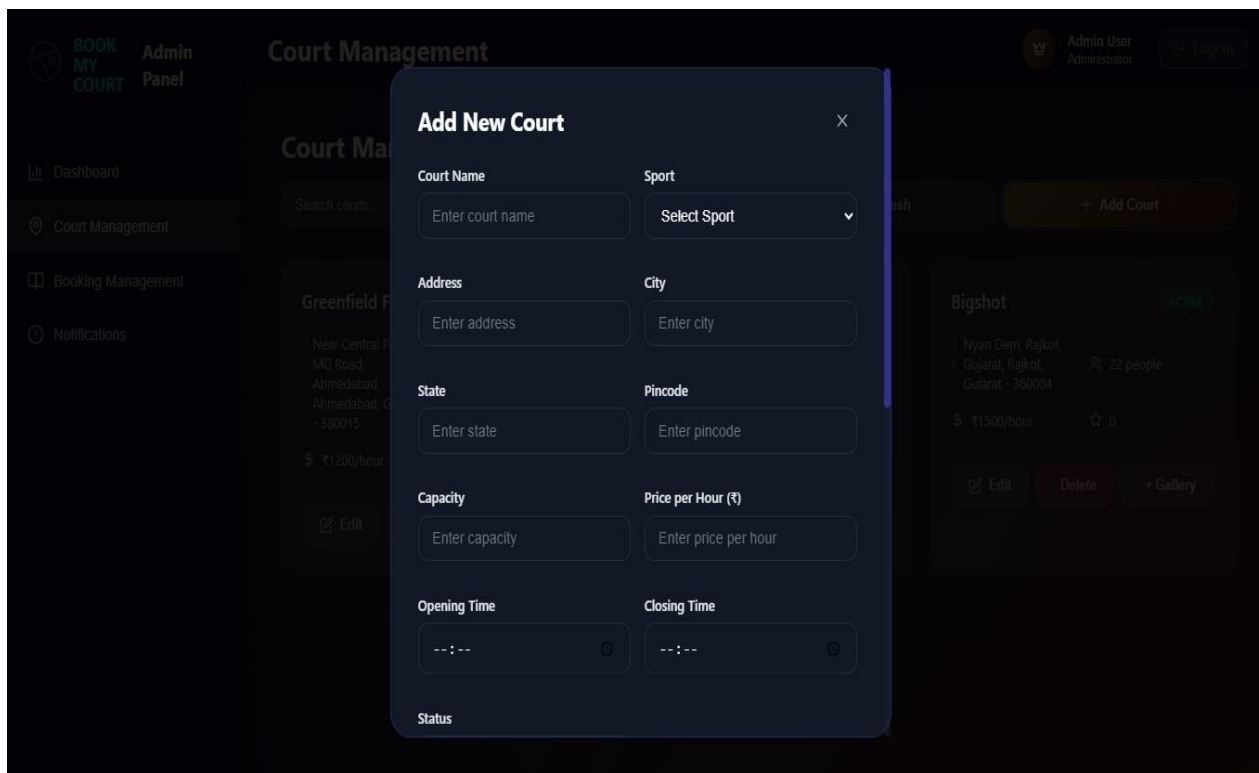
Step 1: Admin opens the Login Page and enters email & password.



