



TRIPTRACK

BOOK YOUR WAY WITH EASE

TripTrack

Final Report

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Table of Contents

1. Introduction	4
1.1. Domain Description	4
1.1.1. Problem Statement	4
1.1.2. Solution	4
1.2. Current System and Limitations	5
1.3. Goal & Objectives	6
1.3.1 Project Goals	6
1.3.2 Objectives	7
1.3.4. Assumptions	8
1.4. Process Re-engineered.....	8
2. Feasibility Study	9
2.1. Operational Feasibility.....	9
2.2 Economic Feasibility	9
2.2.1. Cost.....	9
2.2.2. Probable Revenue.....	10
2.3. Legal and Ethical Feasibility	10
2.4. Technical Feasibility	10
2.5. Schedule Feasibility	11
2.6. Social Feasibility	11
3. Requirements	16
3.1. Stakeholders / Actors	16
3.2. Functional and Non-Functional Requirements	17
3.2.1. Functional Requirements.....	17
3.2.2 Non-Functional Requirements	18
3.3. Scope of the Project	19
3.3.1. In Scope	19
3.3.2. Out of Scope	20
3.3. Constraints and Limitations	21
4. System Architecture	21
4.1. Components and Their Functionalities	21
4.2. Component Interactions.....	22

4.3. Component Diagram	23
5. System Diagrams	24
5.1. Use Case Diagram.....	24
5.2. Class Diagram	29
.....	29
5.3. ER Diagram.....	30
5.4. Activity Diagrams	31
6. Completeness of the project.....	52
6.1. Functionalities completed	52
6.2. Functionalities yet to complete	55
6.3. Individual Contribution	56

1. Introduction

1.1. Domain Description

1.1.1. Problem Statement

Booking long-distance buses and accessing schedules in Sri Lanka is currently challenging and inefficient. Passengers must contact bus companies directly to reserve seats, often resulting in unavailable seats or unknown departure times. This manual process, reliant on phone calls or office visits, is time-consuming and prone to errors. Limited office hours further complicate the booking process for busy commuters. Additionally, the information provided is often unreliable, leading to conflicting or outdated details about seat availability and departure times. Without real-time updates, travelers may miss their buses or be stranded without a seat, especially during peak travel times or holidays. The current system also lacks alerts or reminders for departure times, causing passengers to miss their buses. Inaccuracies in communication can result in double-booking or unavailable reserved seats, leading to confusion and frustration. Passengers may be forced to wait for the next bus, which is particularly inconvenient for long-distance travelers or those with children. A centralized, automated booking platform would provide real-time updates, accurate schedules, and a streamlined booking process, significantly improving the travel experience for long-distance commuters in Sri Lanka.

1.1.2. Solution

The 'TripTrack' Highway Bus Management and Booking System introduces change into the realm of bus transportation by pointing out the inefficiency in the current booking and scheduling system. The project lies in the context of long-distance bus services in Sri Lanka, where commuters have to face many challenges that include unreliable schedules, manual bookings, and no real-time information. It foresees a centralized automated system that is user-friendly; it would make the facilitation of passengers, bus owners, and operators easier, improving efficiency and enhancing satisfaction in the travel system of public transportation.

1.2. Current System and Limitations

Manual and Inefficient Booking Process:

The passengers need to call the bus operators or personally visit the offices to book seats. This is time-consuming and gives rise to a lot of human errors, such as missing a booking or taking a double booking. Office hours restrict accessibility for working professionals, therefore causing frustration and inconvenience.

Unreliable and Outdated Information:

Lack of complete and correct information about seat availability and schedules. Due to this, changes in the departure times or cancellations largely remain unknown to passengers resulting in delays or missed journeys.

Lack of Real-Time Updates and Alerts:

The current system does not inform against delays or cancellations or changed schedules. Passengers are not informed well in time for reminders, leading to missed departures.

Communication Gaps:

Less number of communication channels between passengers and bus operators affect the flow of crucial information. There are no mechanisms to notify passengers about bus delays or alternative routes during emergencies.

No Digital Tools for Passengers:

Existing systems lack features to compare routes or view cost-effective travel options. There are no options for passengers to track their booking history or view real-time bus tracking.

Lack of Fleet and Schedule Management:

Fleets and schedules are maintained manually by bus operators/owners, which is very inefficient and prone to errors.

1.3. Goal & Objectives

The bus management system project aims to enhance the efficiency, convenience, and reliability of bus operations. By integrating advanced functionalities, the system will provide passengers with essential tools and information to improve their travel experience. The following goals outline the key benefits that the system seeks to deliver. Our platform will allow passengers to conveniently book bus tickets and check seat availability in real-time through an online platform. Passengers can select their preferred bus based on schedule, route, and availability, ensuring a tailored travel experience. Additionally, the platform will provide efficient scheduling and routing to minimize travel time and ensure timely arrivals, helping passengers manage their time effectively.

TripTrack will overcome the shortcomings in the manual process by developing a novel, integrated bus management and booking platform. It will provide easy access and more dependable and efficient means for passengers, bus operators, and other stakeholders.

1.3.1 Project Goals

Ease of Booking:

To offer passengers a web-based real-time reservation with immediate confirmation. Provide diversified means of payment, even with cards, for added convenience.

Centralized Management:

The system allows the bus operators to manage their fleet, schedules and passenger information from a single screen. TripTrack allows system administrators to monitor the whole operation and respond accurately to all customer support inquiries. Improved SMS or Email notifications to passengers, conductors and drivers in case of delays, changeovers in schedule, and cancellations. This established a transparent and credible flow of information throughout the exchange.

Passenger-Focused Features:

TripTrack provides real-time information about the availability of seats, schedules, and estimated time of arrival.

Feedback and Transparency:

System implements a rating-review mechanism to assure a better quality of service and gain passenger trust. It allows bus owners to collect and respond to feedback regarding improving their services.

Role-Based Access:

Develop an application that integrates multiple roles; for example:

Passengers : for booking and managing travel plans.

Conductors/Drivers : for verifying tickets and managing schedules.

Bus Owners : for fleet management and performance tracking.

Admins : for overseeing operations and managing accounts.

1.3.2 Objectives

The main goal of TripTrack is the elaboration of a user-friendly, centralized platform aimed at easing and enhancing the bus travel experience among all the involved stakeholders, which include passengers, conductors, drivers, bus owners, and system administrators. The platform shall solve modernization needs of the highway bus management system with respect to the inefficiency of the prevailing manual procedures, thereby offering a seamless, efficient travel management solution.

User friendly platform for passengers:

A core aspect of the system is to provide a user-friendly interface where passengers can easily access schedules, compare routes, and make bookings on a real-time basis. The user interface design will be such that it will be comfortable for both advanced computer users and beginners; thus, it will be well understandable and accessible. By doing this, the system will definitely be very inclusive and get rid of the time-consuming and error-prone methods of manual bookings.

Enhancing operational efficiency:

Another critical objective is ensuring operational efficiency. Automation of vital processes such as scheduling, fleet management, and bookings reduces errors and delays in the system. Bus operators and owners will also be provided with tools that will enable them to handle their buses, routes, and schedules with ease, therefore improving service delivery and saving precious time in that respect.

Real time updates and notifications

The platform also prioritizes real-time updates and notifications, ensuring that passengers are informed about any delays, cancellations, or schedule changes. This real-time communication extends to drivers and conductors, allowing for better coordination and minimizing disruptions during operations. By

implementing notifications through SMS and email, the system keeps all users up-to-date with minimal effort.

Ensuring security and privacy

The platform is basically hinged on security and privacy. There are strong authentication mechanisms in place, together with protocols for the protection of sensitive data. All transactions involving payments will be well-secured through an integrated payment gateway. This instills confidence and trust in passengers as they have several ways of paying for their trips.

Collaboration and feedback mechanisms

Collaboration and feedback are one of the most vital keys to improving the travel experience. The system opens communication channels between passengers, conductors, drivers, and admins with ease. Additionally, rating and reviewing options allow passengers to share their reviews on the services that bus owners can utilize to develop their service offerings based on real data. The system inherently fosters trust and satisfaction by developing an atmosphere of transparency and accountability among all its users.

Delivering measurable results

Finally, the online portal is made to ensure accountability through measurable results. Admins and bus owners can monitor sales, analyze fleet performance, and gain reports on passenger satisfaction through reports and analytics. These will be helpful for the stakeholders in decision-making and offering continuous improvements to the platform and the services offered.

In conclusion, TripTrack is about changing how highway buses are managed through a technological user-centric platform with the utmost operational excellence to bring security, efficiency, and collaboration together in one ecosystem for long-distance travel.

1.3.4. Assumptions

- For the interim implementation we have assumed that the price for a ride between two bus halts is calculated using the price per kilometre.

1.4. Process Re-engineered

Based on the feedback from the interim panel, we have refined the booking process to enhance user experience and streamline efficiency. Additionally, we have removed the employee management feature, as it diverged from the core objectives of our project.

2. Feasibility Study

The feasibility study is done on the following aspects

- Operational Feasibility
- Social Feasibility
- Technical Feasibility
- Economic Feasibility
- Schedule Feasibility
- Legal and Ethical Feasibility

2.1. Operational Feasibility

This section assesses how well our proposed solution meets user requirements and addresses the issues in the current system. Ensuring operational feasibility is critical, as users will be reluctant to adopt a system that does not meet their needs. Presently, most bus seat bookings and schedule information are handled offline via phone calls, leading to the problems outlined in the problem statement. Our system aims to resolve these issues by efficiently managing schedule information and the seat booking process through a web-based application. To use our system, users will need an internet connection and a suitable device. Additionally, they must have basic IT skills and be familiar with making online payments. This ensures that the transition from the current offline methods to our online system will be smooth and effective. Because there is no need to provide special training to use the system, the project is operationally feasible.

2.2 Economic Feasibility

This section is the place where we focus on the cost estimations and revenue of our solution.

2.2.1. Cost

Since the team is using an open-source technologies for the development process, there are be no cost for purchasing software. As the team is not be making profits, the development itself is cost-free. For hosting the web application and database, free web hosting options or low-cost shared hosting packages can be used initially. However, as the user base and platform grow, a more expensive hosting package may be required. The website will require a domain name, which will cost around Rs. 8000 annually for a ".lk" domain. Even though sending emails can be done for free an SMS gateway is implemented in the application to send SMS notifications to users, costing Rs. 3.0 + tax

per SMS. And there will be payment gateway transaction fees for secure payments. We use open-source technologies and other free tools like Visual Studio Code for the development of the product. They won't require any paid licenses so the cost for those is zero.

2.2.2. Probable Revenue

Revenue can be generated by selling the system to a client or through maintenance fees. Additionally, we can include facilities for advertisements within the platform to generate further income.

In conclusion, the cost of building and maintaining the web application is affordable and economically feasible, with multiple avenues for generating revenue.

2.3. Legal and Ethical Feasibility

This section measures the legal and ethical issues we would be facing when building and implementing our platform and our countermeasures for that.

- All user identity is verified when registering and each login.
- Personal information are protected, and user passwords will be hashed.
- The service records collected and stored related to users are not exposed to a third party under any circumstances.
- Application is built following the license of the software technologies that are used.
- The refund policies will be clearly defined to the user before payments are made.
- Schedule details are communicated accurately.
- Building and deploying the system does not break any laws.

2.4. Technical Feasibility

This section measures the flexibility of the practical implementation of building our web-based platform by using the selected technical solutions. Mainly, the front end of the web application is built using HTML for the structure, CSS for styling and JavaScript for changes and creating forms. PHP and the Apache HTTP server (to run PHP applications) is used for the backend with MySQL as the data store. The system will rely on a SMS gateway and a simple mail transfer protocol (SMTP) to send notifications to users through SMS and emails and a payment gateway for receiving payments.

Additional tools used,

- Figma for User Interface design
- GitHub to collaborate as a version control tool

The team has a basic understanding of these technologies prior to and during the development of the project. Although it is a challenging task, the allocated timeline provides us with ample opportunity to deepen our understanding before beginning the implementation phase. This time frame allows us to gain a substantial amount of technical knowledge to ensure a successful implementation.

2.5. Schedule Feasibility

The project spans a duration of 9 months.

Estimated man-hours for project completion:

Weekdays working hours: 5 hours

Weekend working hours: 5 hours

Number of group members: 4

Number of weeks: 36

Total man-hours = $(5 + 5) * 4 * 36$ hours = 1,440 hours

As we are in the 4th month of the project 90% of the User Interfaces are completed and the main functionalities of the system are fully functional. Given the identified features and scope, it is feasible to complete the remaining tasks of the SDLC and finish the development of the product by mid-April 2025.

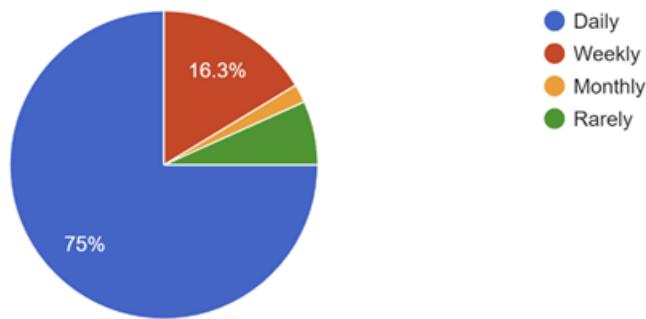
2.6. Social Feasibility

There is a significant demand for improved public transportation solutions in Sri Lanka. Commuters, long-distance travelers, and bus operators have shown a strong interest in enhancing their travel experiences. We conducted a public survey to gauge the community's interest in an integrated bus management and booking system. The final invoice must indicate the date of arrival of goods at the discharge port. With over 100 responses, the majority expressed a positive outlook on the proposed "TripTrack" system. Respondents highlighted the need for a reliable and accessible platform that simplifies the booking process and provides real-time information. The feedback indicated a strong willingness to adopt such a system, emphasizing its potential to improve daily commuting and travel experiences.

Below are some questions and feedback we got

How often do you use bus services?

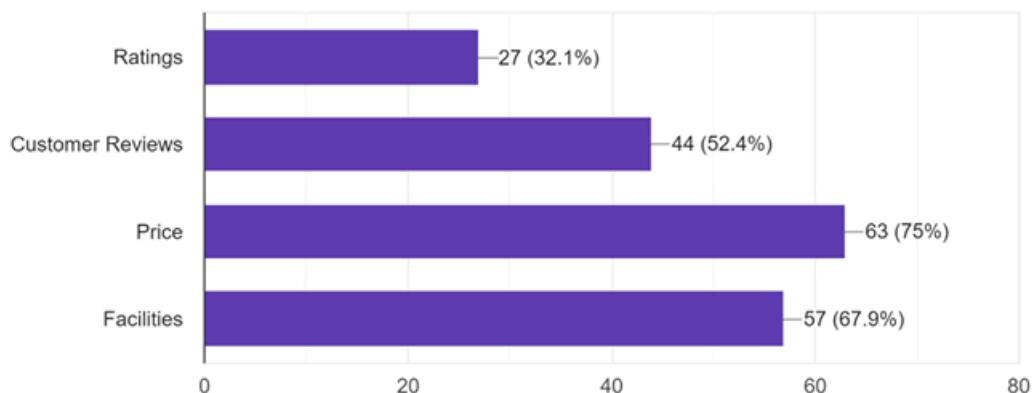
104 responses



The pie chart illustrates the frequency of bus service usage, with a significant 75% using the services daily, 16.3% weekly, and only a small fraction monthly or rarely. This data underscores the heavy reliance on bus transportation for daily commuting, indicating a strong potential demand for "TripTrack," a system designed to enhance the convenience and reliability of bus travel in Sri Lanka.

What factors do you consider when booking a bus

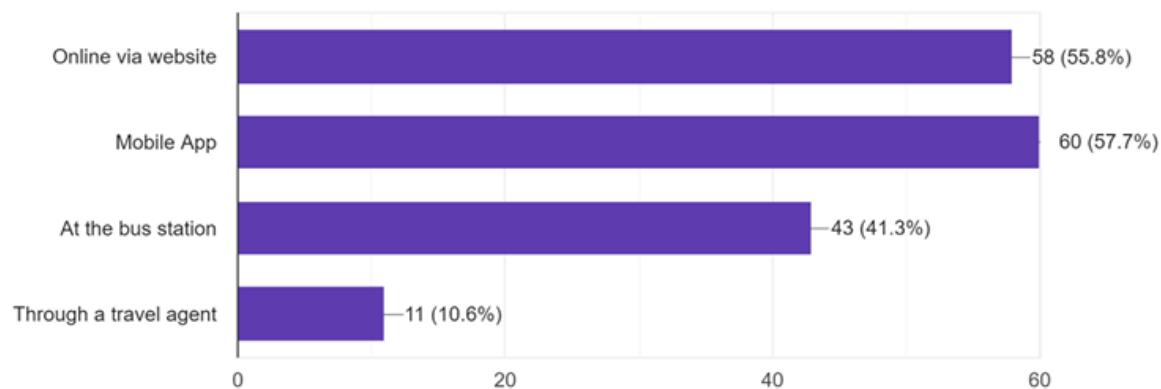
84 responses



The most important factor is price, considered by 75% of respondents, followed by facilities at 67.9%, customer reviews at 52.4%, and ratings at 32.1%. This indicates that cost, amenities, and user feedback are the primary considerations for passengers when choosing bus services, highlighting areas "TripTrack" should focus on to meet user preferences.

