

# **ONLINE APPOINTMENT SYSTEM**

## **MINI PROJECT REPORT**

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**DEPARTMENT OF COMPUTING TECHNOLOGIES**



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**SCHOOL OF COMPUTING**

**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY**

**KATTANKULATHUR**

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# **SRM INSTITUTION OF SCIENCE AND TECHNOLOGY**

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## **BONAFIDE CERTIFICATE**

**Certified that the 21CSC203P Advance Programming Practice course project report titled “TRAFFIC MANAGEMENT SYSTEM” is the bonafide work done by SARNAV BHARADWAJ- RA2311026010164 , YASH CHAUHAN - RA2311026010170 , RAJEEV TIWARI - RA2311026010180 of II Year/III Sem B.Tech(CSE-AI&ML) who carried out the mini project under my supervision.**

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# **ABSTRACT**

The Online Appointment System is an integrated solution designed to streamline reservation and ticketing processes for dining and events. The system allows users to effortlessly book reservations at restaurants (DineOut) and secure tickets for events, offering a seamless and user-friendly experience. This application leverages Java Swing for its graphical user interface (GUI), providing a desktop-based platform for users to interact with the system, while MySQL serves as the database management system to store user data, reservations, event schedules, and ticketing details.

Key features of the system include a real-time booking interface, available seats/tickets management, and confirmation notifications. Users can browse through available dining options or events, select their preferred time slots, and confirm their reservations or ticket purchases. Administrators can manage bookings, monitor user activities, and generate reports, ensuring the system remains up-to-date and responsive to the needs of both customers and service providers.

The system uses MySQL for database integration, which ensures data integrity, consistency, and scalability. Java Swing offers a robust environment for creating the front-end user interface, which is intuitive and adaptable across different user scenarios. With this combination of Java, Java Swing, and MySQL, the system provides a reliable solution for both consumers and businesses, enhancing the overall experience in the digital reservation and event ticketing space.

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# INTRODUCTION

In today's fast-paced world, convenience is key, especially when it comes to making dining reservations or purchasing event tickets. The Online Appointment System (DineOut & Event Ticketing) offers a one-stop solution by combining these essential services into a single, integrated platform. This system provides immense value by streamlining the entire booking process, saving time and effort for users while offering businesses a more efficient way to manage their operations. By bringing dining and event bookings together, it simplifies the user experience, making it easier for people to plan their outings with minimal hassle.

For users, this integrated platform offers a seamless experience. Instead of managing multiple applications or websites for different bookings, customers can handle all their reservations from a single source. Whether it's reserving a table at a restaurant or buying tickets for an event, users can access real-time availability, reducing the risk of overbookings and ensuring a smoother booking experience. This not only saves time but also enhances convenience by allowing people to plan their activities more effectively.

For businesses in the hospitality and entertainment sectors, the system provides an efficient way to manage reservations and ticket sales. With everything centralized, businesses can easily track bookings, gain insights into customer preferences, and improve customer service. This unified approach helps increase operational efficiency, drive higher revenue, and provide a better experience for customers, ultimately improving satisfaction and engagement.

The backbone of this online appointment system is Java, which ensures a stable, reliable, and platform-independent solution. Java is known for its robust features, including scalability, security, and the ability to handle complex tasks, making it an ideal choice for building an application that can grow with increasing user demands.

Java Swing, as part of Java's standard library, plays a vital role in the development of the system's graphical user interface (GUI). Swing provides the tools to create modern, intuitive, and responsive interfaces, crucial for delivering a positive user experience. With Swing, developers can build custom components such as date pickers, availability indicators, and booking confirmations, making the system not only functional but also visually appealing. This ensures users interact with an interface that is easy to navigate, allowing them to make reservations or purchase tickets without complications.

Together, Java and Java Swing create a powerful combination that guarantees the smooth operation of the Online Appointment System. This technology stack ensures that the system is efficient, user-friendly, and scalable, providing a reliable platform for businesses and a convenient solution for users looking to manage their dining and event plans all in one place.

# LITERATURE SURVEY

## Literature Survey: Schedulio - Online Appointment System (DineOut & Event Ticketing)

[1] Esteva, A., Robicquet, A., Ramsundar, B., Kuleshov, V., DePristo, M., Chou, K., Cui, C., Corrado, G. S., Thrun, S., & Dean, J. (2019). A guide to deep learning in healthcare. *Nature Medicine*, 25(1), 24-29. This paper provides insights into the applications of deep learning in healthcare, including diagnostic systems, symptom checking, and predictive analytics, which are foundational for understanding AI's potential in health-focused applications.

[2] Topol, E. (2019). *Deep Medicine: How Artificial Intelligence Can Make Healthcare Human Again*. Basic Books. In *Deep Medicine*, Eric Topol explores the transformative potential of AI in making healthcare more accessible and personalized, while also addressing concerns about human-centered care. Topol argues that AI tools can empower patients to take charge of their health by providing actionable insights, leading to proactive self-management and preventive care. This work is particularly relevant to our objective of promoting autonomous healthcare management by providing users with direct access to health insights, reducing dependence on clinical visits for minor issues, and empowering users to make informed health decisions.

[3] Miotto, R., et al. (2018). Deep learning for healthcare: review, opportunities and challenges. *Briefings in Bioinformatics*, 19(6), 1236-1246. Miotto and colleagues present an in-depth review of deep learning applications in healthcare, discussing the current opportunities and challenges. This article provides valuable insights into how deep learning models can analyse complex patient data, such as EHRs, genomic data, and imaging, to detect disease patterns, predict health risks, and personalize treatment recommendations.

[4] Patel, V., Arocha, J. F., & Zhang, J. (2020). How AI in healthcare can improve diagnosis and treatment. In *Proceedings of the 11th International Conference on Healthcare Informatics*, IEEE, 371-376. This conference paper discusses how AI-driven diagnostic tools improve healthcare efficiency and accessibility, supporting the case for AI tools in providing early health assessments.

The development of online appointment systems has been a growing trend, especially with the increasing demand for seamless digital experiences in sectors like dining and entertainment. Schedulio, an integrated platform for online appointments related to dining reservations (DineOut) and event ticketing, aims to provide an all-in-one solution. This literature survey explores various related systems and technologies, emphasizing the role of integrated platforms in enhancing user experiences and business efficiencies.