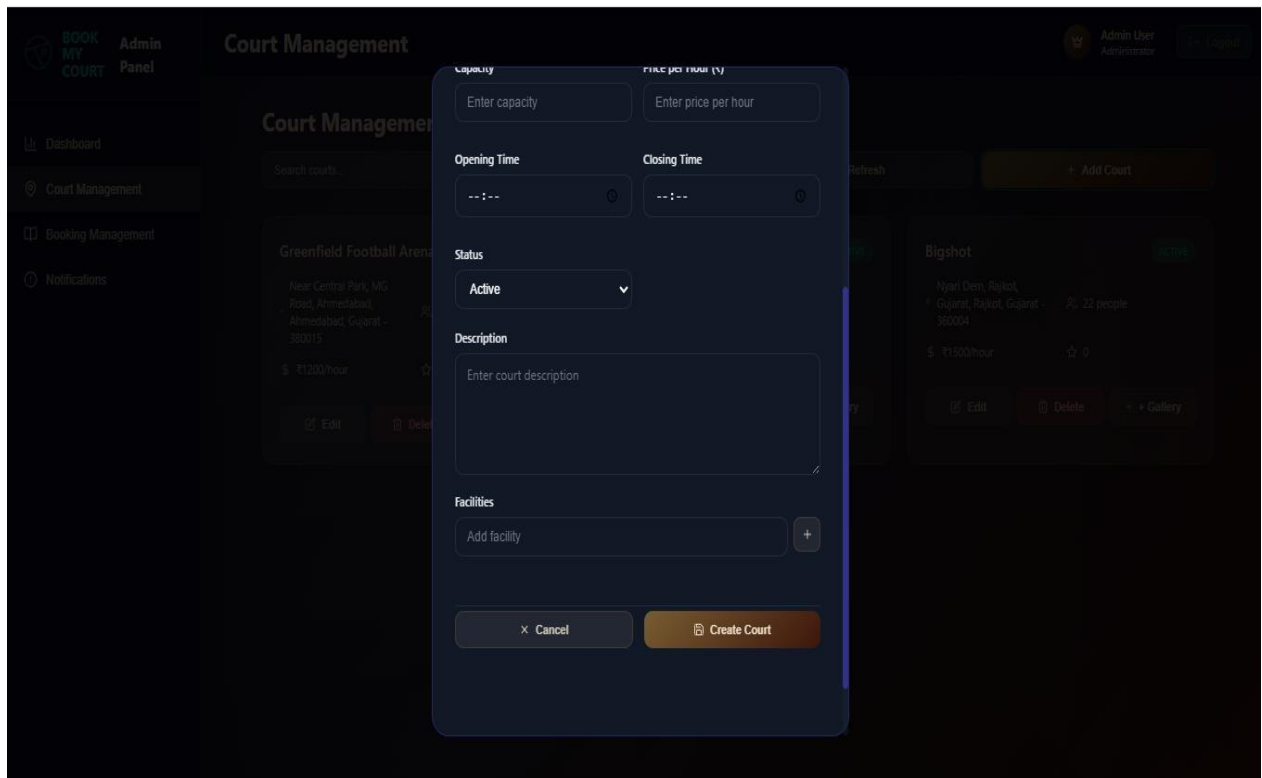
Step 2: Admin reaches the Dashboard showing overall stats.



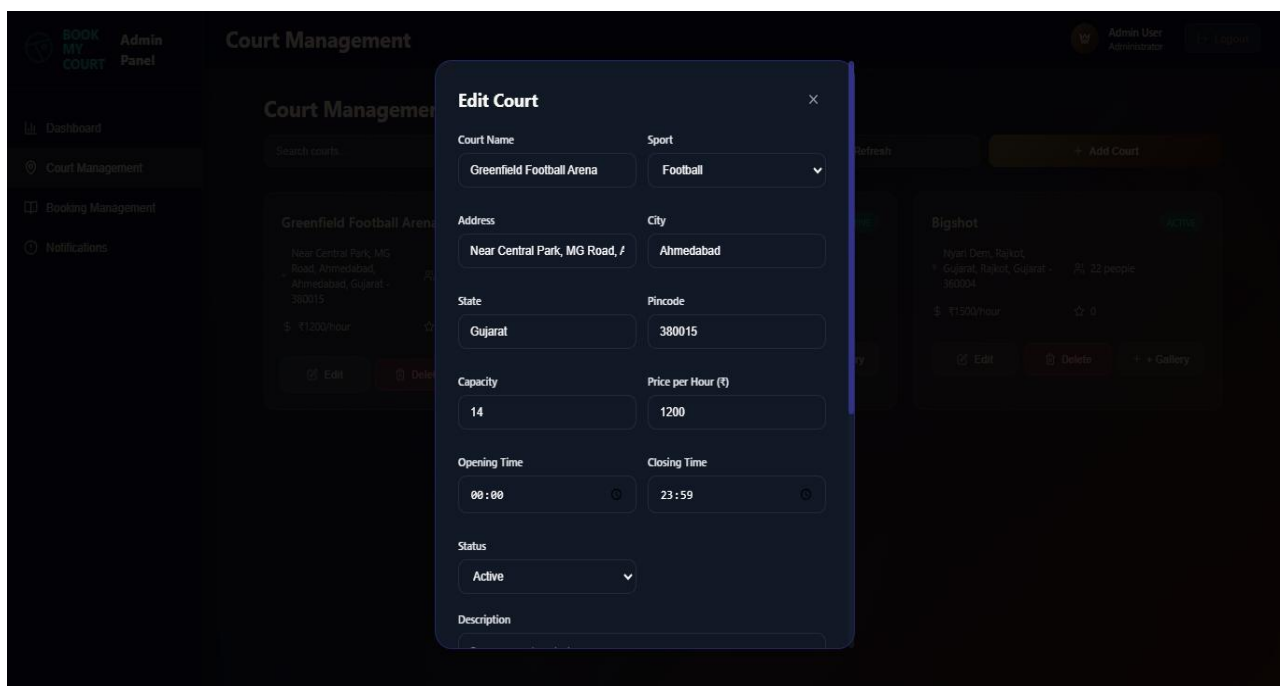
Step 3: Admin opens Court Management to view all courts.