How do you prefer to book your tickets?

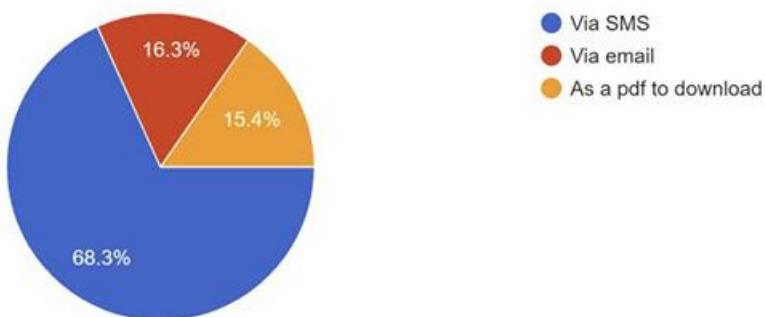
104 responses



The most popular methods are using a mobile app (57.7%) and booking online via a website (55.8%). Booking at the bus station is also a common choice, preferred by 41.3% of respondents, while only 10.6% prefer booking through a travel agent. This indicates a strong preference for digital booking methods, highlighting the importance of having robust online and mobile booking options in the "TripTrack" system.

How would you like to receive the e-ticket

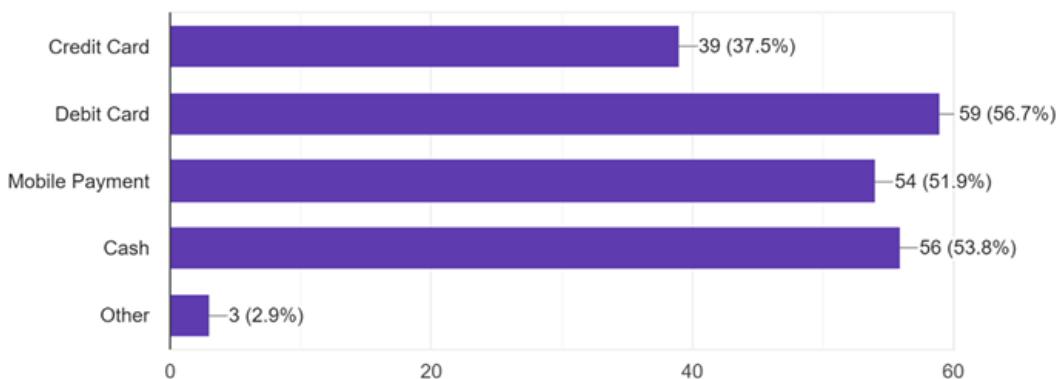
104 responses



The pie chart illustrates the preferred methods of receiving e-tickets. The majority, 68.3%, prefer receiving e-tickets via email, represented by the largest blue section. The second most popular method is downloading the e-ticket as a PDF, chosen by 16.3% of respondents, shown in orange. The smallest section, in gray, represents 15.4% of respondents who prefer receiving e-tickets via SMS. This data helps businesses understand customer preferences for digital ticket delivery.

If there is a booking system for the buses what is your preferred payment method

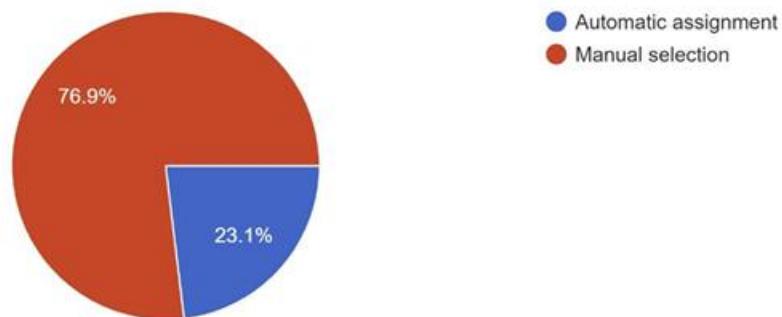
104 responses



The bar graph shows preferred payment methods for a bus booking system. Debit Card is the top choice with 59 responses (56.7%), followed by Cash (56 responses, 53.8%), and Mobile Payment (54 responses, 51.9%). Credit Card is preferred by 39 respondents (37.5%), while only 3 respondents (2.9%) chose Other methods. This highlights the need to include both traditional and digital payment options in our system for user convenience.

What is your preferred seat selection method

104 responses



The pie chart shows the preferred seat selection methods. The majority, 76.9%, prefer manual assignment, represented by the larger red section. The remaining 23.1% prefer automatic selection, shown in the smaller blue section. This data highlights a strong preference for manual processes in seat selection among the group surveyed. Therefore we have implemented the system so that the passenger can select the preferred selection when booking.

3. Requirements

3.1. Stakeholders / Actors

- Guest Customer
- Registered Customer
- System Admin : (Super Admin and Regional Admin)
- Conductor/Driver

Guest Customer

- Guest users shall be able to register.
- They can view bus availability.
- Guest users can filter schedules by departure & arrival time, and location.
- They can view bus details.
- They can book seats.

Registered customer

- Registered users can log in to the system.
- Logging out from the system is possible for users.
- Passwords can be changed if forgotten.
- Booking a seat is available and preferred seats can be chosen.
- Users have the option to choose a payment method via online or by cash.
- Viewing booking history is an option.
- Notifications can be received.
- Users can cancel bookings.
- Refunds are given upon booking cancellation.
- Editing their profile is allowed.
- Users have access to view bus availability.
- Schedules can be filtered by departure & arrival time, and location.
- Viewing bus details is accessible.

System Admin

- The system admin can log in to the system.
- Management of user accounts is within the system admin's capability.
- Viewing user details is accessible to the system admin.
- Customer support tasks can be performed by the system admin.
- Sending notifications is a function of the system admin.
- Responding to reviews and complaints is part of the system admin's role.
- Informing about bus delays and changes is managed by the system admin.
- Updating bus schedules is a task for the system admin.
- The system admin can disable/enable user accounts.

Conductor/Driver

- Conductor/Driver can log in to the system
- They can request leave.

- They can view their assignments to the schedules
- The conductor can verify the tickets using the QR code scanner
- They can inform the admins regarding bus delays

3.2. Functional and Non-Functional Requirements

3.2.1. Functional Requirements

The functional requirements define the specific features and capabilities of the **TripTrack** system, ensuring it meets user needs.

User Authentication and Management

- Users (guest and registered) can register, log in, and manage their profiles.
- Password recovery via email for registered users.
- Role-based access control.

Bus Details and Booking Management

- Display bus schedules, routes, and availability.
- Seat selection interface with real-time updates for registered users.
- Booking confirmation via email and SMS.
- Option to cancel bookings with applicable policies (e.g., cancellation fees).
- Registered users can view their booking history.
- Notifications for booking confirmations, cancellations, and schedule changes via SMS/email.

Schedule and Fleet Management

- Admins and bus owners can add, update, or delete bus schedules.
- Admins can assign buses, conductors, and drivers to routes.
- System displays bus details, including departure/arrival times, routes, and availability.

Payment Processing

- Integration with a payment gateway for online transactions (credit/debit card).
- Support for cash payments during travel.
- Automatic calculation of ticket costs based on selected seats.

Notifications

- Real-time notifications for passengers about delays, cancellations, and booking confirmations via email and SMS.
- Notification to conductors and drivers about updated schedules or assignments.

Ticket Verification

- QR code generation for booked tickets.
- Conductors can scan and verify QR codes for passenger check-ins.

Feedback and rating

- Passengers can rate and review bus services after completing trips.
- Admins and bus owners can respond to feedback to improve service quality.

Reporting and Analytics

- Bus owners can view monthly sales reports.
- Admins can generate reports on user activity, feedback, and revenue.

Customer Support

- Admin provide support to users for queries and issues.

3.2.2 Non-Functional Requirements

The non-functional requirements ensure that the system operates efficiently, securely, and reliably

Performance

- The system must provide consistent and reliable performance with optimized database queries and asset management

Usability

- The user interface should be intuitive and user-friendly to accommodate users with varying levels of technical expertise.

Security

- Implement role-based access control (RBAC) to restrict data access.
- Ensure user data protection through hashing passwords and secure payment processing.
- Provide timely notifications in case of data breaches.

Availability

- The web application should maintain high availability and uptime, with backup solutions in place for server failures.

Portability / Interoperability

- The application should be platform-independent, ensuring compatibility across different devices and browsers.

Maintainability

- The system should be well-documented and modular, following coding best practices to facilitate future updates and maintenance.

By fulfilling these functional and non-functional requirements, TripTrack will deliver a robust, user-friendly, and efficient bus management system.

3.3. Scope of the Project

3.3.1. In Scope

User Authentication and Management

- User registration, login, and profile management.
- Password recovery via email.
- Users can enter locations and view suggested locations.
- Filters for buses based on departure, arrival times and location.

Bus Details and Booking

- Display bus details (route number, departure and arrival times, starting location, distance).
- Seat booking option for available buses.
- Payment gateway integration for card payments.
- Seat selection interface (future objective: bus layout display).

Booking Management

- Registered users can view booking history.
- Users can cancel bookings up to 5 hours in advance with a refund fee.
- Automated email/text message with booking confirmation and receipt.
- Email and SMS alerts for booking confirmations, cancellations, and schedule changes.

Admin Functions

- Admin interface to manage buses, employees, and drivers.

- Handling customer support queries.
- Creating other employee accounts

Conductor / Driver Functions

- Verify bookings
- Inform delays

Notification

- Automated email/text message with booking confirmation and receipt.
- Email and SMS alerts for booking confirmations, cancellations, and schedule changes.

3.3.2. Out of Scope

Advanced Payment Methods

- Integration with payment methods other than cash and card (e.g., digital wallets)
- Integration with a real payment portal

Third-Party Integrations

- Integration with external travel booking platforms.

Offline Functionality

- System features and access in offline mode.

Advanced Analytics

- Detailed analytics and reporting tools for bus companies and admins.

Mobile Applications

- Dedicated mobile apps for iOS and Android (unless specified as a future enhancement).

Real-Time Traffic Data

- Incorporation of real-time traffic conditions into route planning.

Live tracking

- Track live bus locations and estimated arrival times.

3.3. Constraints and Limitations

- Only the cities available within the bus company will be shown in the filter.
- Cancellation policy

12 hour(s) before travel 20%

6 hour(s) before travel 50%

4. System Architecture

The TripTrack system is designed based on the Model-View-Controller (MVC) architecture. This architectural pattern separates the application into three interconnected components, which allows for efficient development, scalability, and maintainability.

4.1. Components and Their Functionalities

The TripTrack system is composed of many integrated components, each responsible for given functionalities that assure a seamless user experience. The User Management Component manages users' registration, login, and role-based access: passenger, conductor, driver, admin, and bus owner. The Booking Management Component enables seat selection, ticket bookings, and cancellations, integrating with the Payment Gateway Component for secure transaction processing. Also, the Schedule and Fleet Management Components allow the admin or owners of the buses to easily make changes in the schedules and assign buses for any particular route. These interact well with the Notification Component, which sends real-time alerts related to confirmations of bookings, changes of schedule, and delays to passengers, conductors, and drivers.

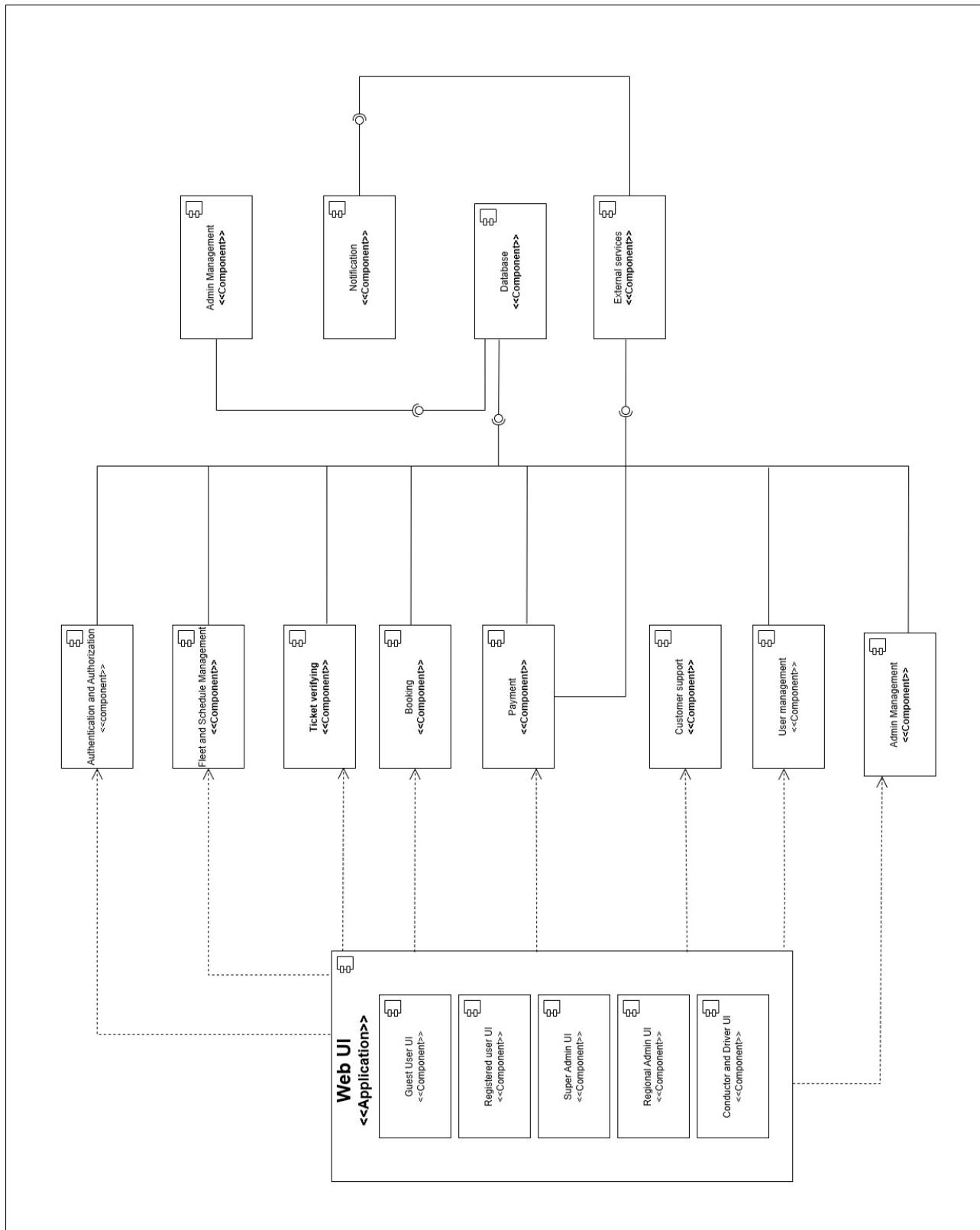
The other key components include a Ticket Verification Component, in which QR codes are used to validate passengers' tickets at check-in times; a Feedback Component, where passengers rate and review services, hence continuous service improvement. The Analytics and Reporting Component provides admins and bus owners with insights on sales, trends, and user activity for informed decision-making. Moreso, ensuring smooth interactions amongst these components, say between booking, notification, and verification of tickets, TripTrack realizes a modular, scalable, efficient architecture for improvement of the travel experience for all stakeholders.

4.2. Component Interactions

The TripTrack system needs fluent interaction among its components to function properly as an efficient and user-oriented system. For example, the User Management Component interacts with the Booking Management Component in validating the user's role and assigning bookings to a particular account. This ensures that registered users can see their booking history, while admins manage user-related operations. In the same way, the Booking Management Component communicates with the Payment Gateway Component for processing transactions in a secure manner and updating booking records concerning payment status. Once bookings or schedule updates get finalized, the Notification Component makes sure passengers, conductors, and drivers receive real-time alerts through SMS or email.