In the environment of education, many meeting and discussion occurred between lecturer and student. To make an appointment with the lecturer, sometimes students must come to the office and see the lecturer directly to check whether he or she available or not at that time. If the lecturer is busy, then the student should make an appointment on another time and need to come again. Although this way 'works', there can be a number of issues that can be raised which is sometimes student do not know whether they comes in the right time or not. Certain lecturer prefers if their student make an appointment first before come to see them because he or she can prepare for that discussion or meeting. But how to make an appointment if student did not have the lecturers contact number? In this situation, it might be problem for student to set an appointment with that lecturer. The existing system in KUKTEM named Student Community only Provide facilities such as to write and read a memo, to view course result, to view exam schedule, financial information, to make vehicle registration and etc. But there have no facilities for student to set an appointment to the lecturer through online. Most of the student use memo as a medium to set an

appointment with the lecturer beside contact directly using mobile phone. This method not very practical where sometimes lecturer may forget about the appointment because there was no specific schedule to list all the appointment requested

Online appointment system at the beauty saloon was selected as a research. This system opens for all customers without any account registration. Firstly, customer needs to select the date to make an appointment. After that they need to select what the services that their want. Next they should select which the time slot preferred and the staff name will serve them. The last step is filling all customers' personal information such as first name, last name, mobile phone number, house phone number and email address. After step one to four finished, click button "confirm". One message box will appear to tell that appointment has been confirmed. All the details such as time, date, types of services, staff mime in charge and confirmation number will be send directly to customer's email. is an example of online appointment where customer can set an appointment before get a treatment at the beauty saloon

### **Conclusion:**

Schedulio represents an innovative approach by integrating dining reservations and event ticketing into a single platform. While individual systems like OpenTable, Eventbrite, and Resy have demonstrated the benefits of online appointment and ticketing systems, Schedulio stands out by combining these services. Leveraging Java for backend processing, Java Swing for user interface design, and MySQL for database management ensures that Schedulio is robust, scalable, and secure. As digitalization continues to shape customer experiences, integrated platforms like Schedulio offer immense value, streamlining the process for users while enhancing operational efficiency for businesses in both the dining and entertainment sectors.



# REQUIREMENT ANALYSIS

## 1. Functional Requirements

### 1.1 User Registration and Authentication

- Sign-up/Login: Users should be able to create an account and log in using email or third-party OAuth (Google/Facebook).
- Password Management: Ability to reset or change passwords.
- Profile Management: Users should be able to update their personal details.

### 1.2 Booking and Reservation System

- DineOut Reservation: Users can search for available restaurants, view details, and book a table.
- Event Ticketing: Users can browse events, view details, and purchase tickets.
- Real-Time Availability: Ensure live updates of availability to prevent overbooking.
- Booking Confirmation: Confirmation via email/SMS and in-app notifications after a successful booking.

### 1.3 Payment Integration

- Payment Gateway: Integration with secure payment systems like Stripe or PayPal to handle reservations and ticket payments.
- Order Summary: A summary page with booking and payment details before final confirmation.

### 1.4 Booking History and Management

- View and Manage Bookings: Users should be able to view past reservations and events, and modify or cancel them as needed.

### 1.5 Admin Dashboard

- Manage Reservations and Users: Admins can manage user accounts, reservations, and event ticket sales.
- Reporting: Admins should have access to reports on bookings, revenue, and user activity.

### 1.6 Search and Filter Features

- Search Functionality: Users should be able to search restaurants or events based on filters like location, date, and category.

## 2. Non-Functional Requirements

## 2.1 Performance Requirements

- **Response Time:** Fast loading and quick processing of bookings and payments.
- **Scalability:** Ability to handle large numbers of simultaneous users, especially during peak times.

## 2.2 Security Requirements

- **Data Encryption:** Use SSL/TLS for secure communication and data encryption.
- **Authentication:** Secure user authentication, with support for OAuth and multi-factor authentication.
- **Payment Security:** Integration with PCI-compliant payment gateways.

## 2.3 User Interface Requirements

- **Responsive Design:** The app should be optimized for mobile devices with a smooth, responsive interface.
- **Intuitive UI:** Clean, modern UI designed with Tailwind CSS for easy navigation and user interaction.

## 3. Technological Requirements

### 3.1 Frontend Technology

- **React Native:** Cross-platform mobile development using React Native for both iOS and Android.
- **Expo:** Use Expo to streamline development and integrate third-party libraries.
- **Tailwind CSS:** For quick, responsive, and customizable design.

### 3.2 Backend Technology

- **Node.js/Express:** For backend development and API management.
- **MySQL:** Relational database for managing user data, reservations, and payments.

### 3.3 API Integration

- **Payment Gateways:** Integrate with Stripe or PayPal for secure payments.
- **External APIs:** Integration with APIs for location services or event data, like Google Maps.

## 4. Operational Requirements

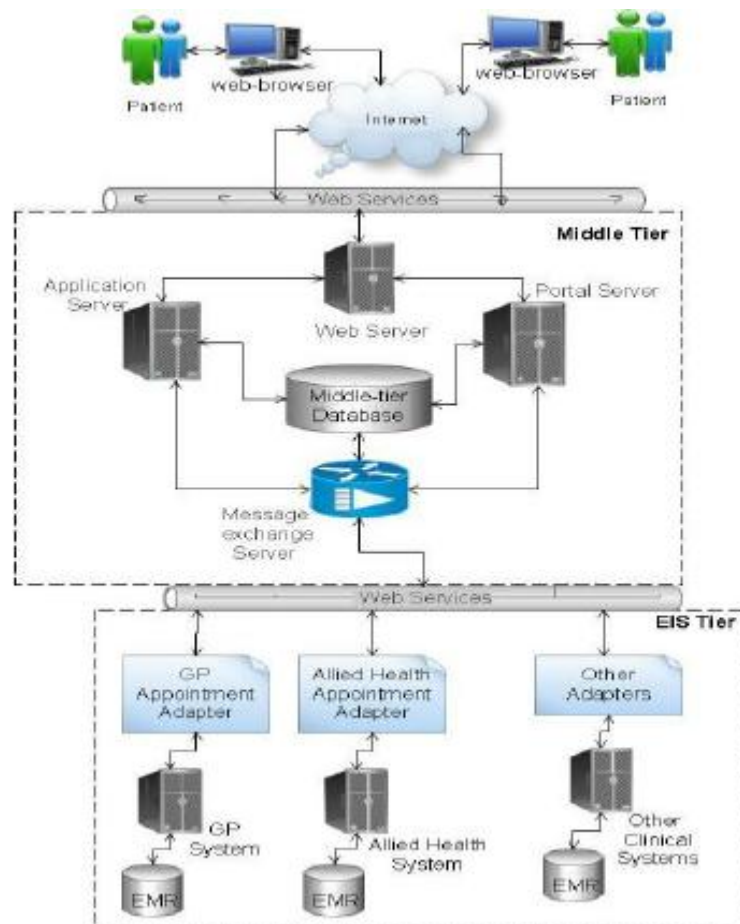
- **Monitoring and Logging:** Track errors and performance using logging and monitoring tools.
- **Backup and Recovery:** Implement automated backups for database reliability.

This streamlined system will allow Schedulio to provide a unified and efficient platform for managing both dining reservations and event ticketing, offering convenience to users and increased operational efficiency for businesses.