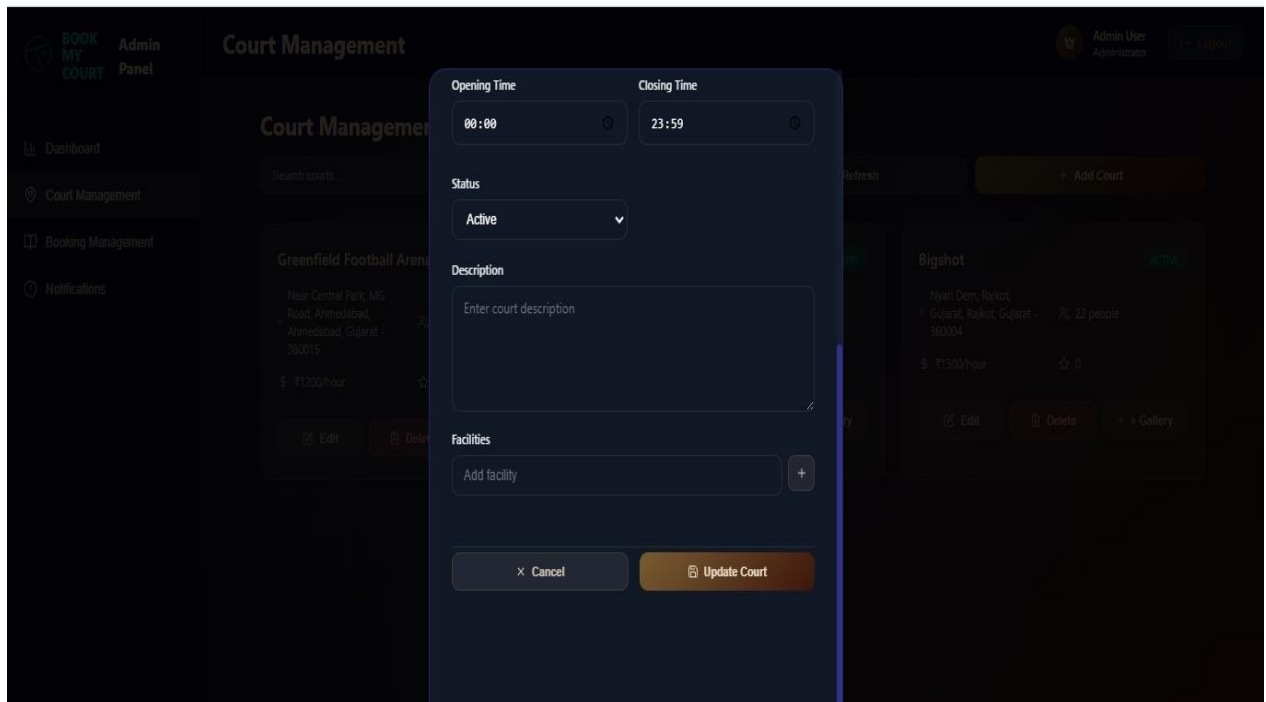
Step 4: Admin clicks Add Court and fills the court details.