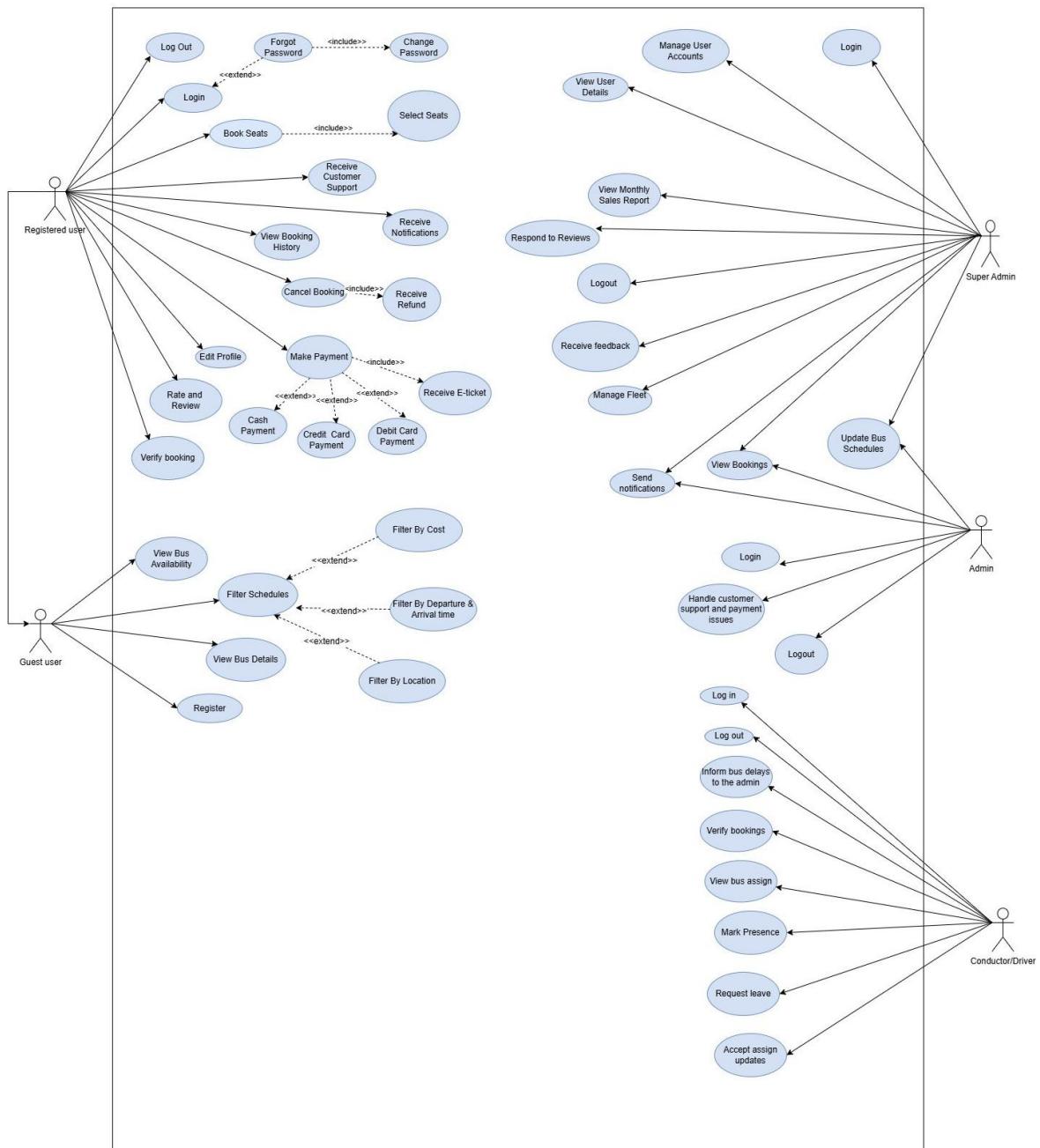
Other major interactions include the interaction of the Schedule Management Component with the Fleet Management Component for bus allocations to routes and updating of their availability. The Ticket Verification Component interacts with the Booking Management Component to verify the QR code and marks a passenger as checked-in, keeping the consistency of booking information. Feedback from the Feedback Component is taken up by the Analytics and Reporting Component to provide meaningful actionable insights for service improvement. These coordinated interactions enable TripTrack to function as a unified system, ensuring seamless operations and richer user experiences.