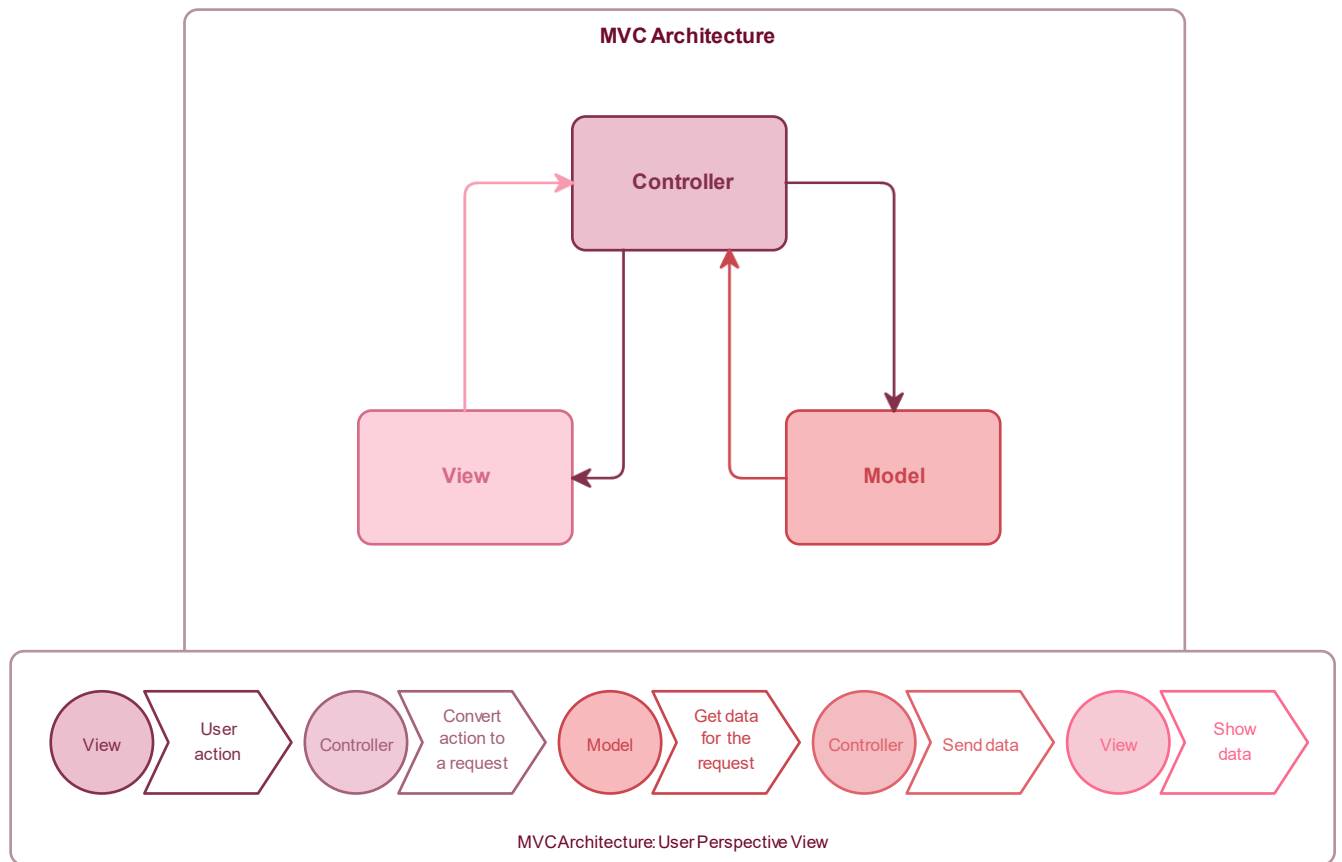
## ARCHITECTURE AND DESIGN

The system architecture of **Schedulio** follows a **client-server** model with a mobile client, backend server, and a database. The architecture is designed to be scalable, with clear separation of concerns and flexibility for future expansions.

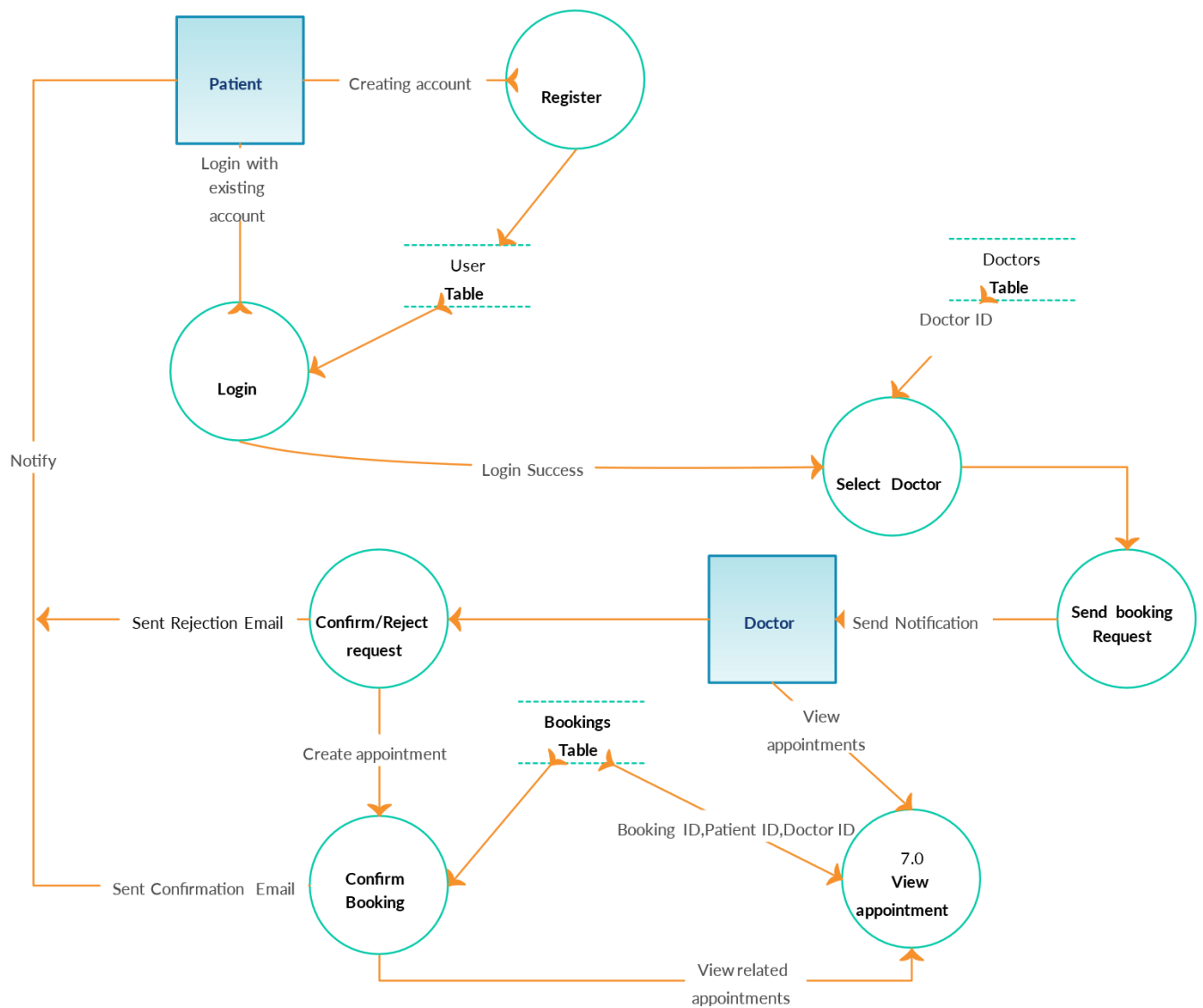
- **Client Side:** Built with **React Native** and **Expo**, the client-side handles user interactions such as booking reservations, purchasing tickets, and viewing event details. The client communicates with the backend through API calls.
- **Backend Side:** The backend is built with **Node.js** and **Express.js**, handling the business logic, data management, and API endpoints. It interfaces with the database (**MySQL**) to store and retrieve data.
- **Database:** The system uses a **MySQL** relational database to store user information, bookings, event data, payments, and reservations. The database ensures data consistency, integrity, and reliable transaction management.
- **Payment Gateway Integration:** The system integrates with external payment providers such as **Stripe** or **PayPal** for secure payment processing.
- **Cloud Hosting:** The backend and database are hosted on a cloud platform like **AWS** or **Google Cloud** for scalability, reliability, and high availability.