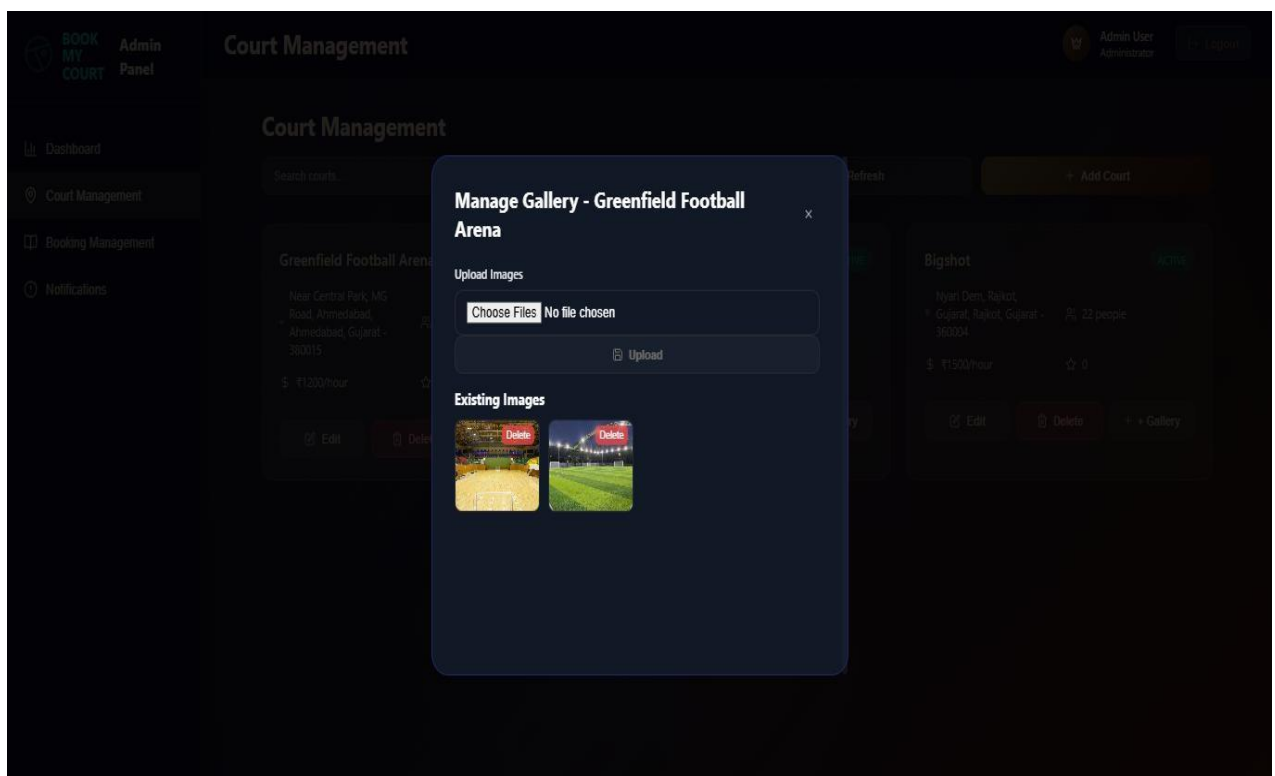
Step 5: Admin clicks Add Court and fills the court details(part-2).