4.3. Component Diagram

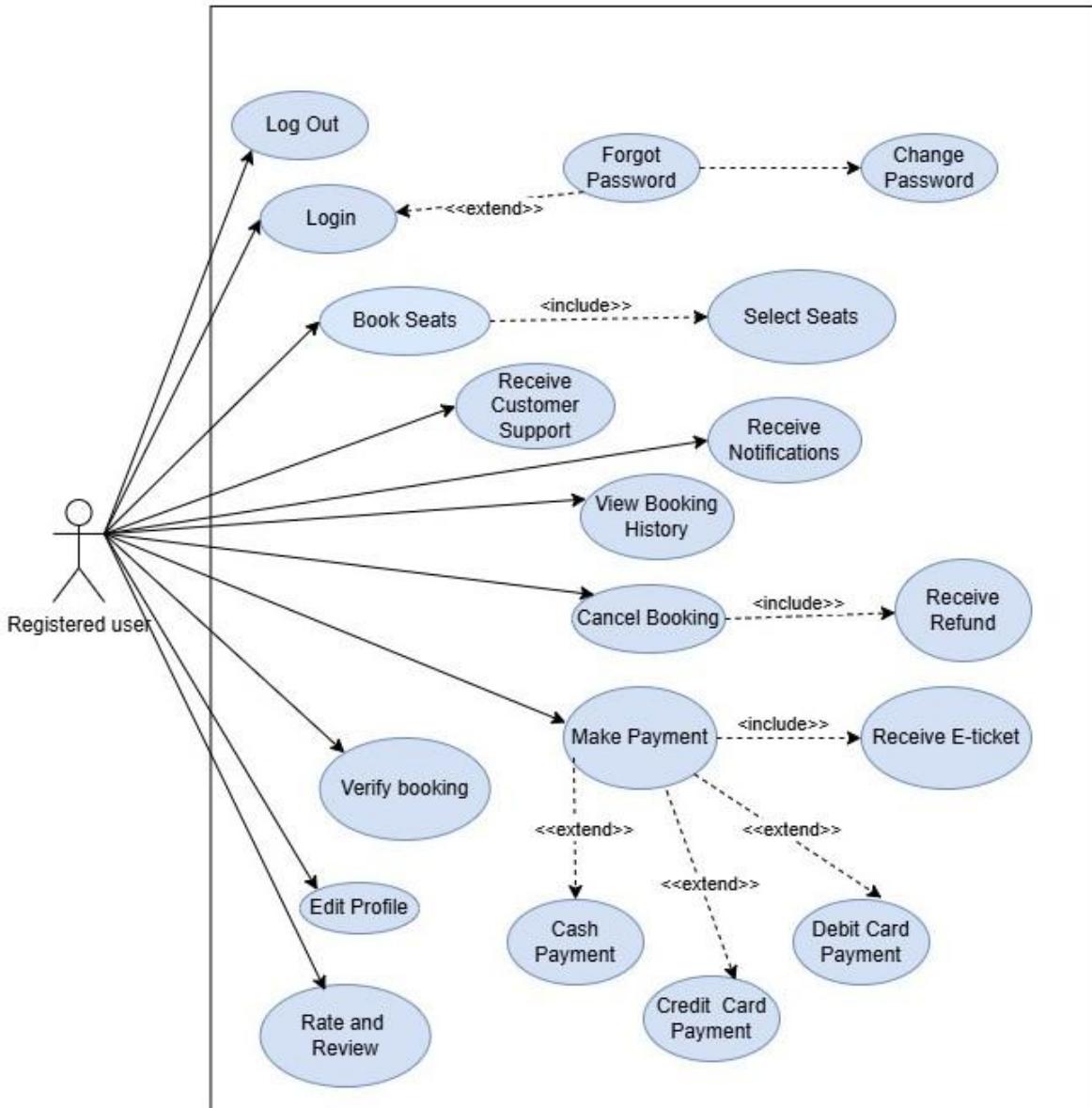


5. System Diagrams

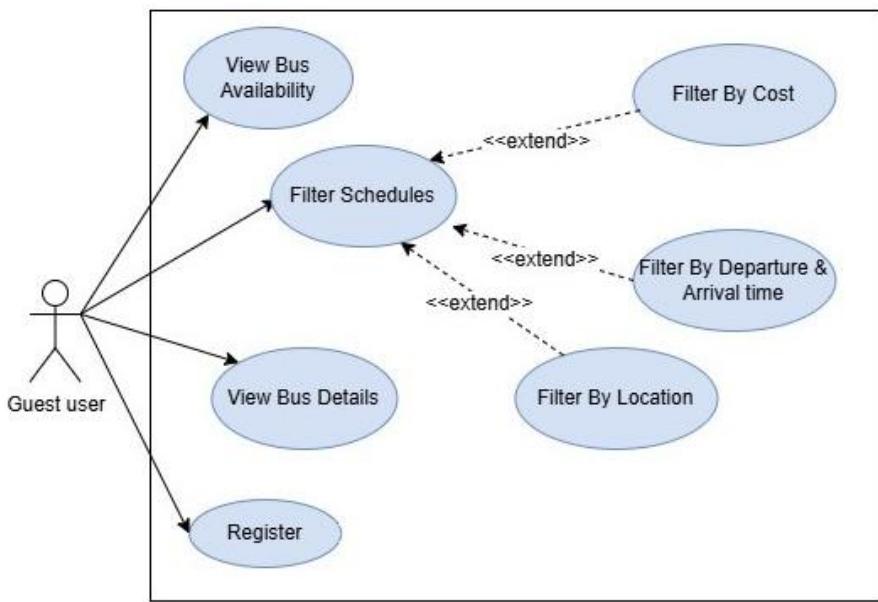
5.1. Use Case Diagram



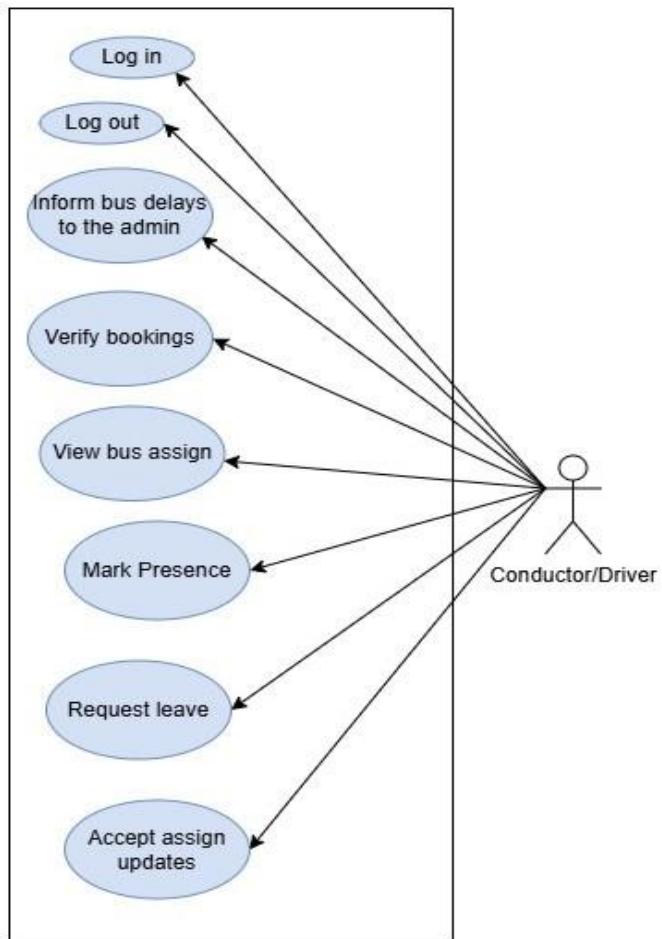
Registered User



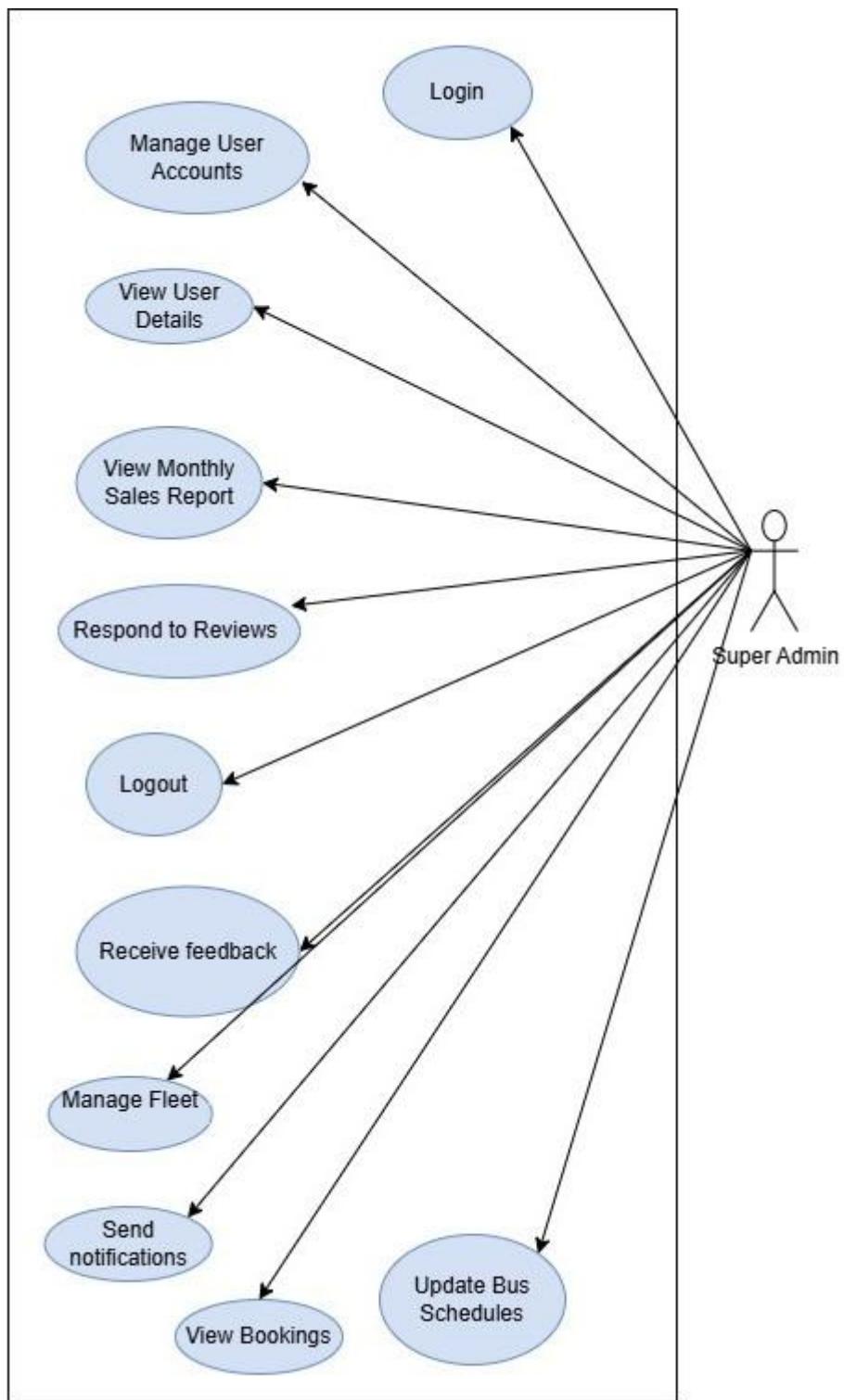
Guest User



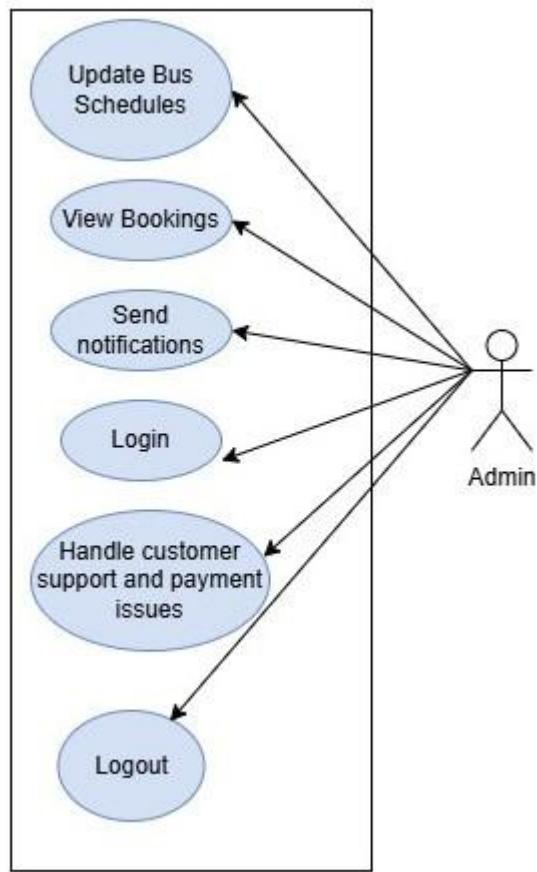
Conductor / Driver



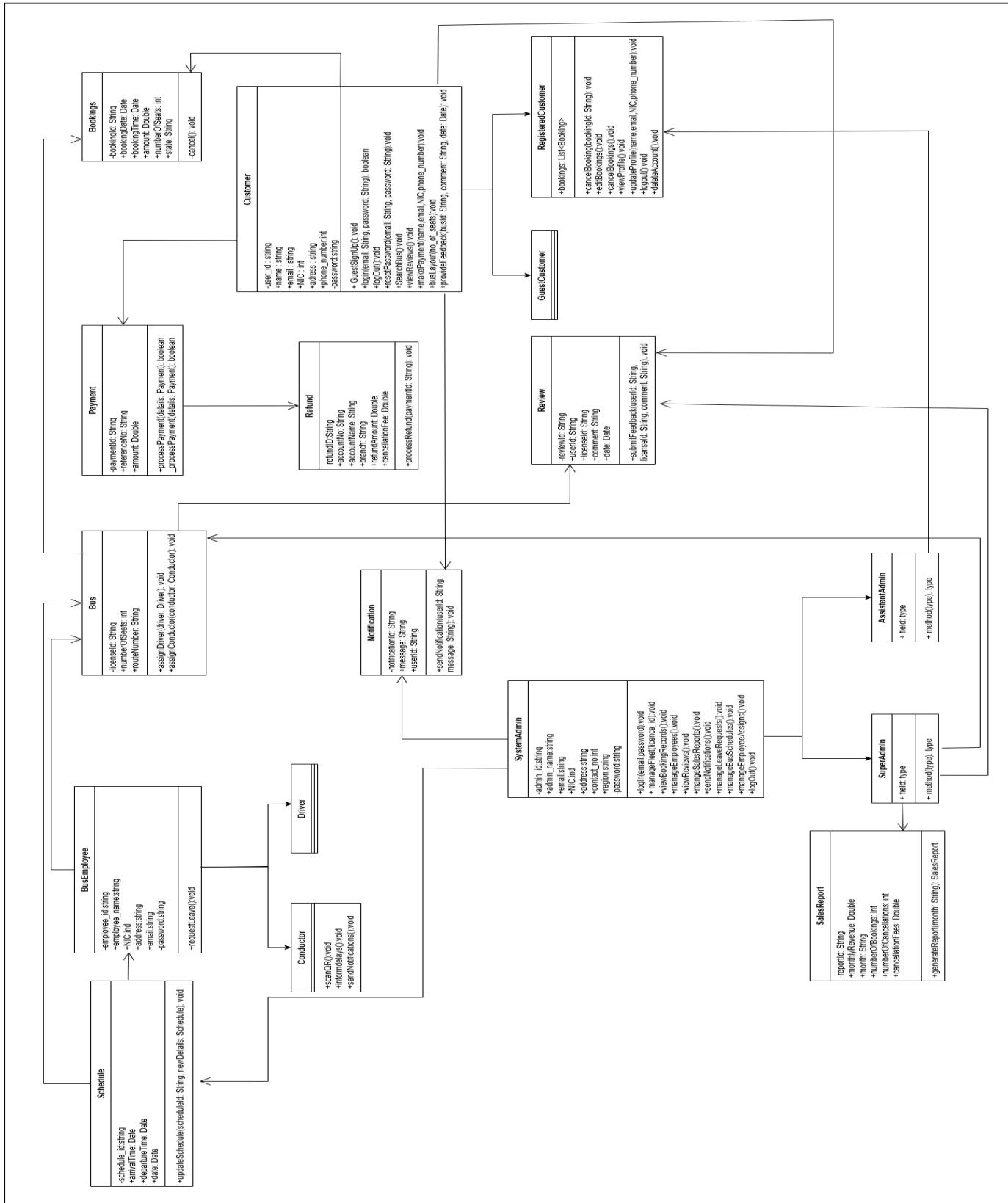