## MVC Architecture:



## UML Diagram



# IMPLEMENTATION

## 1. Frontend Implementation

- **React Native** provides a mobile-first platform, allowing the app to be cross-platform for both **Android** and **iOS** devices.
- **React Navigation** is used to manage navigation between different screens, such as the **Appointment Booking Screen, Dine-Out Reservation Screen, Movie Ticketing Screen**, etc.
- **Tailwind CSS** is used for styling the app. With **Tailwind**, we can apply utility-based CSS classes to components to achieve a modern and responsive design quickly.
- Key features in the frontend:
  - **Booking Flow**: The user selects a service (e.g., salon, doctor, restaurant, movie), chooses the details (e.g., date, time, seats), and then makes the payment.
  - **QR Code Generation**: After the payment, the user receives a confirmation in the form of a QR code, which can be scanned as proof of the appointment or reservation.
  - **Real-time Data**: The app communicates with the backend to fetch available services, booking slots, movie listings, restaurant options, etc.

## 2. Backend Implementation

- The **Node.js server** acts as the backend of the platform, handling API requests and interacting with the **MySQL database** to store and retrieve booking information.
- The backend serves several key functions:
  - **Handle User Requests**: When a user selects a service (e.g., salon, restaurant), the backend processes the request to retrieve available options.
  - **Store Data**: It stores booking data, payment methods, and user preferences in a **MySQL database**.
  - **Payment Handling**: The backend can interact with third-party payment systems (e.g., **GPAY, Cards, Cash**) to process transactions and store payment details.

## 3. MySQL Database

- The **MySQL database** holds essential data for the system, including:
  - **Appointments**: Details like the service type, booking date and time, and user payment preferences.
  - **Users**: User information for managing bookings and preferences.
  - **Services**: Information on available services such as salons, clinics, restaurants, and movie shows.
  - **Database Schema**:
    - **Bookings Table**: Stores appointment details such as service type, date, time, payment method.
    - **Users Table**: Stores user details like name, email, etc., for booking management.
    - **Services Table**: Stores details of salons, restaurants, clinics, and movies available for booking.

## 4. QR Code Generation for Confirmation

- After the user successfully completes the booking and payment process, the system generates a **QR**

**code** as confirmation of the transaction.

- This QR code can be scanned at the location (e.g., salon, restaurant, theater) to verify the appointment or reservation.

## **5. Features and User Flow**

### **• Appointment Booking:**

- The user selects a service (e.g., salon, doctor, massage).
- They pick a specific location (e.g., a salon or clinic).
- The user then selects the available date and time for the appointment.
- Payment is processed (via GPAY, Cards, or Cash).
- A **QR code** is generated for appointment confirmation.

### **• Dine-Out Reservation:**

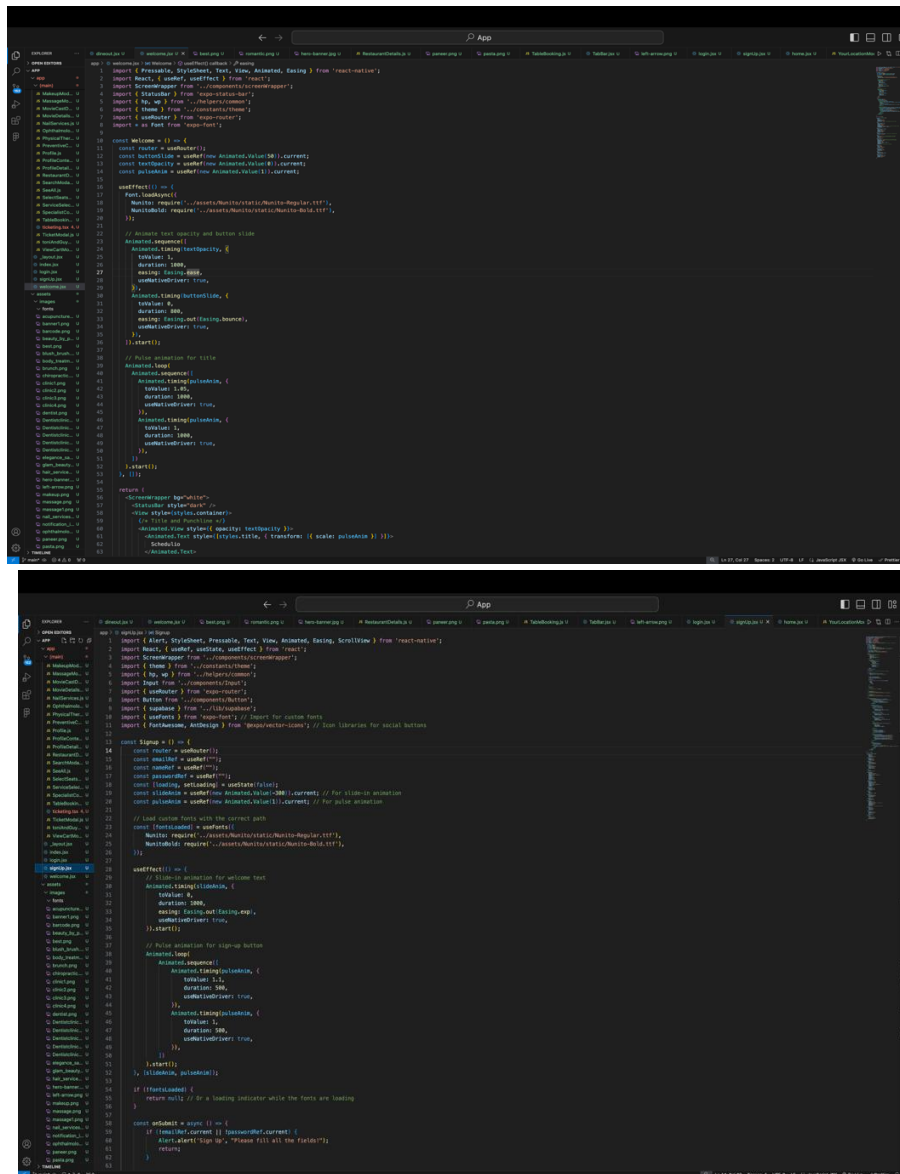
- The user chooses a restaurant, navigates to the restaurant details, and picks a reservation time.
- Payment is processed and confirmed with a QR code generated for the reservation.