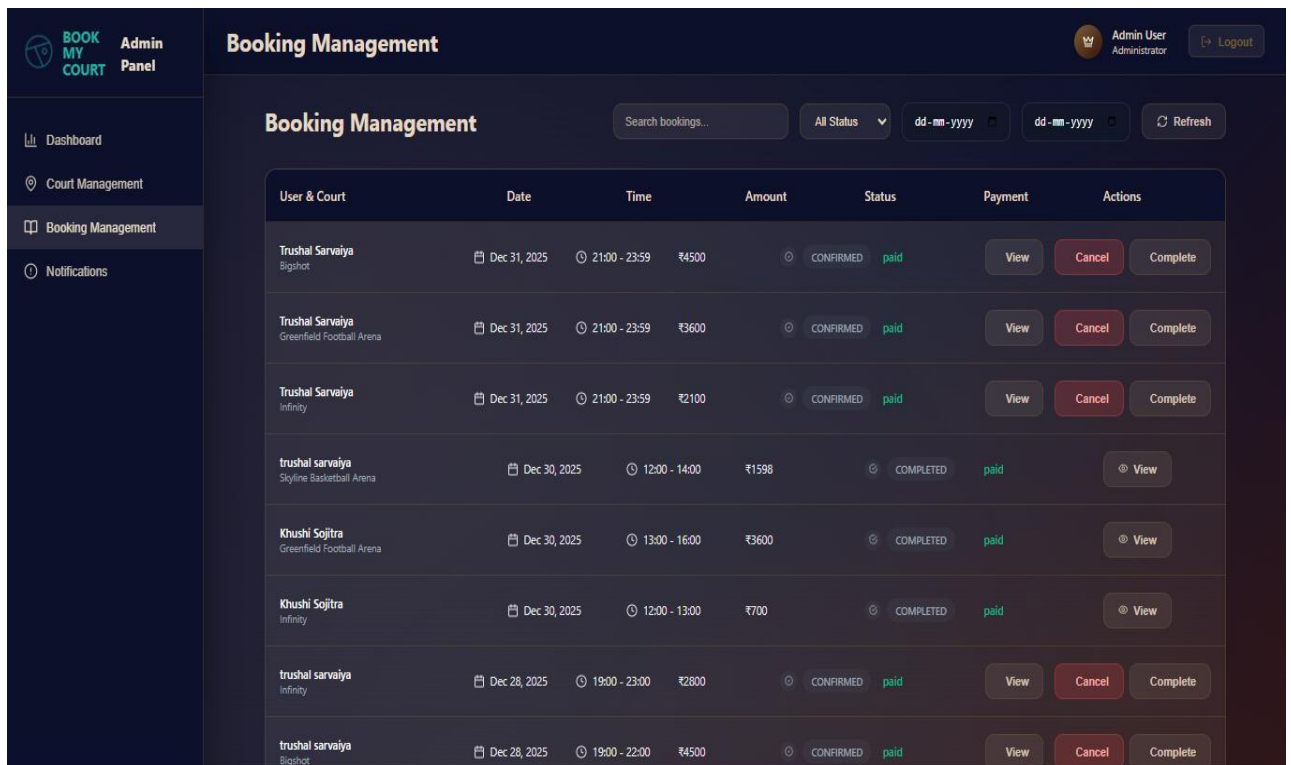
Step 6: Admin clicks Edit Court and Edit the court details.



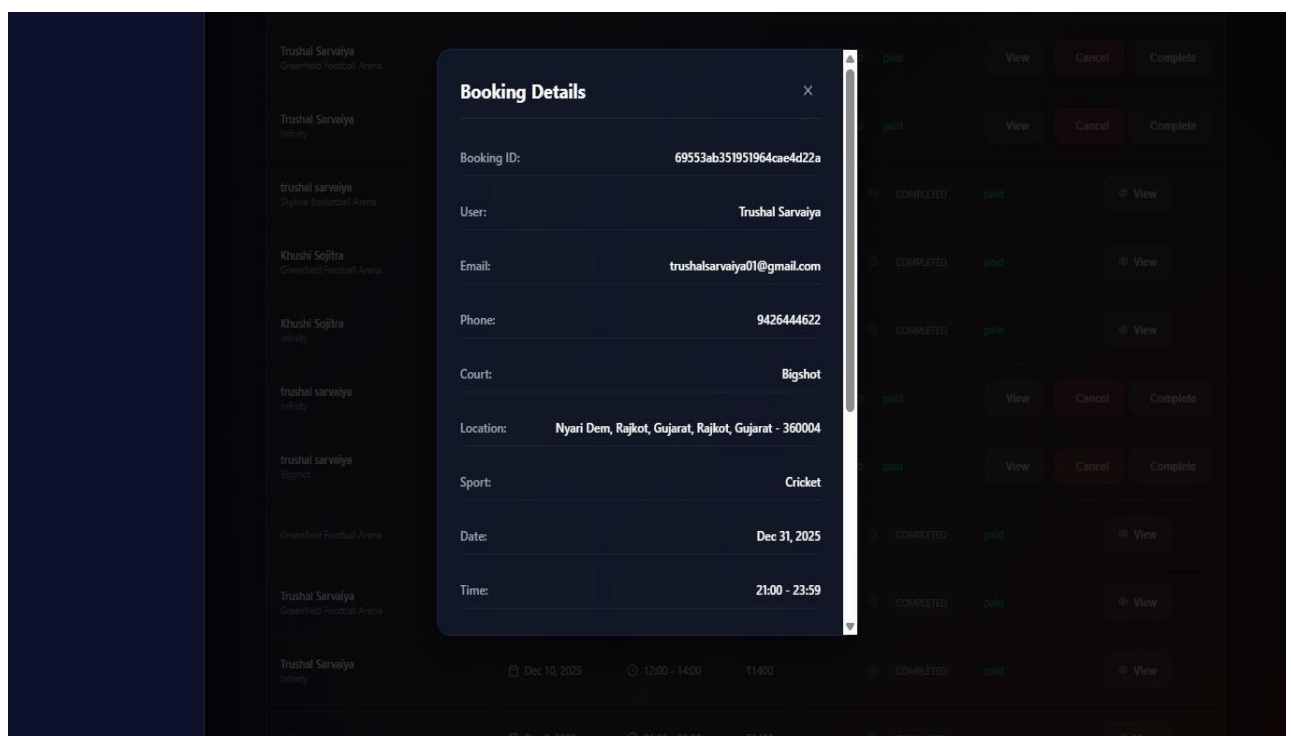
Step 7: Admin clicks Edit Court and Edit the court details(part-2).