Super Admin



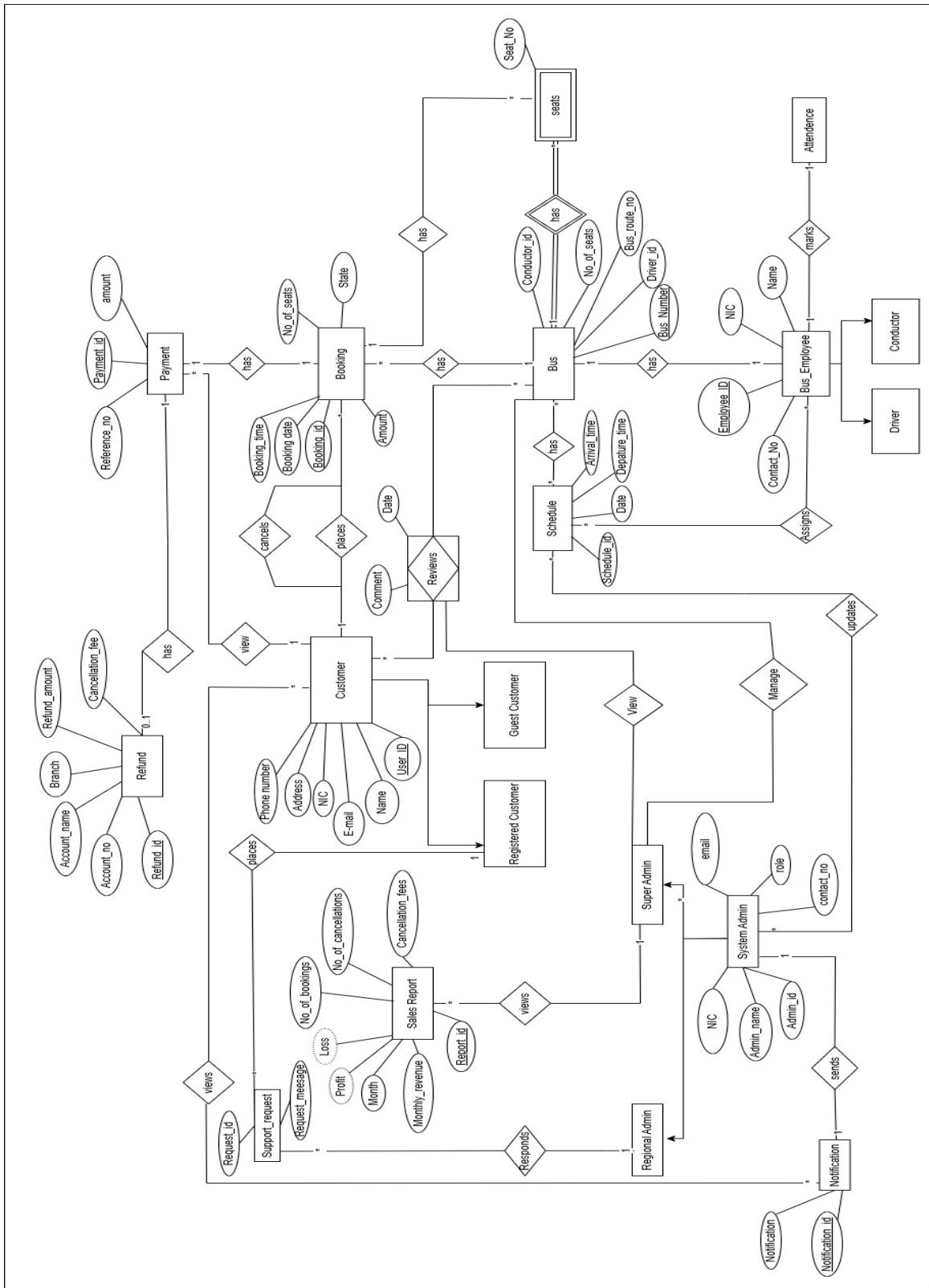
Regional Admin



5.2. Class Diagram



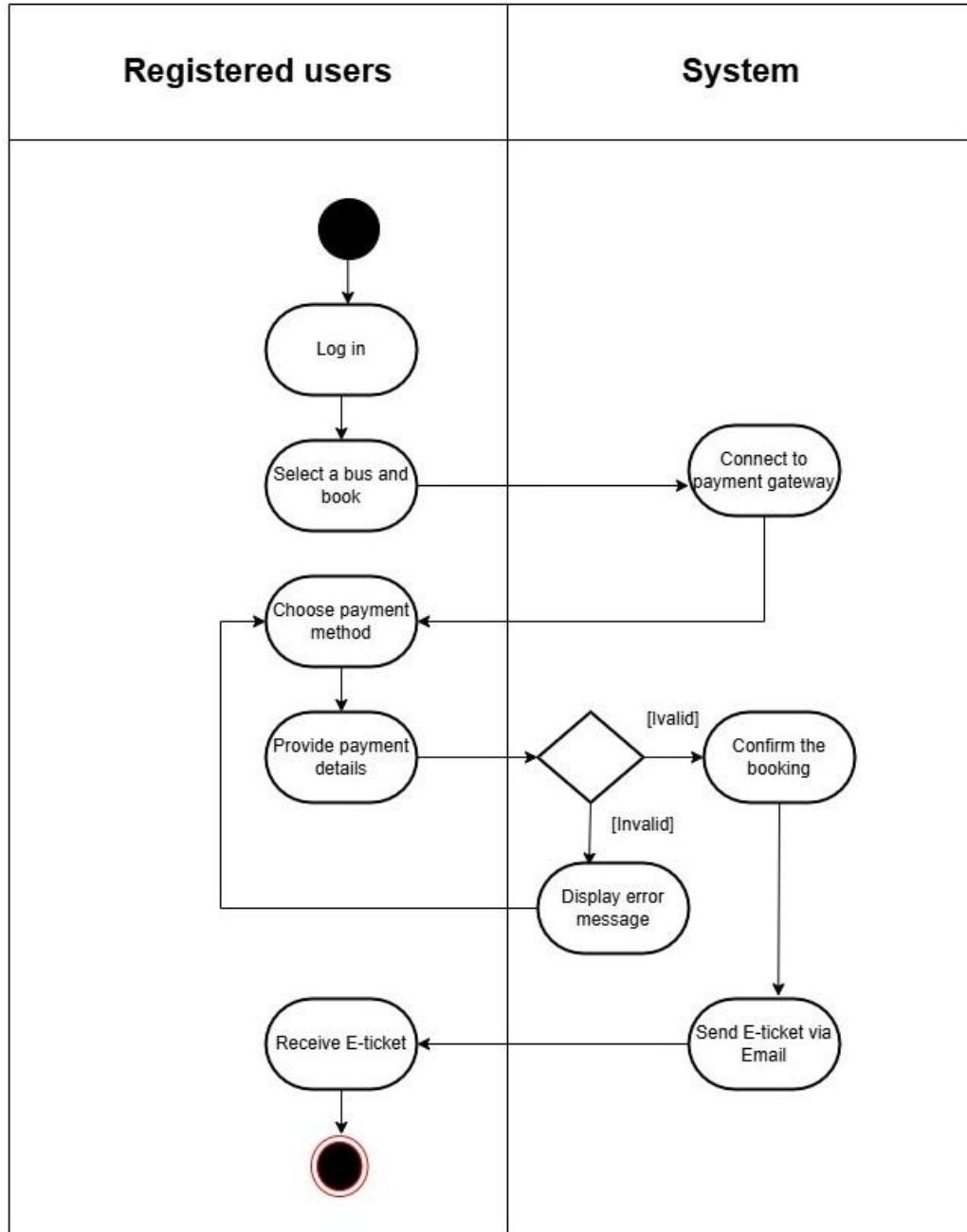
5.3. ER Diagram



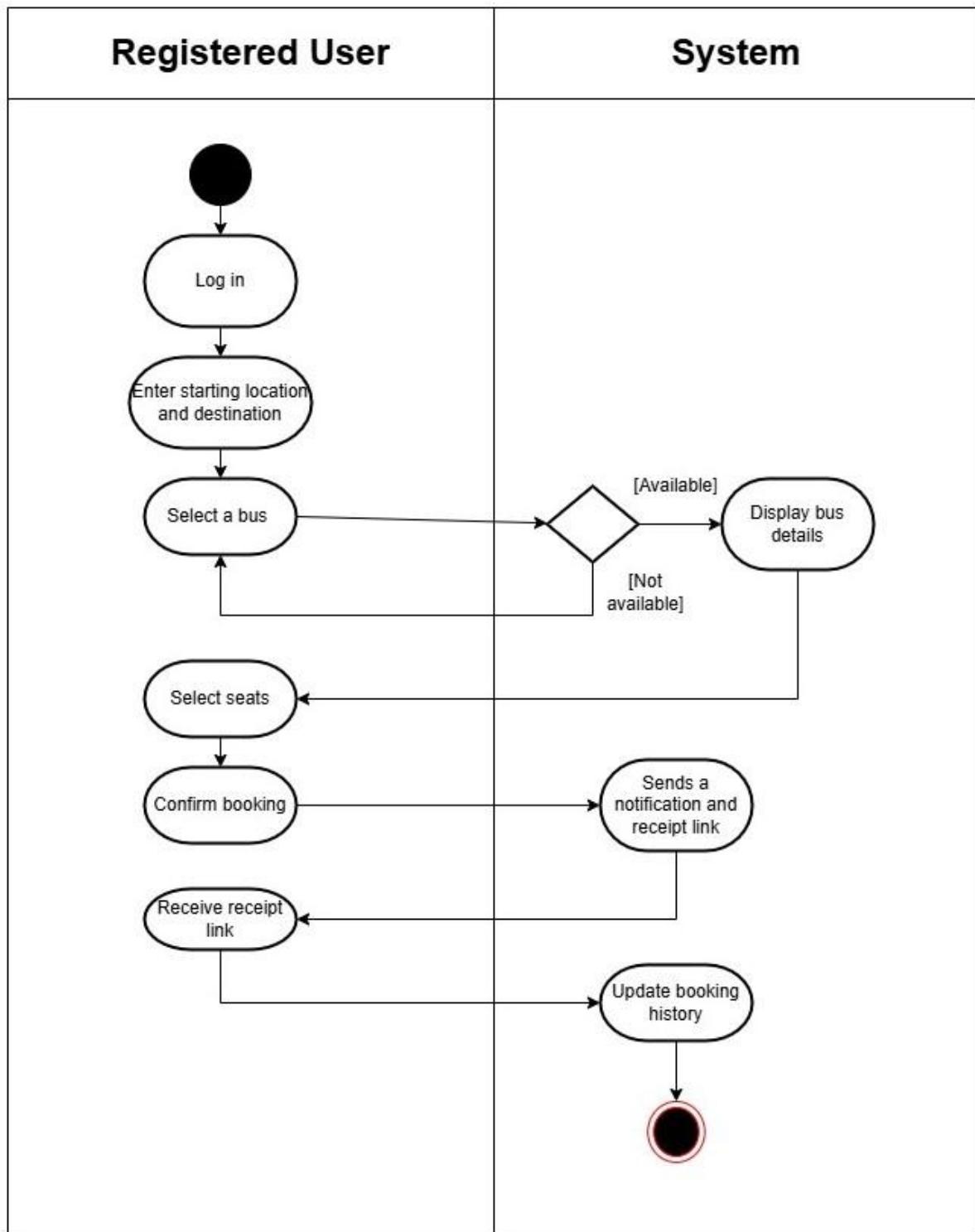
5.4. Activity Diagrams

Passenger

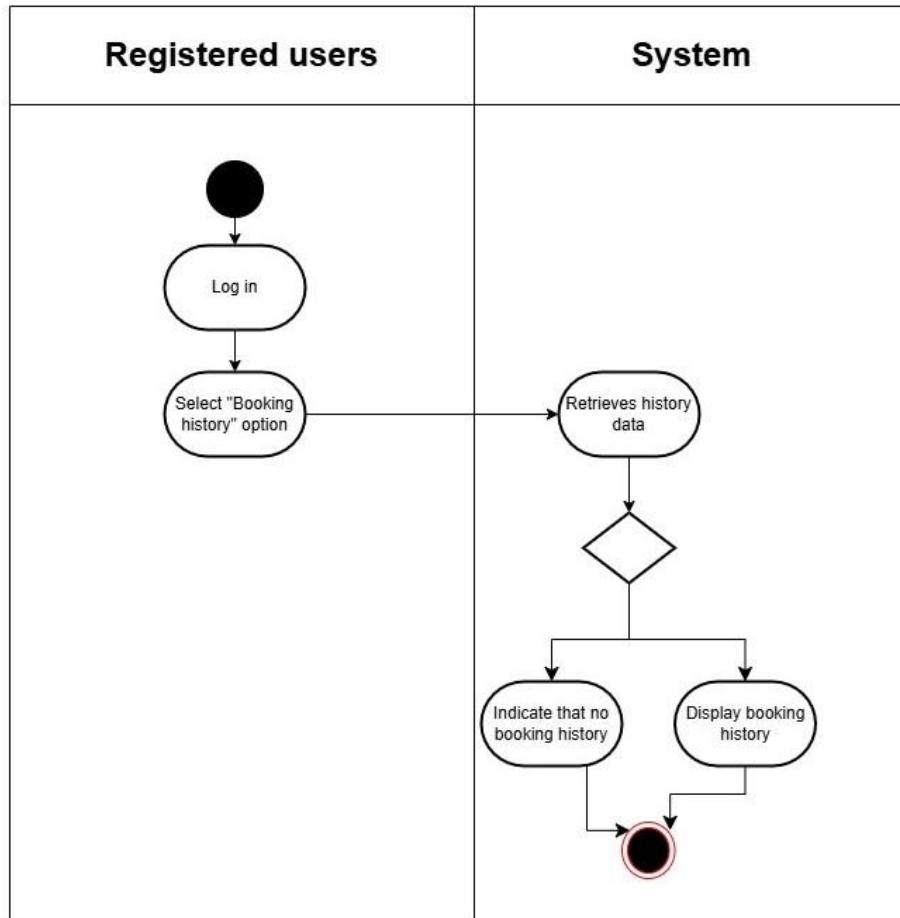
Make payment



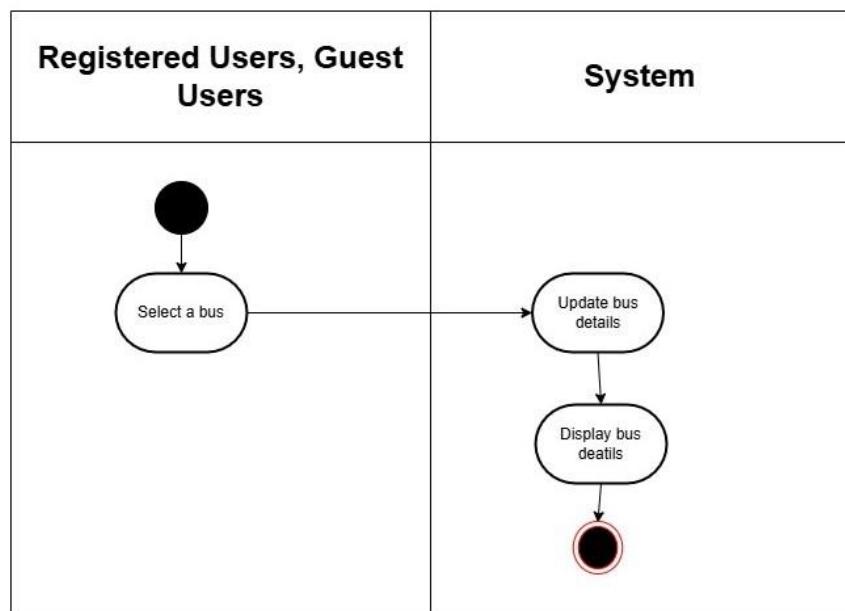
Book a seat



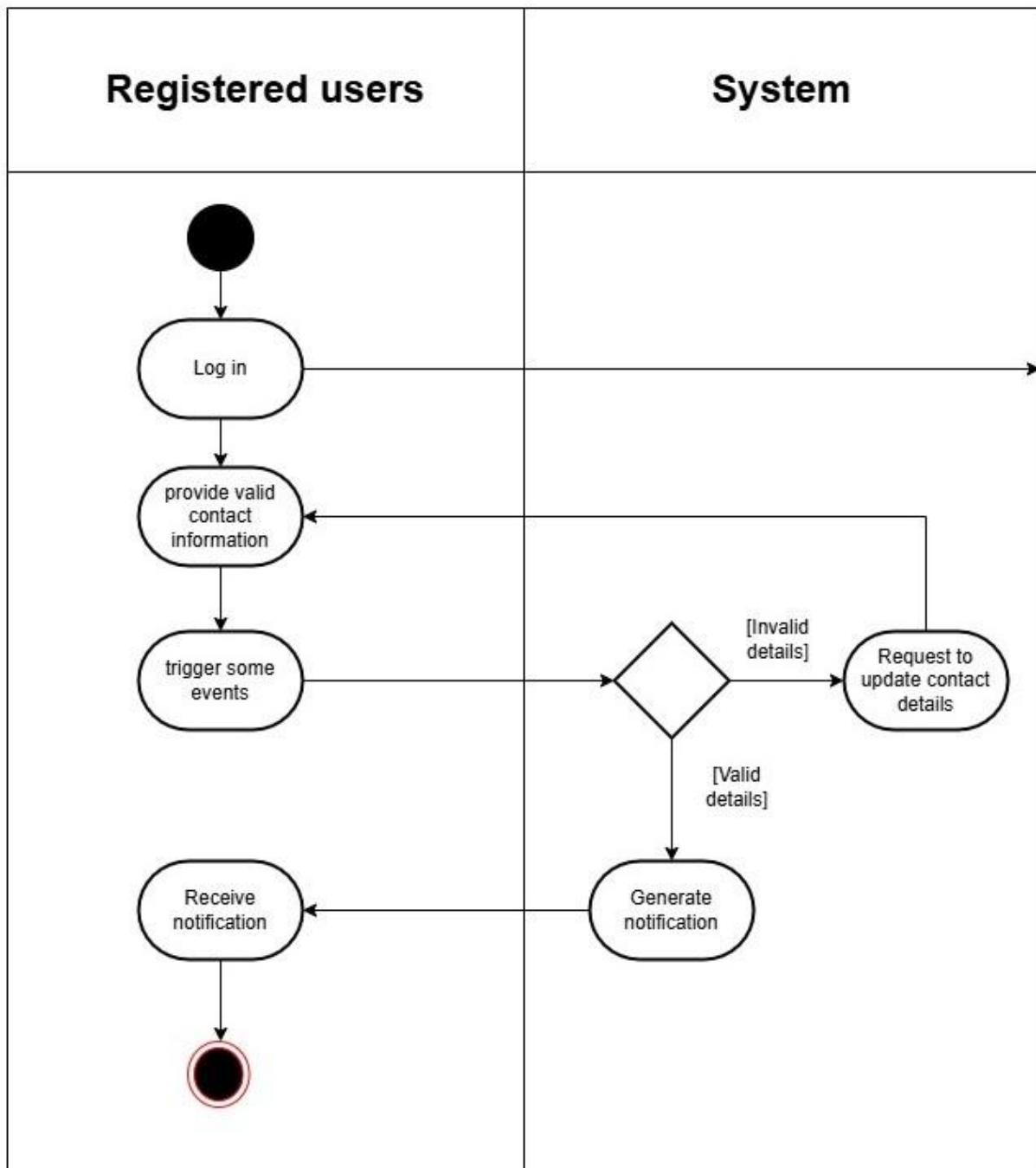