### **• Ticketing for Events:**

- The user selects a movie, concert, or comedy show.
- They choose the theater, select seats, and confirm the booking.
- Payment is processed, and a QR code for the ticket is generated.

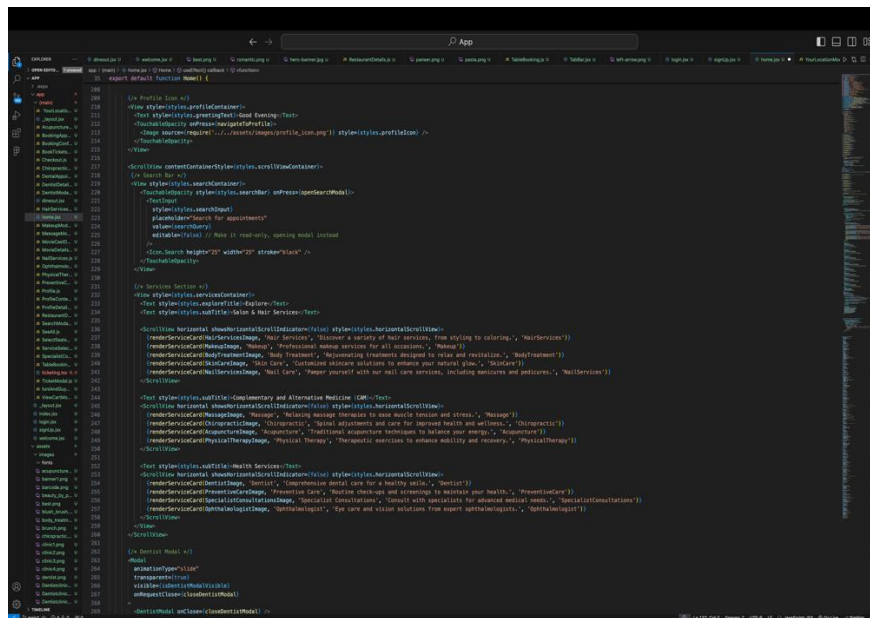
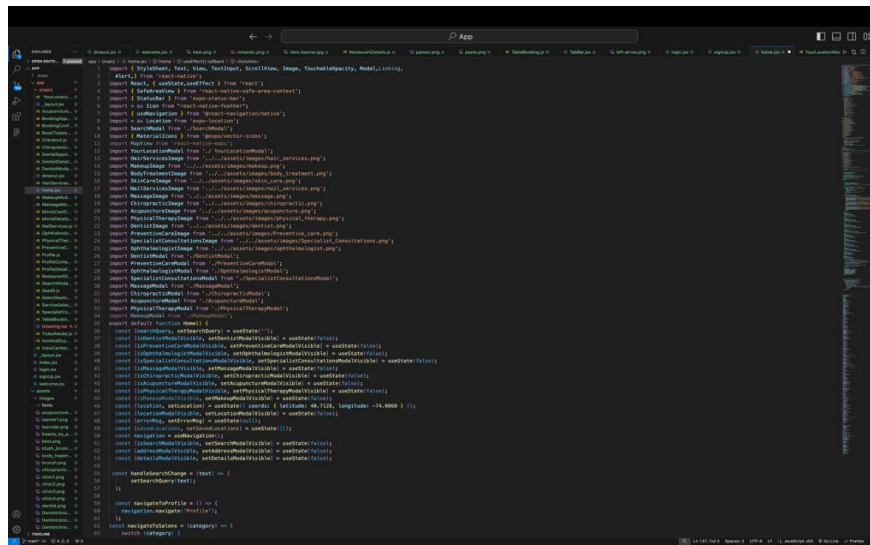