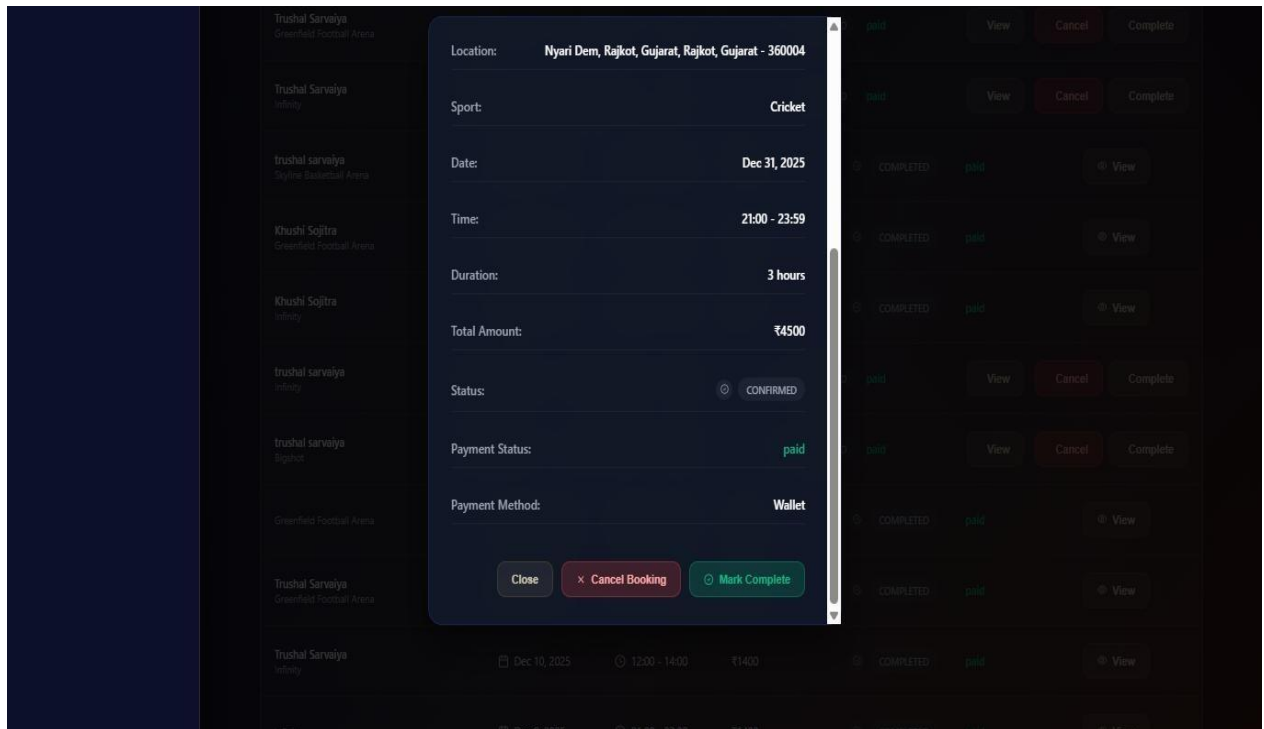
Step 8: Admin can add court image & delete existing images of court