View booking history



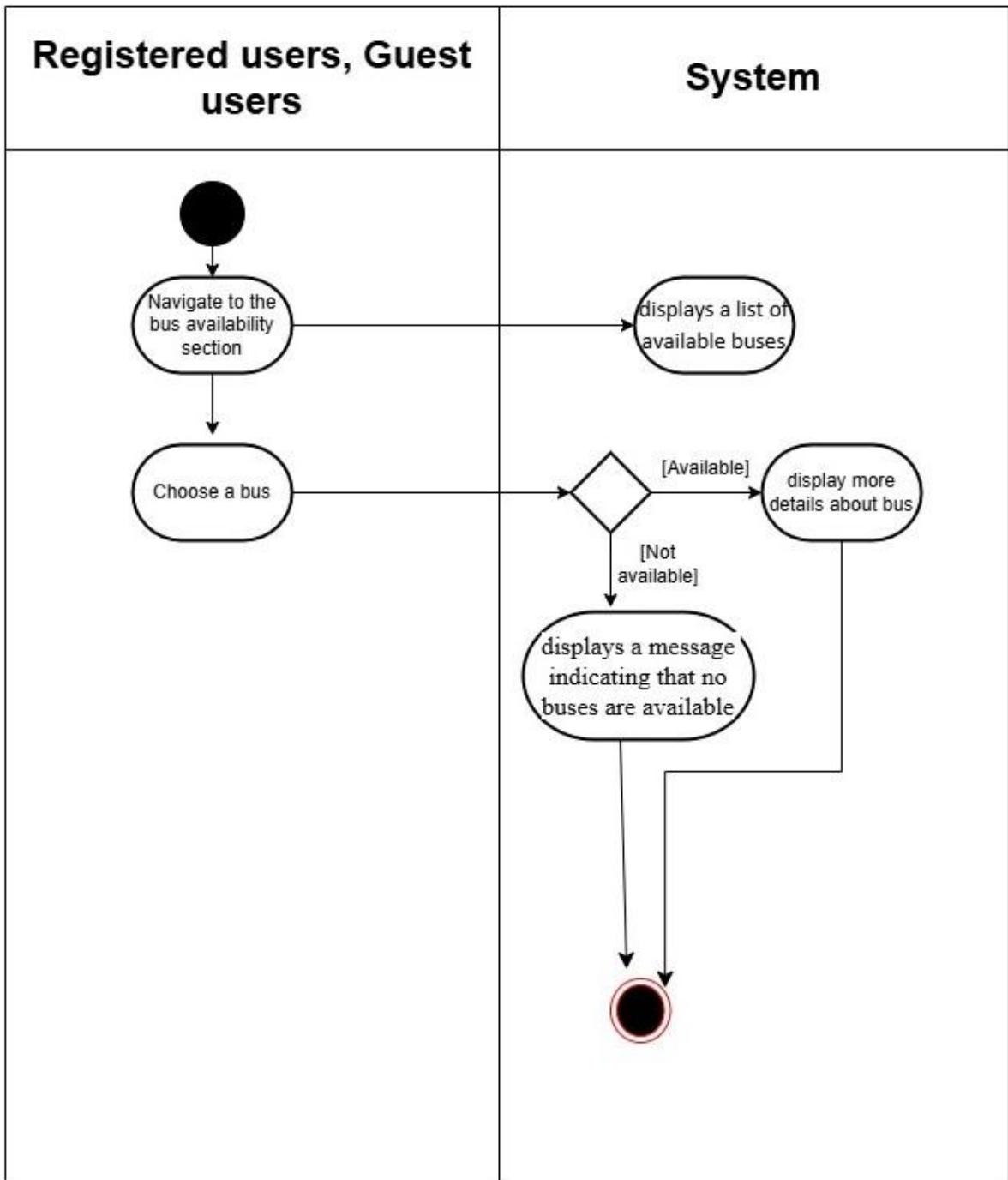
View bus details



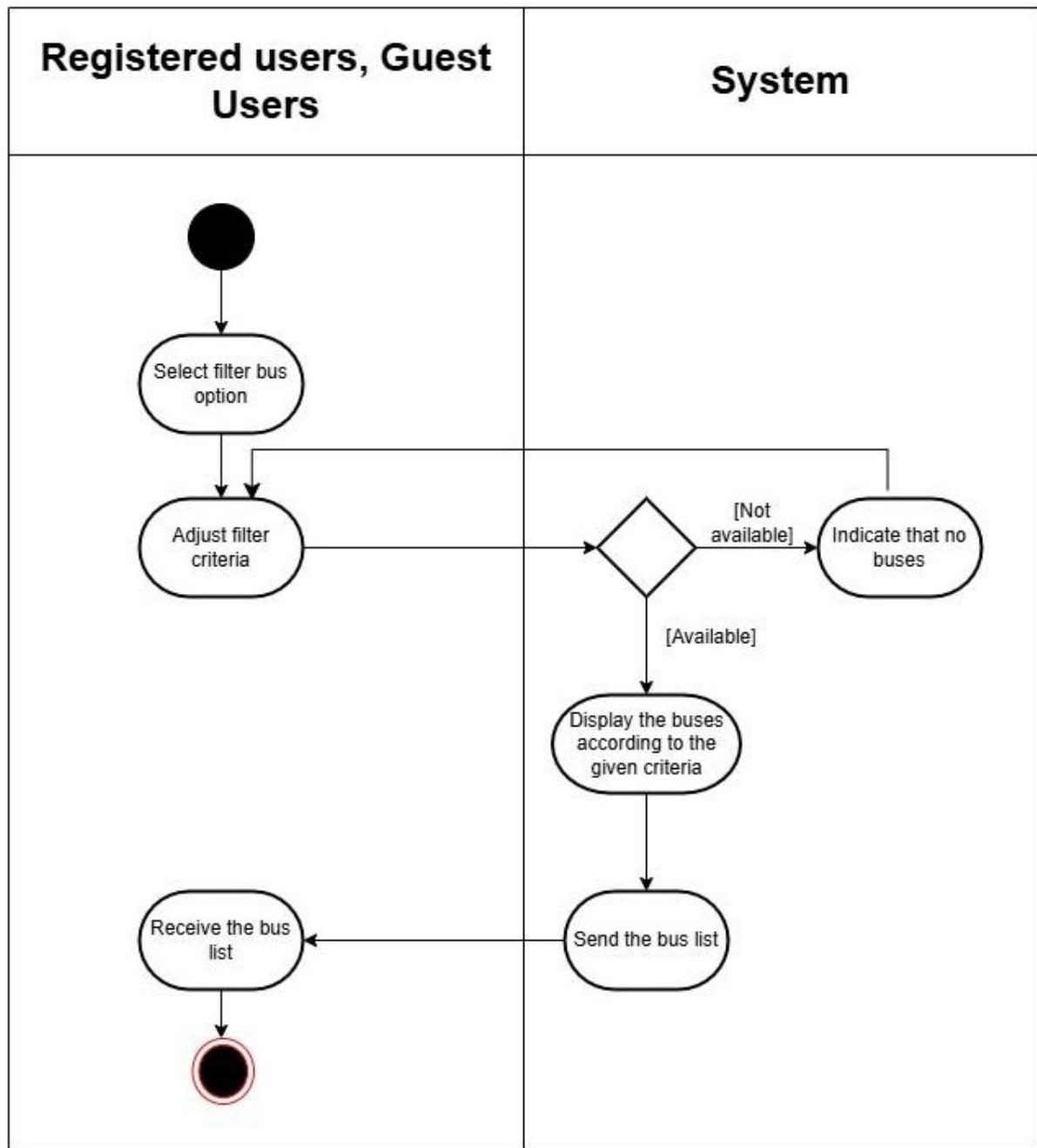
Receive notification



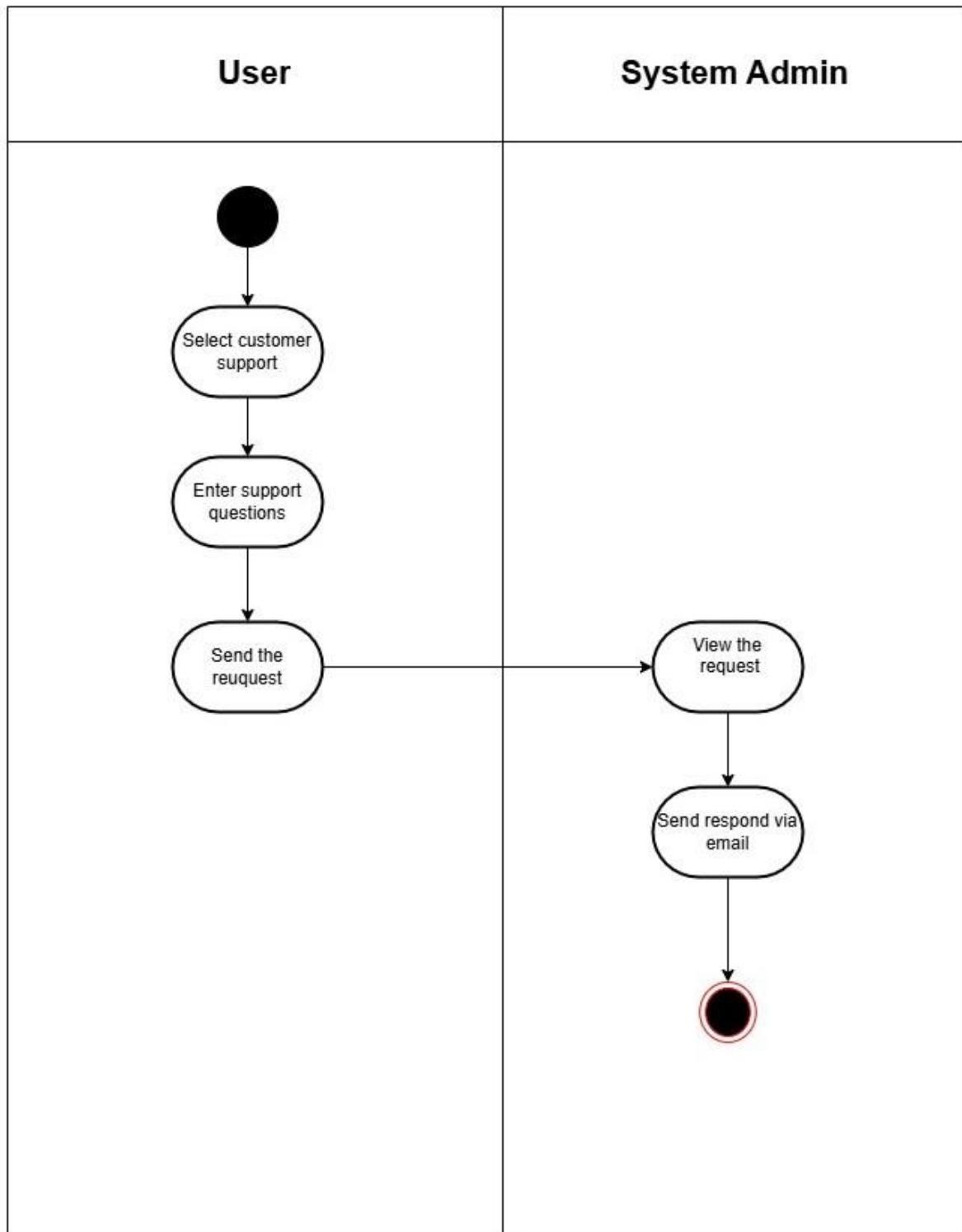
View bus availability



Filter schedules

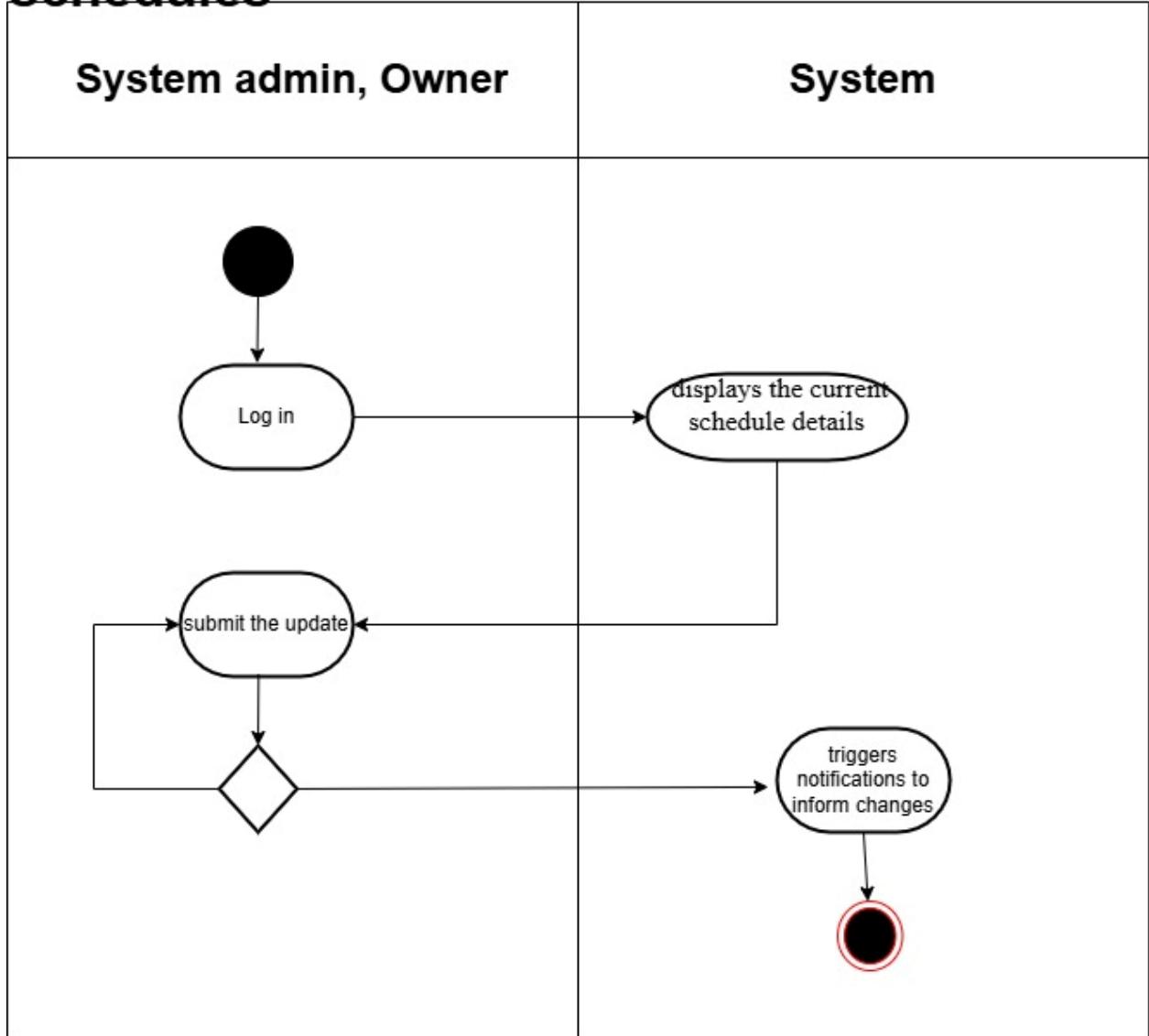


Receive customer support

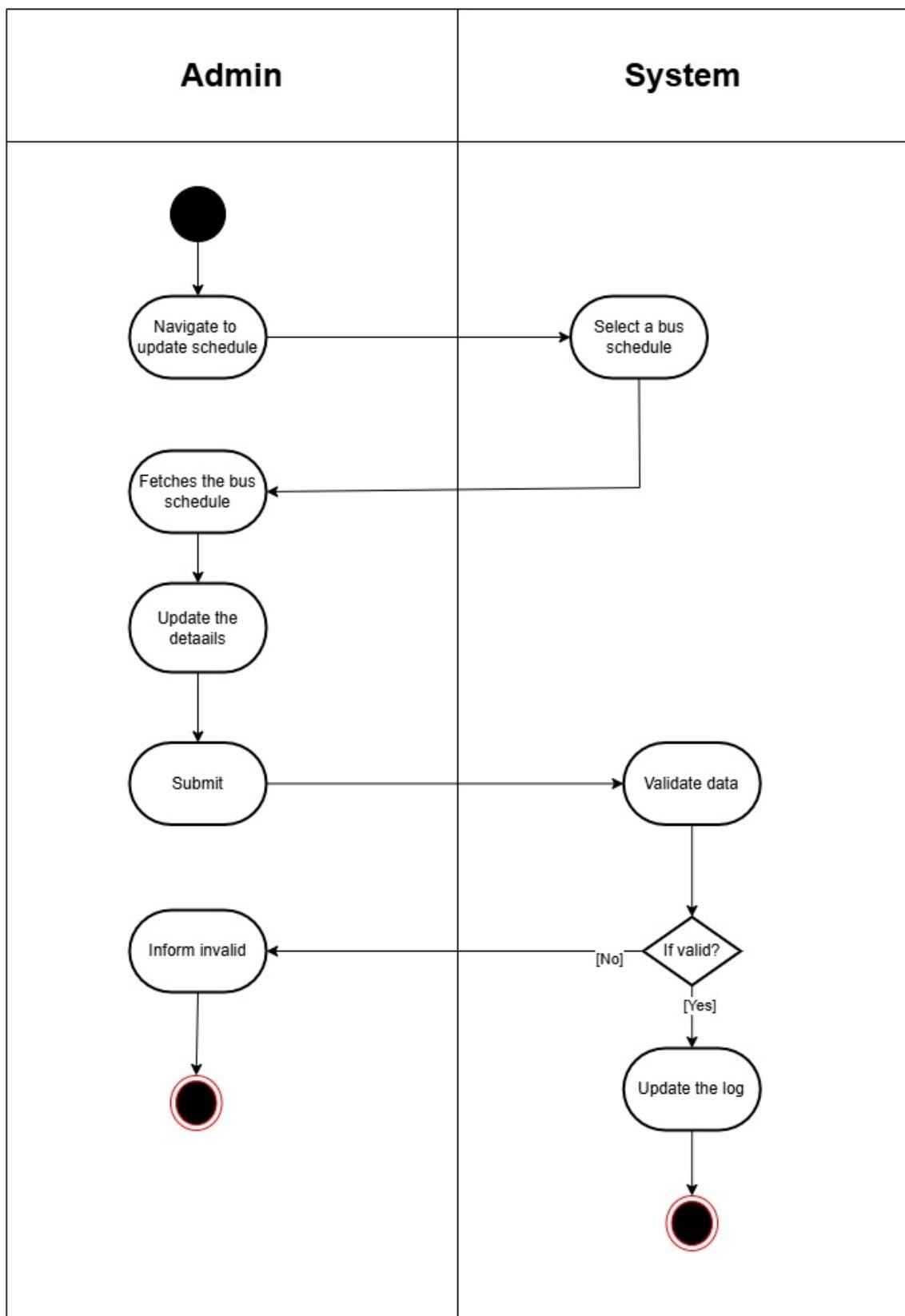


Admin