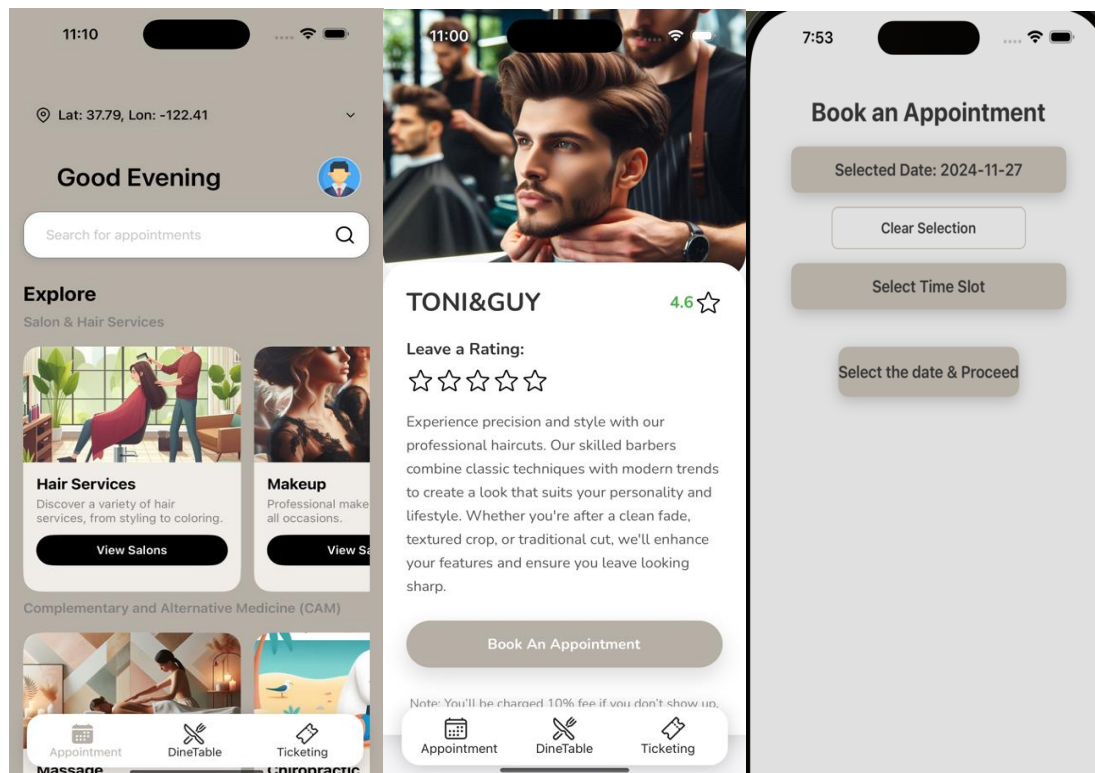
**CODE:**  
**Welcome Page**



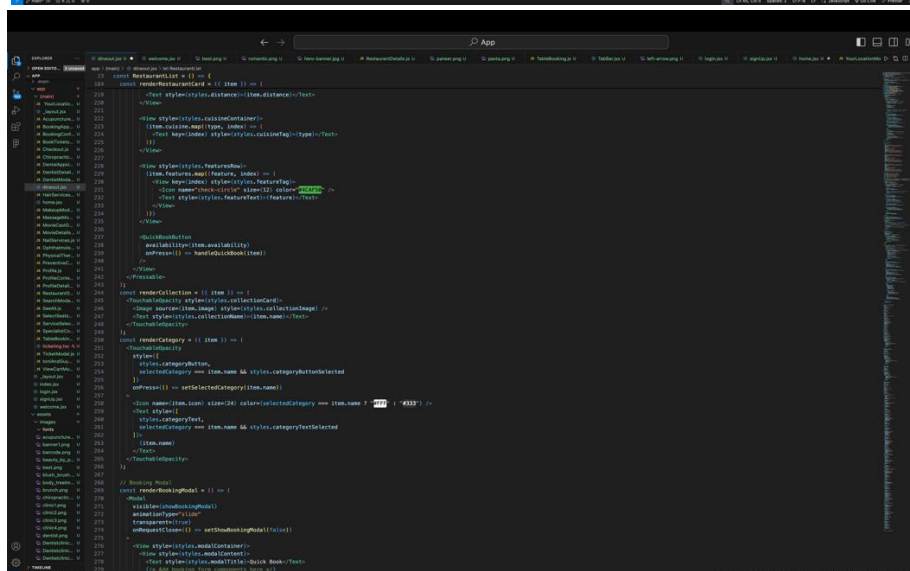
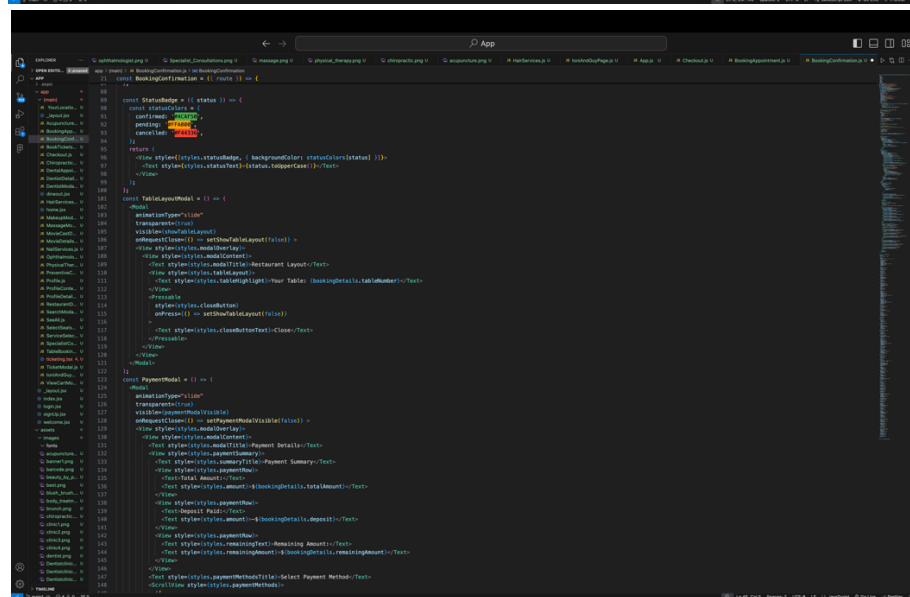
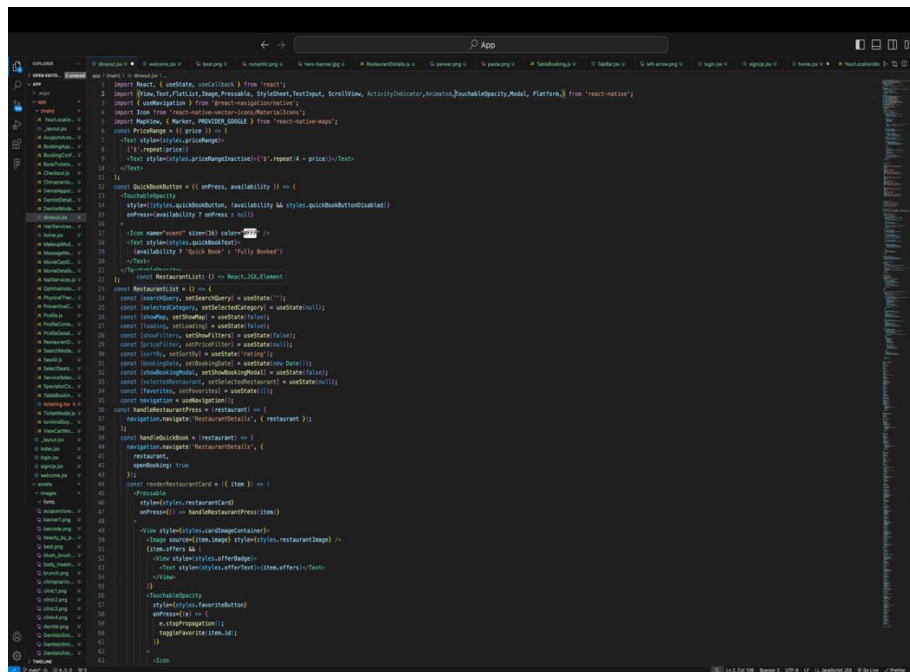