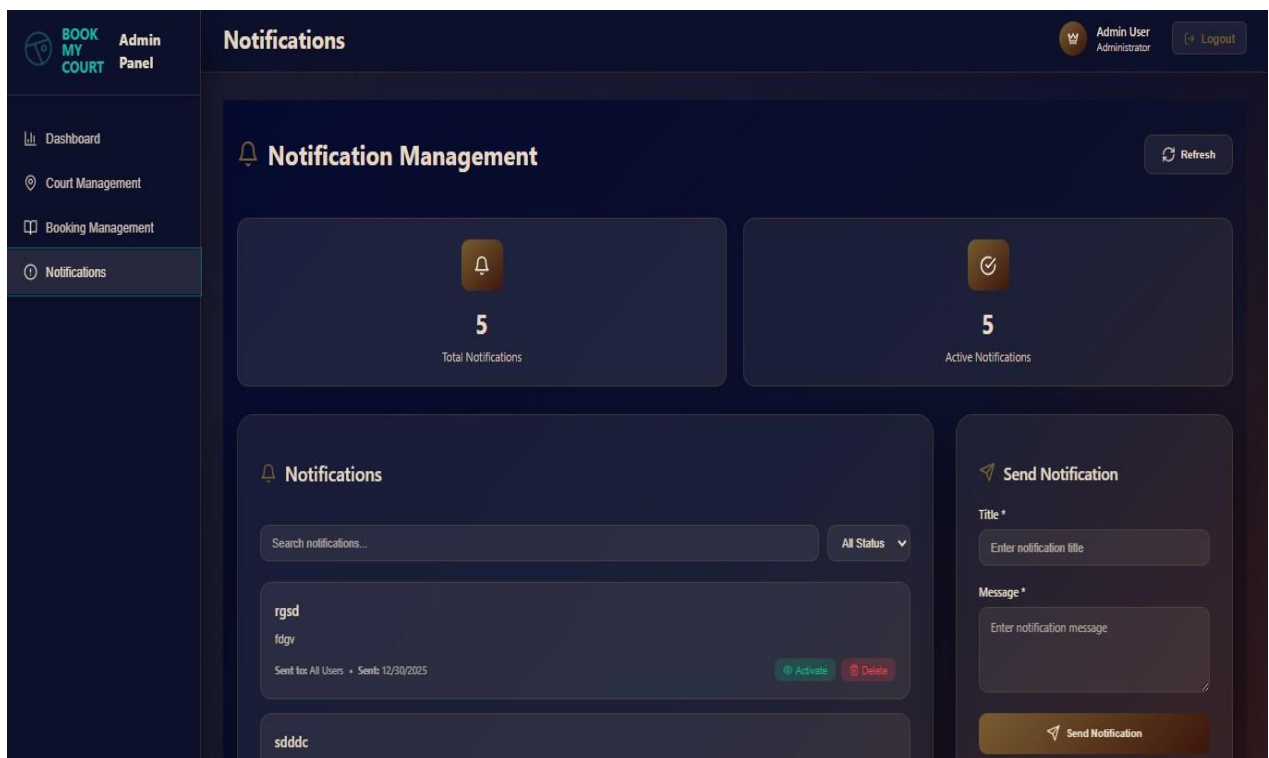
Step 9: Admin can view all bookings and efficiently confirm or cancel them through a centralized dashboard.



Step 10: Admin can see the user's booking details.