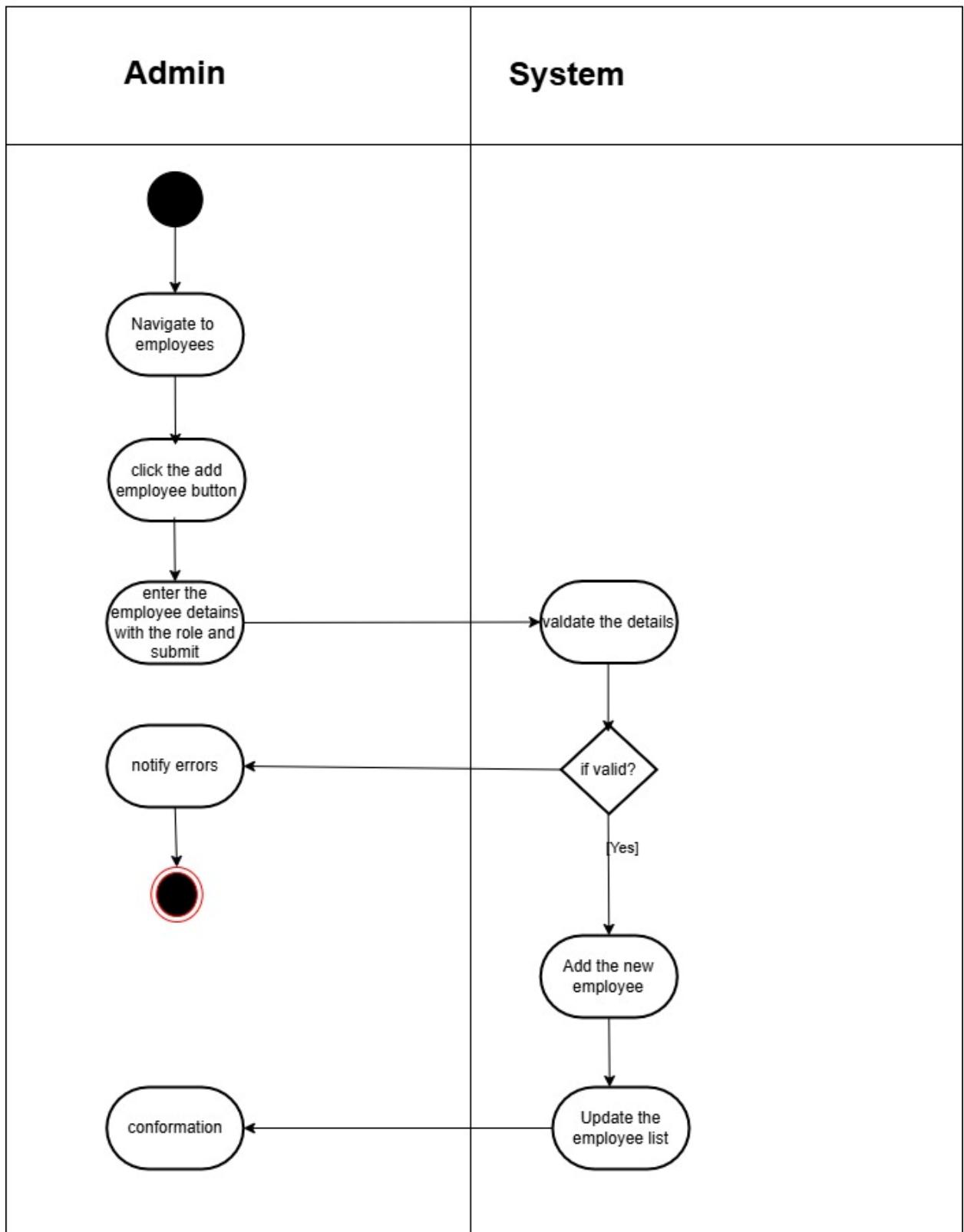
Update bus schedules



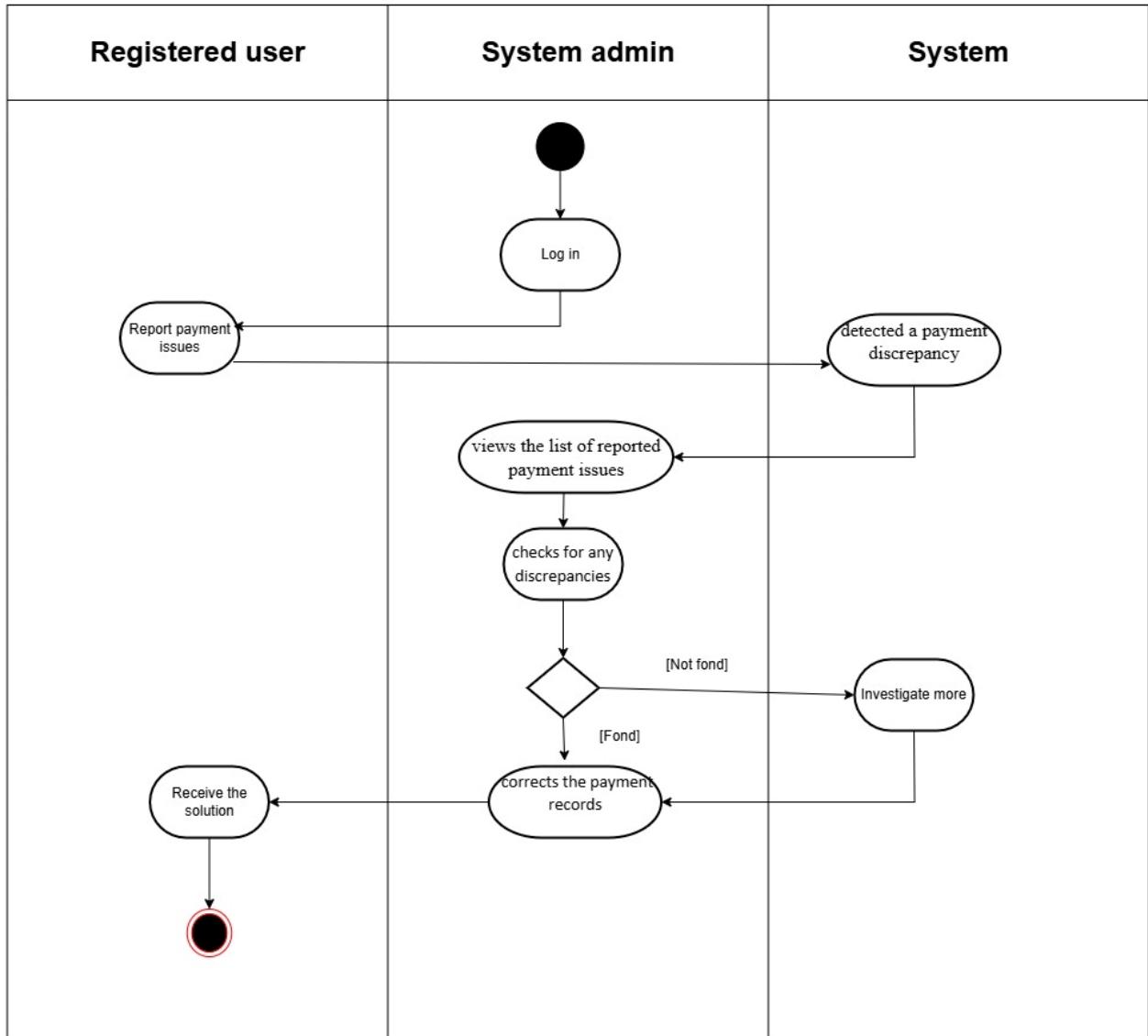
Update bus schedules



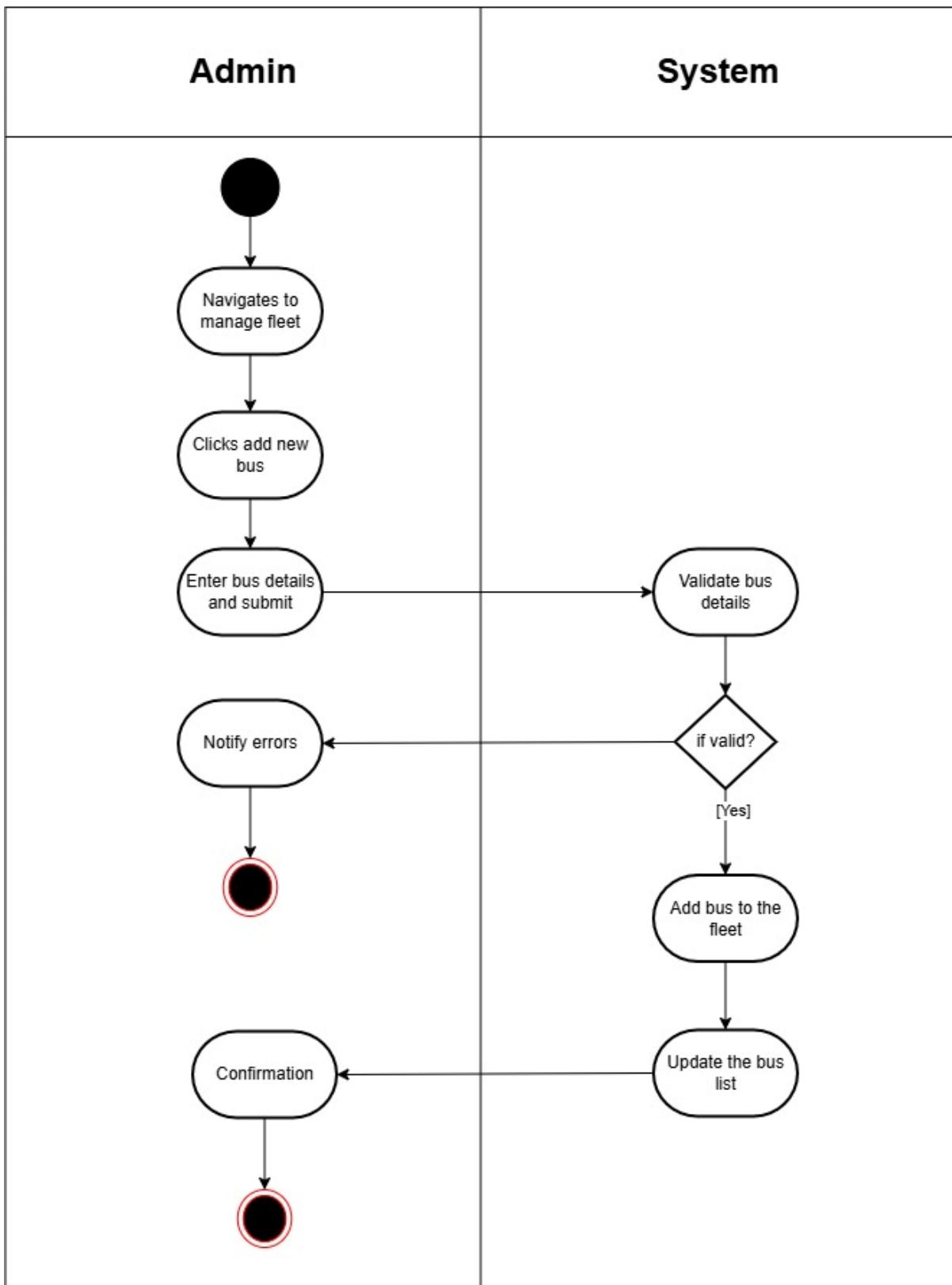
Manage Users



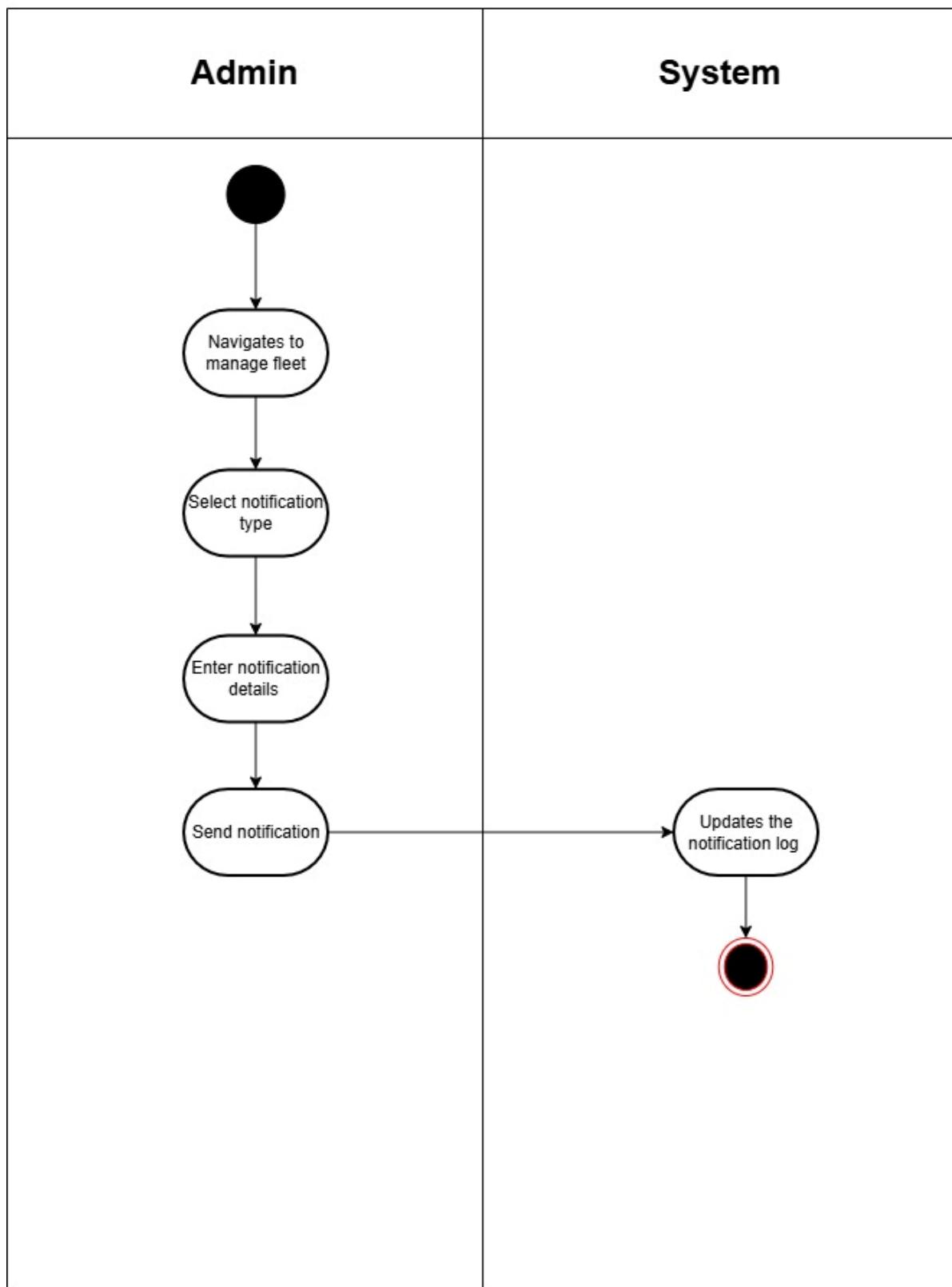
Handle payment issues



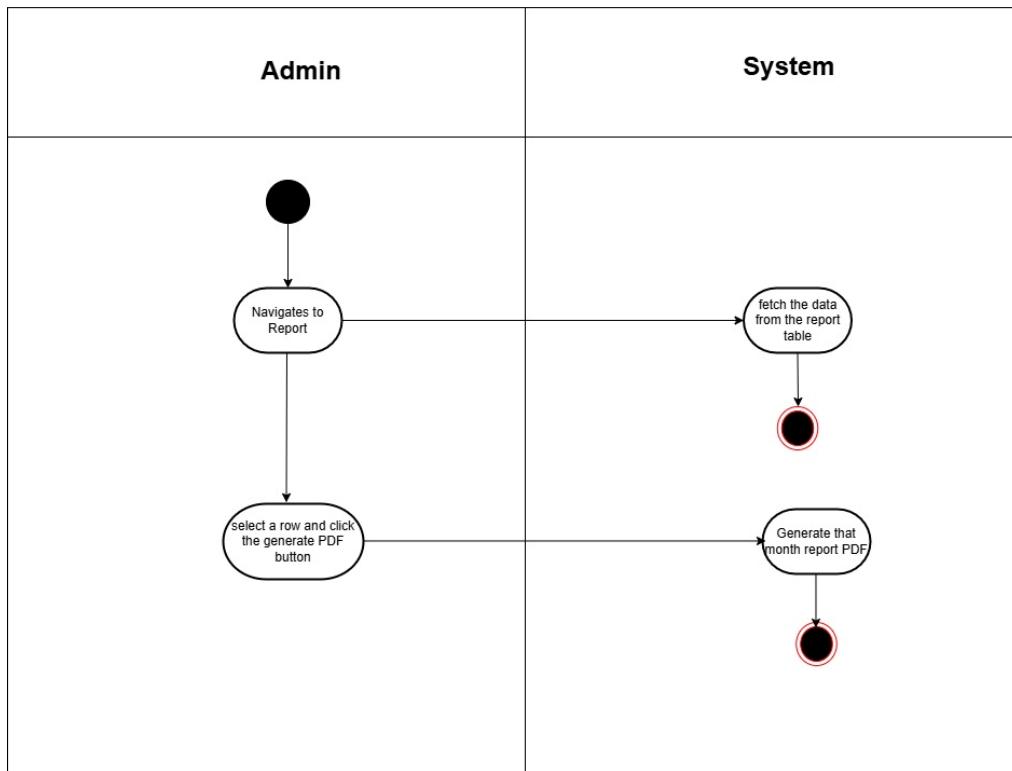
Manage Fleet



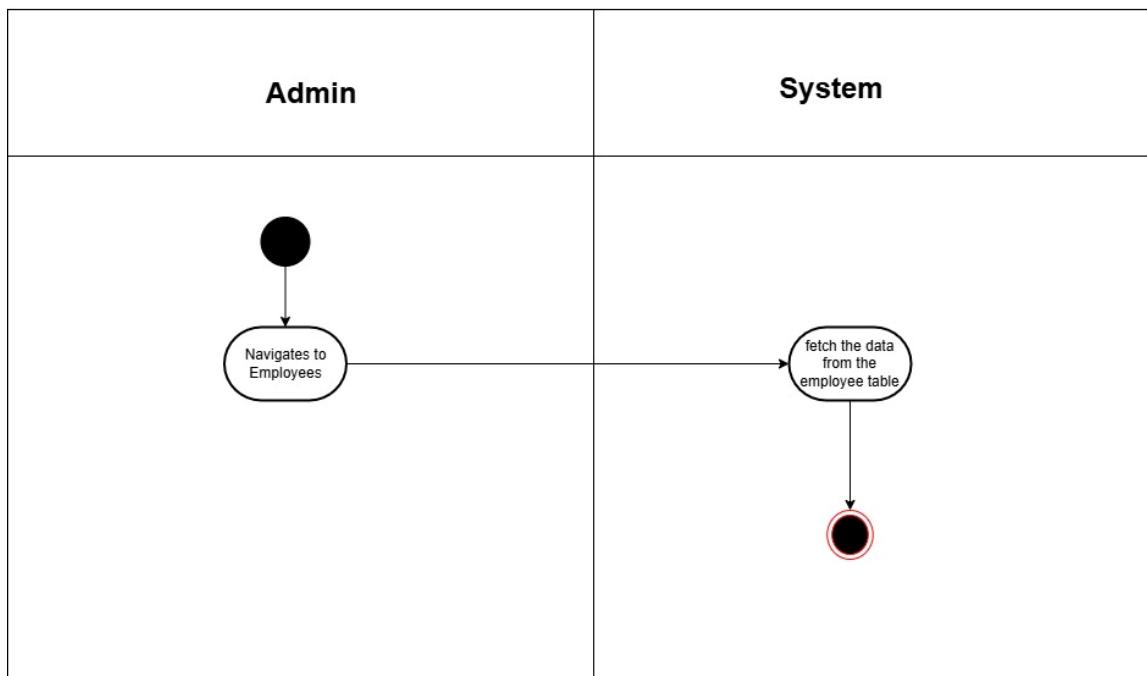
Send notification