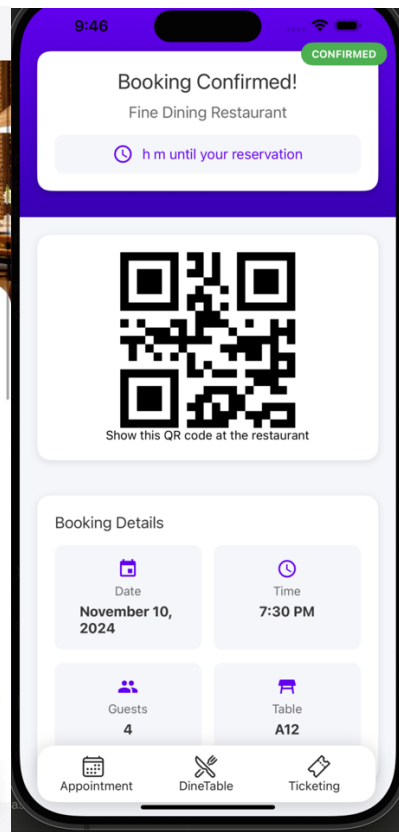
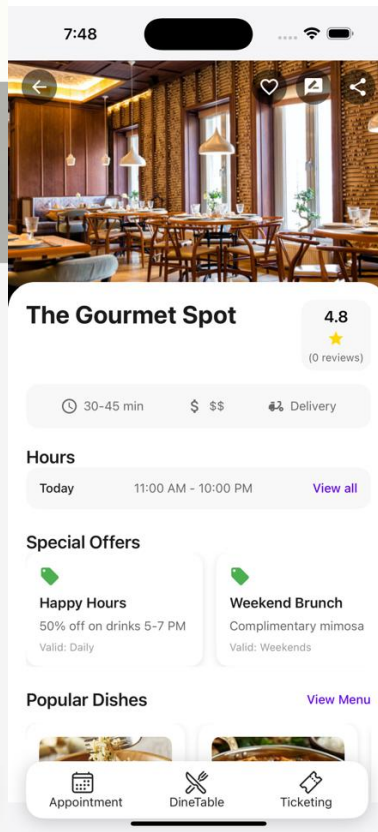
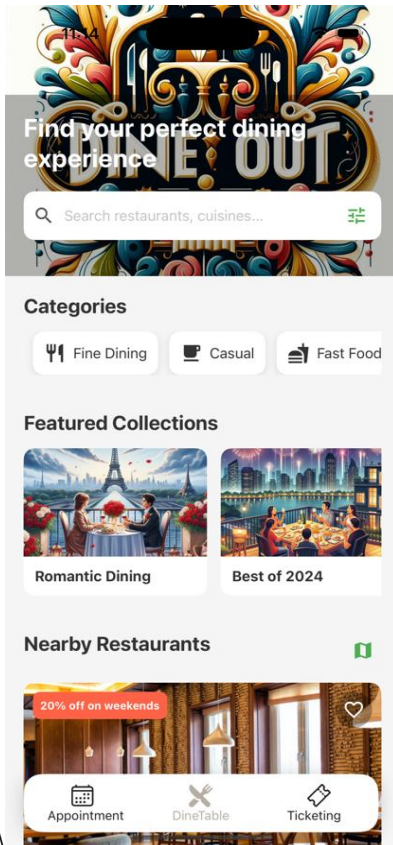
### Home pages (appointment):