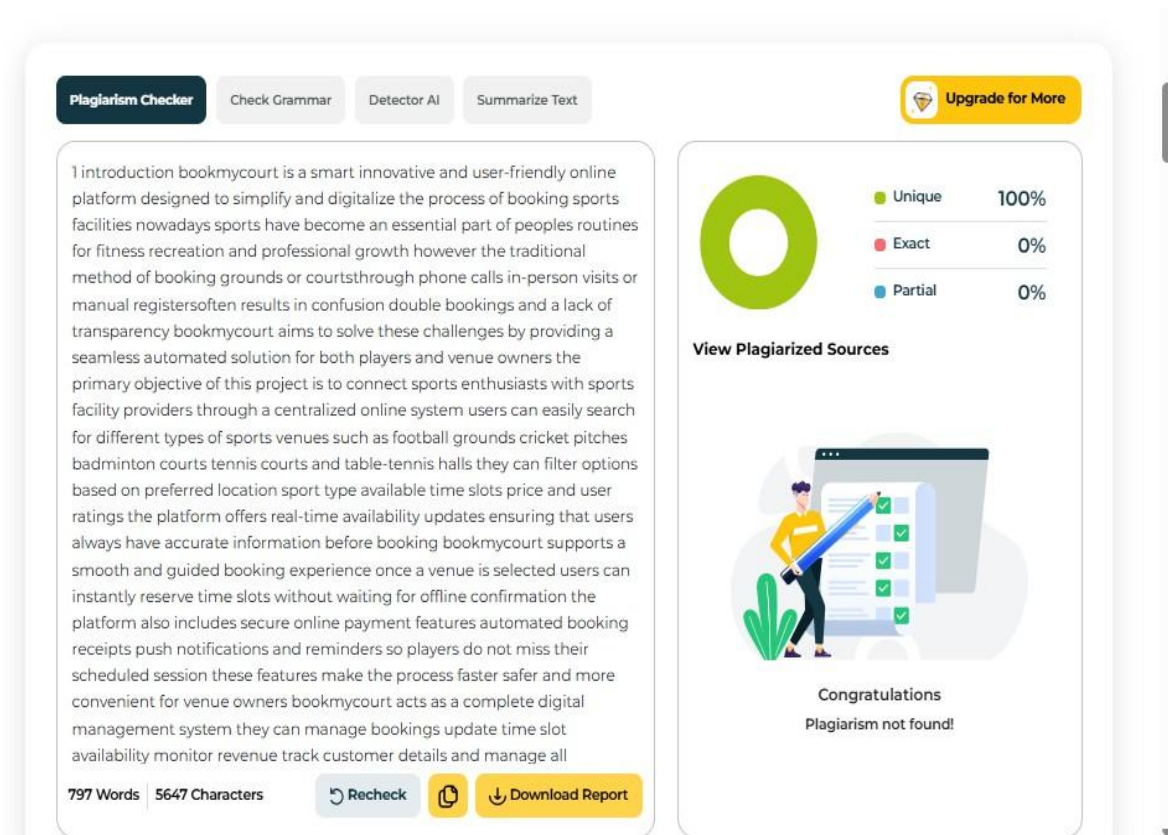
Step 11: Admin can see the user's booking details(part-2).



Step 12: Admin creates a message about any offer or update, and sends the notification to all users.

Appendix C – Plagiarism Report

Tool Name :- PlagiarismDetector.net



1. Introduction Module

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2. Overall Description

2.1 Product Perspective

BookMyCourt is an independent web-based platform developed to simplify and modernize the process of sports facility booking. Unlike traditional approaches such as phone reservations, on-site registrations, or manual record-keeping in spreadsheets, the system delivers an efficient and intuitive digital solution with real-time availability. Designed as an independent system, it can be extended through modular features and API integrations, ensuring scalability and adaptability for future requirements. The product leverages modern web technologies including React.js for the frontend and Node.js with Express.js for backend services, while MongoDB serves as the primary data store. It is designed for multi-user access, with distinct roles such as players (users), venue administrators, and support staff.

2.2 Product Functionality

The BookMyCourt platform is designed to provide seamless interaction between users (players), venue administrators, and system components. Below is a high-

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Booking Management: Users can view, modify, or cancel their bookings. Login and Registration: Users can create an account or log in to manage their bookings. Review and Ratings: After their stay, users can leave reviews and ratings. Profile Management: Users can update their profile information.

Plagiarized

25%

<https://github.com/ShubhamChoudharyShubh/Hotel-Booking-Website/>

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2. Overall_Description Module

Plagiarism Checker

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3 specific requirements 311 user interfaces the system will feature a responsive user-friendly web interface developed using reactjs ensuring seamless operation across modern web browsers and devices the user interface will be consistent with modern design standards focusing on usability accessibility and clarity general ui characteristics a consistent header and footer will appear across all pages for easy navigation standard buttons like login register book now cancel and submit will be present with recognizable icons where appropriate error and confirmation messages will be displayed using modal or toast notifications following a consistent color and style pattern eg red for errors green for success all screens will be responsive and follow mobile-first design principles to ensure compatibility with smartphones and tablets fonts color themes and layout will follow a clean and minimal design in line with modern web design practices user interface screens 1 home page displays a welcome message along with a brief overview of the platform and its features includes a search bar allowing users to find sports facilities based on sport type eg football badminton or location city area provides quick access links to essential actions such as login register and view bookings for easy navigation 2 user registration and login registration form with fields for name email mobile number and password login form for registered users password reset and otp verification screens 3 dashboard player displays user profile details and past bookings upcoming bookings section with the option to cancel or reschedule notifications for booking confirmations refunds and platform

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3. Specific_Requirements Module