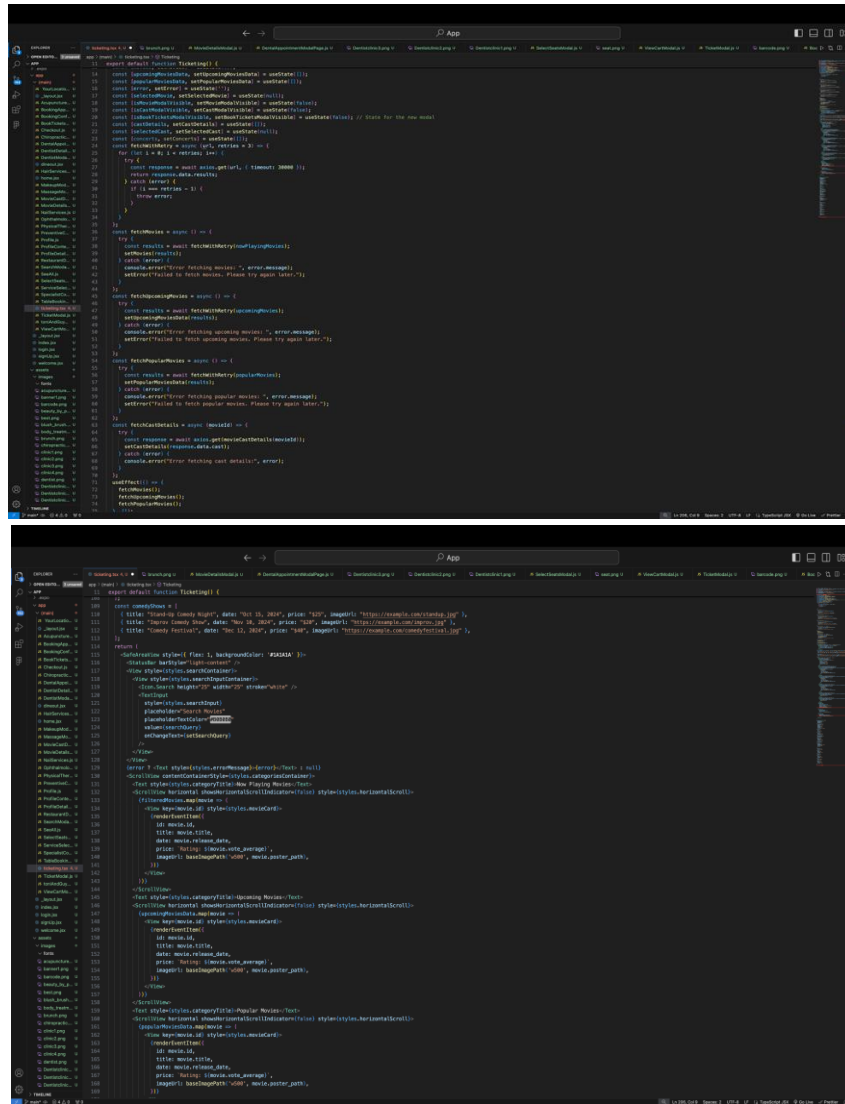


## Homepage(dineout)

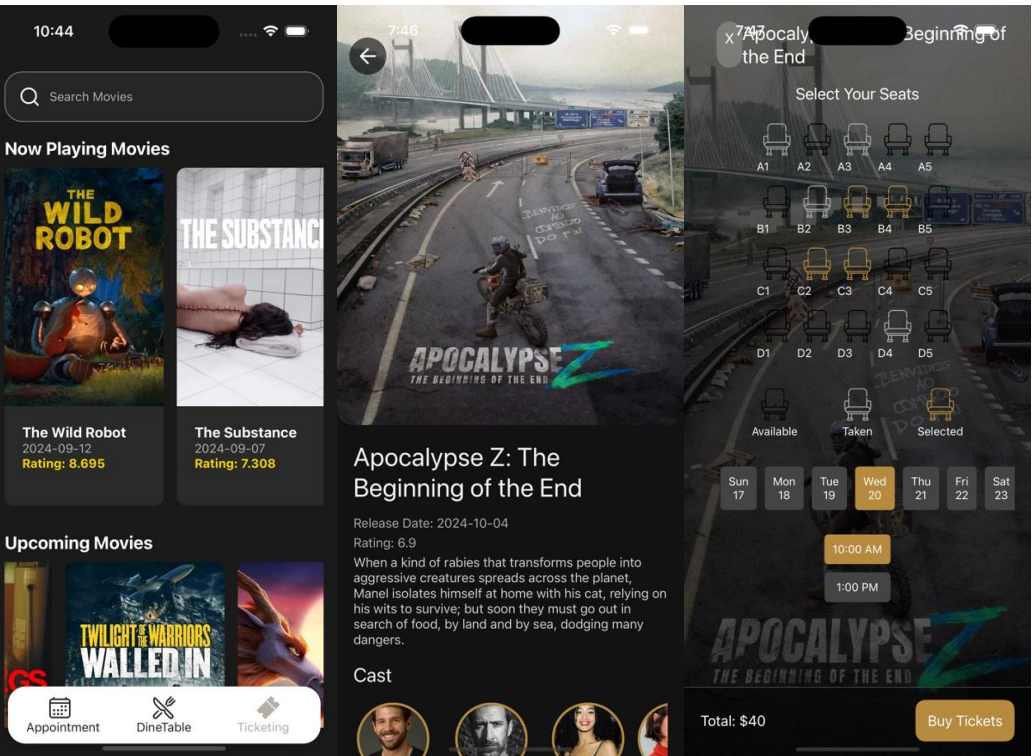




HomePage(ticketing):









# DATABASE

ID	CarID	Phase	Direction
151	CarID1	Queued	East
152	CarID2	RIGHT	South
153	CarID3	LEFT	West
154	CarID4	Moving	North
155	CarID5	Queued	East
156	CarID6	RIGHT	South
157	CarID7	LEFT	West
158	CarID8	Moving	North
159	CarID9	Queued	East
160	CarID10	RIGHT	South
161	CarID11	LEFT	West
162	CarID12	Moving	North
163	CarID13	Queued	East
164	CarID14	RIGHT	South
165	CarID15	LEFT	West
166	CarID16	Moving	North
167	CarID17	Queued	East
168	CarID18	RIGHT	South
169	CarID19	LEFT	West
170	CarID20	Moving	North
171	CarID21	Queued	East
172	CarID22	RIGHT	South
173	CarID23	LEFT	West
174	CarID24	Moving	North
175	CarID25	Queued	East
176	CarID26	RIGHT	South
177	CarID27	LEFT	West
178	CarID28	Moving	North
179	CarID29	Queued	East
180	CarID30	RIGHT	South
181	CarID31	LEFT	West
182	CarID32	Moving	North
183	CarID33	Queued	East

```
mysql> show database;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version
for the right syntax to use near 'database' at line 1
```

```
mysql> use apppro;
```

```
Database changed
```

```
mysql> select*from cars ;
```

ID	CarID	Phase	Direction
151	CarID1	Queued	East
152	CarID2	RIGHT	South
153	CarID3	LEFT	West
154	CarID4	Moving	North
155	CarID5	Queued	East
156	CarID6	RIGHT	South
157	CarID7	LEFT	West
158	CarID8	Moving	North
159	CarID9	Queued	East
160	CarID10	RIGHT	South
161	CarID11	LEFT	West
162	CarID12	Moving	North
163	CarID13	Queued	East
164	CarID14	RIGHT	South
165	CarID15	LEFT	West
166	CarID16	Moving	North
167	CarID17	Queued	East
168	CarID18	RIGHT	South
169	CarID19	LEFT	West
170	CarID20	Moving	North

180	CarID30	Moving	North
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187	CarID37	Queued	East
-----	---------	--------	------

# EXPERIMENTAL RESULTS AND ANALYSIS

## Usability Evaluation

To assess the user-friendliness, ease of navigation, and intuitiveness of the app's interface. Conducted a usability test with a sample group of users (10–20 participants) from the target demographic. Tasks were designed to test key features such as booking appointments, navigating the movie ticketing system, and using the calendar pop-up modal. Observations were made regarding how easily users could complete each task, how long it took them, and where they encountered difficulties.

Navigation: 95% of users completed the task without needing assistance. The home screen's layout and clear menu options made navigation simple.

Task Completion: Most users (90%) were able to successfully book an appointment on the first try.

Visual Design: 85% of users appreciated the modern and clean design, with a preference for the Nunito font and the beige color palette.

Problem Areas: A small percentage of users (10%) had difficulty interacting with the date selection on the calendar due to minor UI inconsistencies.

## User Satisfaction Survey

To gather feedback from users regarding their overall satisfaction with the app's features and user experience, Distributed a post-test survey after usability testing, consisting of both quantitative (Likert scale) and qualitative (open-ended) questions. Questions focused on areas like design, functionality, performance, and feature usefulness.

The app has a high user satisfaction score overall, with positive feedback regarding both its design and functionality. The most common request for improvement was the calendar modal, which can be addressed in future updates.

## System Performance Evaluation

To assess the app's performance in terms of speed, responsiveness, and its ability to handle various loads and conditions. Load Testing: Simulated varying levels of user traffic, including stress testing to see how the app behaves under heavy load (e.g., 200+ concurrent users). Response Time Testing: Measured response times for key actions, including booking an appointment, searching for movies, and navigating between pages. Cross-Device Testing: Conducted performance checks on multiple devices (both Android and iOS), considering different screen sizes and hardware capabilities.

The app performs efficiently under normal conditions and can handle moderate user traffic without major issues. Minor performance improvements could be made, particularly in terms of calendar modal loading and optimizing for older devices. Overall, the app demonstrates strong performance and responsiveness.

## FUTURE SCOPE

The future scope of *Schedulio* envisions an advanced, all-in-one platform that serves as a personalized, intelligent assistant for users' scheduling needs. Leveraging AI, it could provide recommendations based on past preferences, browsing history, and popular trends, offering a tailored experience. Integrating geolocation could allow users to discover local providers, while augmented reality (AR) previews for salons, events, and dining spots would provide immersive pre-visit experiences. Compatibility with external calendar apps, along with real-time notifications, would ensure seamless planning across devices. Adding multiple secure payment methods would offer flexibility and enhance security. Furthermore, *Schedulio* could introduce virtual services, such as telehealth for medical appointments, and develop loyalty programs to boost customer retention for providers. Voice command integration, in-app messaging, and streamlined check-in processes through contactless technology would improve efficiency. This evolution would enable *Schedulio* to become a smart, adaptable, and comprehensive platform that meets diverse user requirements in the ever-evolving service industry.

## CONCLUSION

The app offers a seamless and intuitive experience for users, combining appointment booking with a variety of services such as haircuts and dental appointments. With its modern design, visually appealing user interface, and user-friendly features like sorting, filtering, and easy navigation, the app stands out as a reliable solution for scheduling and managing appointments. The integration of a movie ticketing system adds further utility, enhancing the overall user experience.

By focusing on key aspects such as a responsive layout, smooth user flows, and engaging visuals, the app aims to provide a professional and efficient platform. Whether it's for booking a dental appointment or exploring nearby cinemas, the app ensures that users have all the tools they need for a hassle-free experience.

With continuous updates and improvements, the app is poised to grow, offering more features and enhancing its functionality to meet the evolving needs of its users.

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