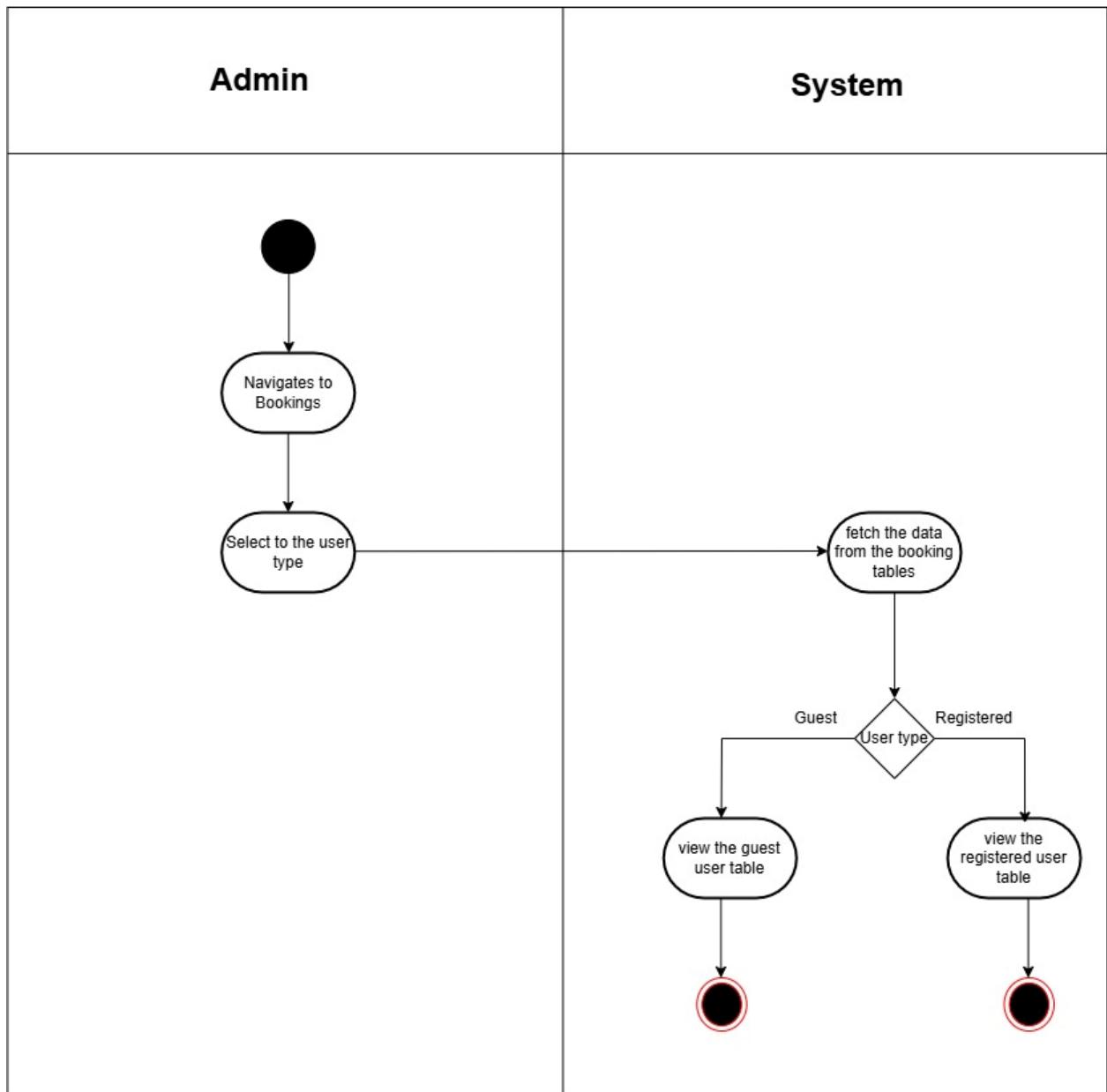
view monthly sales report



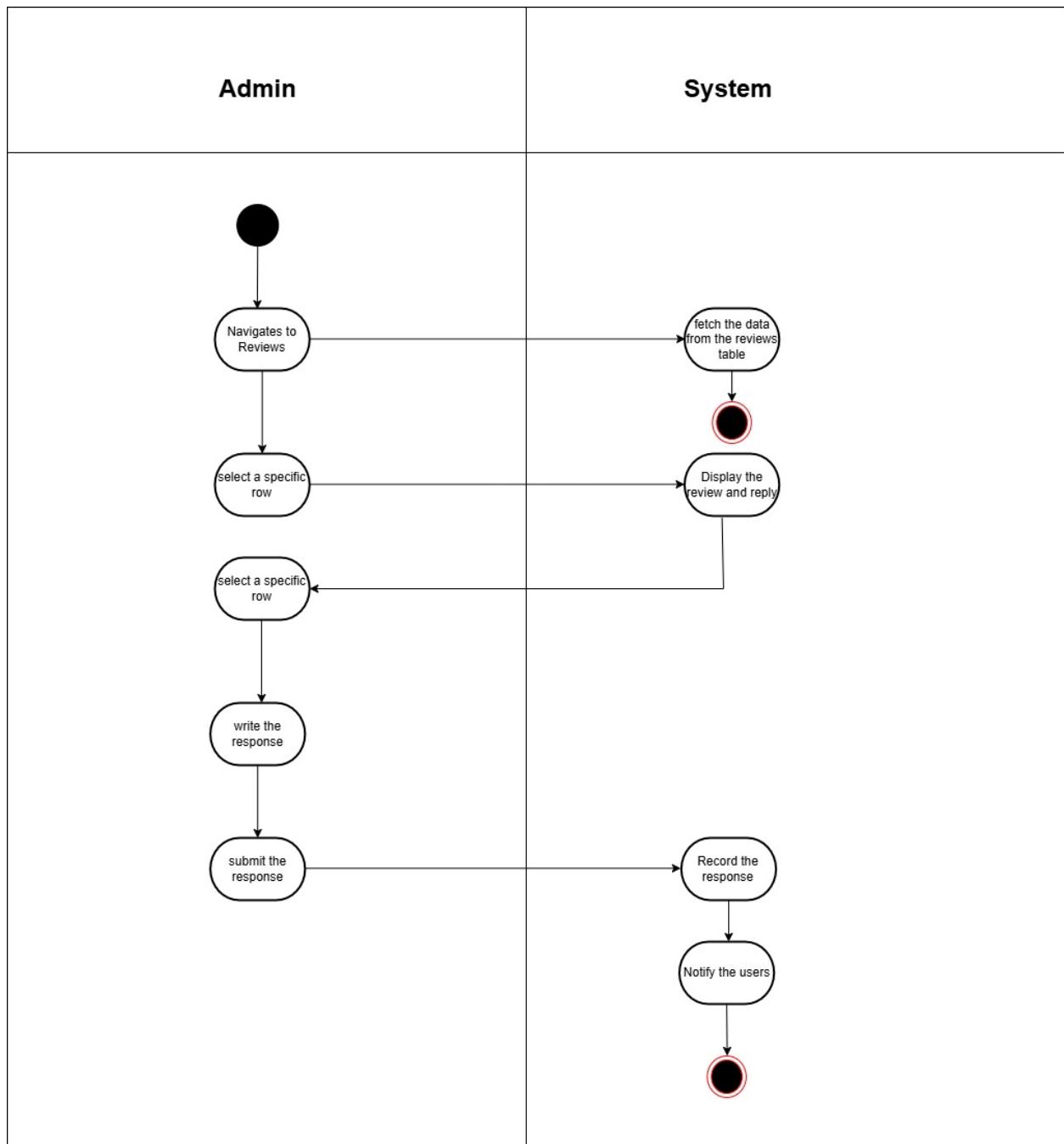
view user details



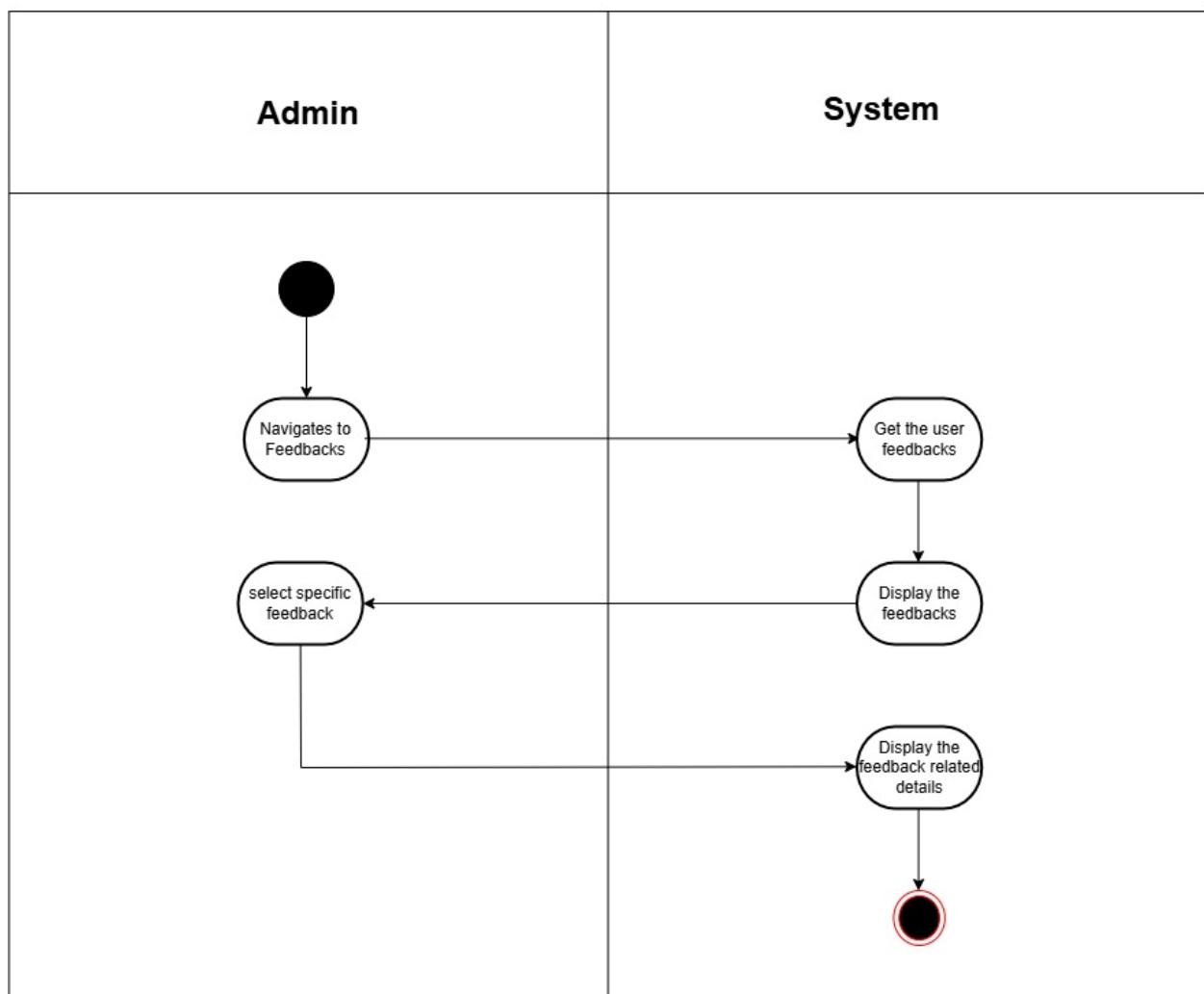
view bookings



Respond Reviews

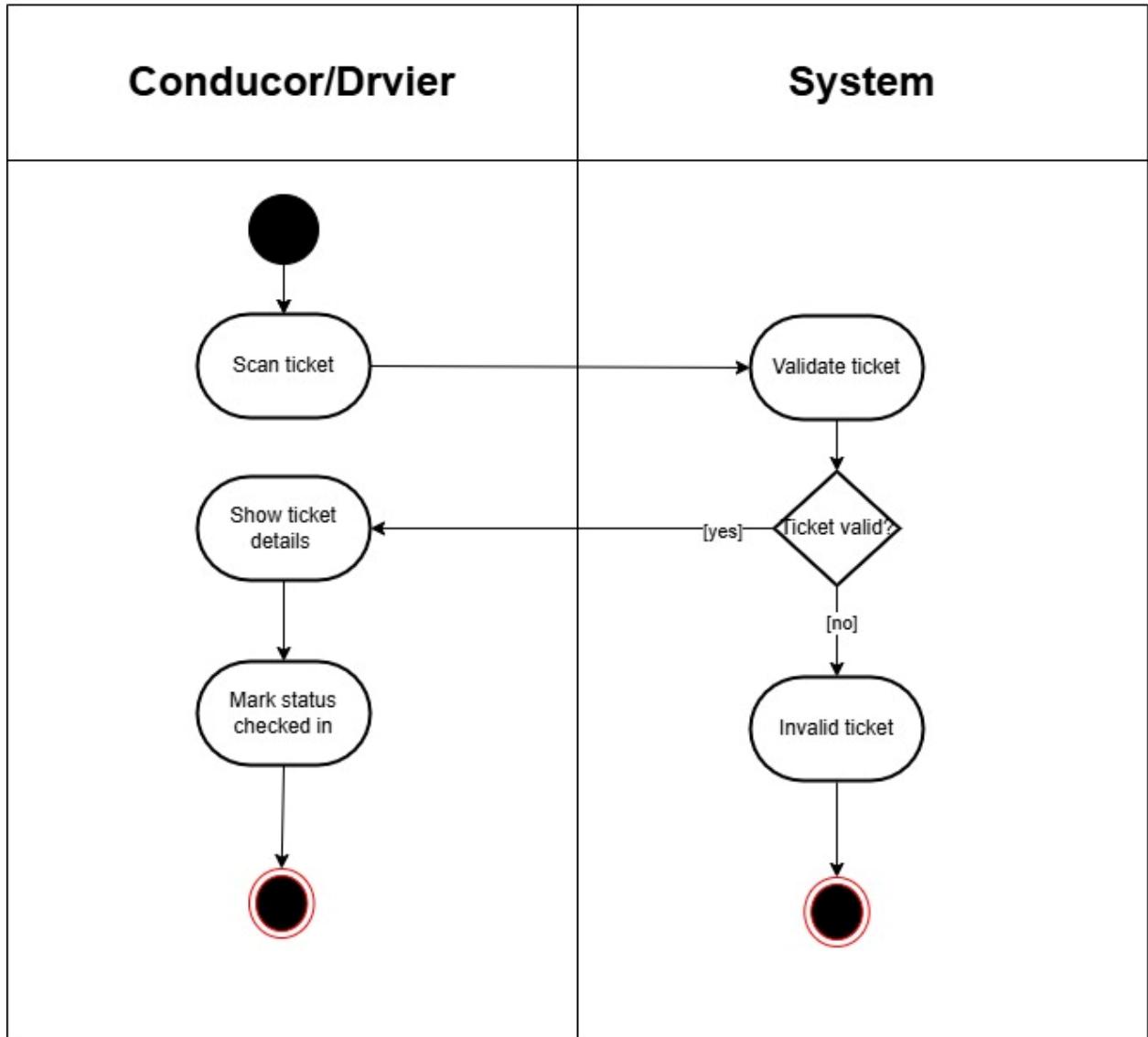


view feedbacks

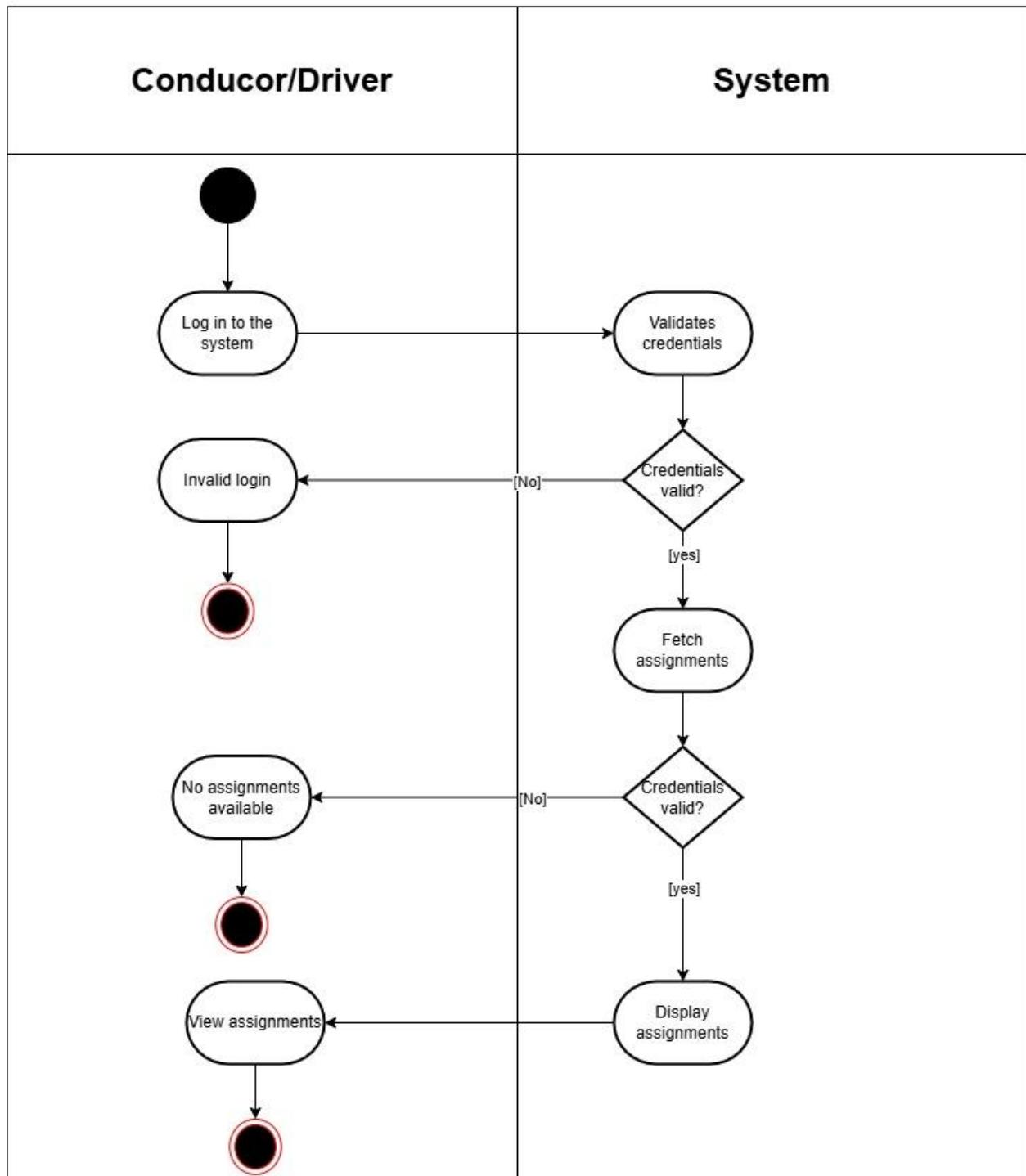


Conductor/Driver

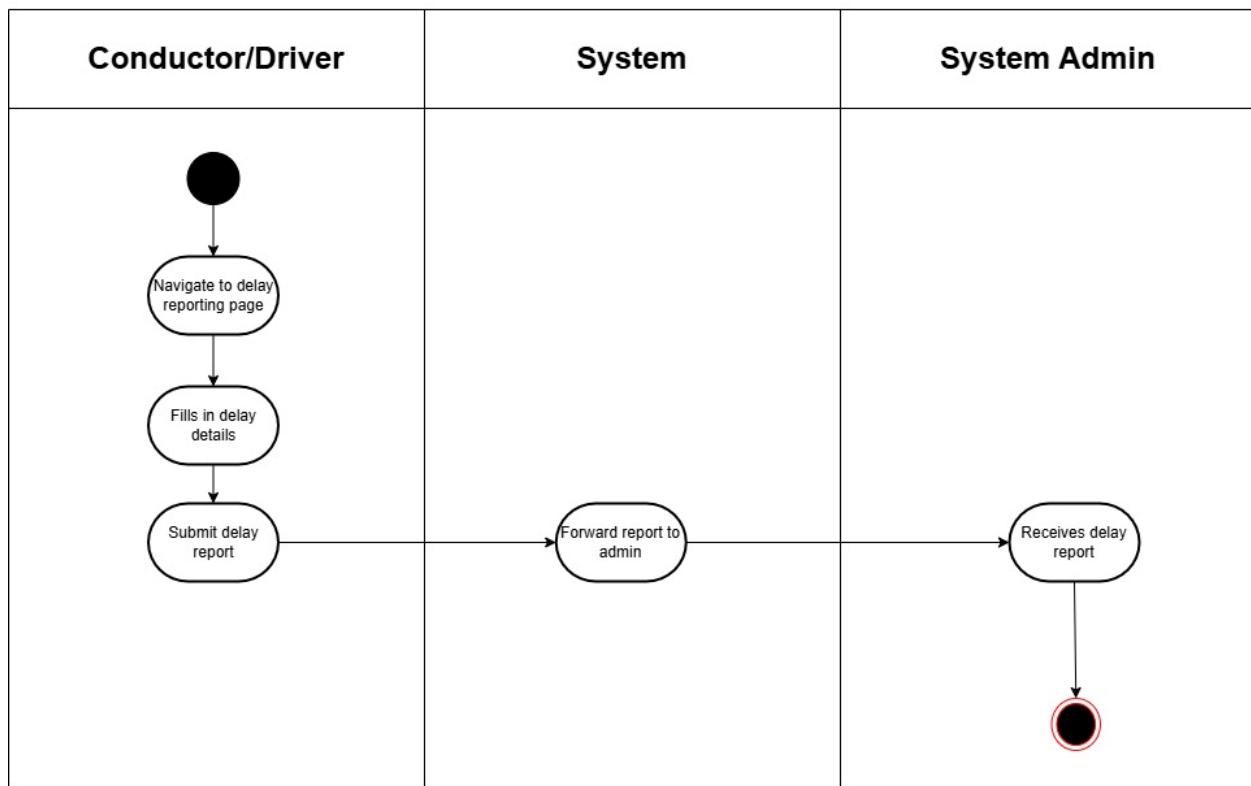
Scanning a ticket



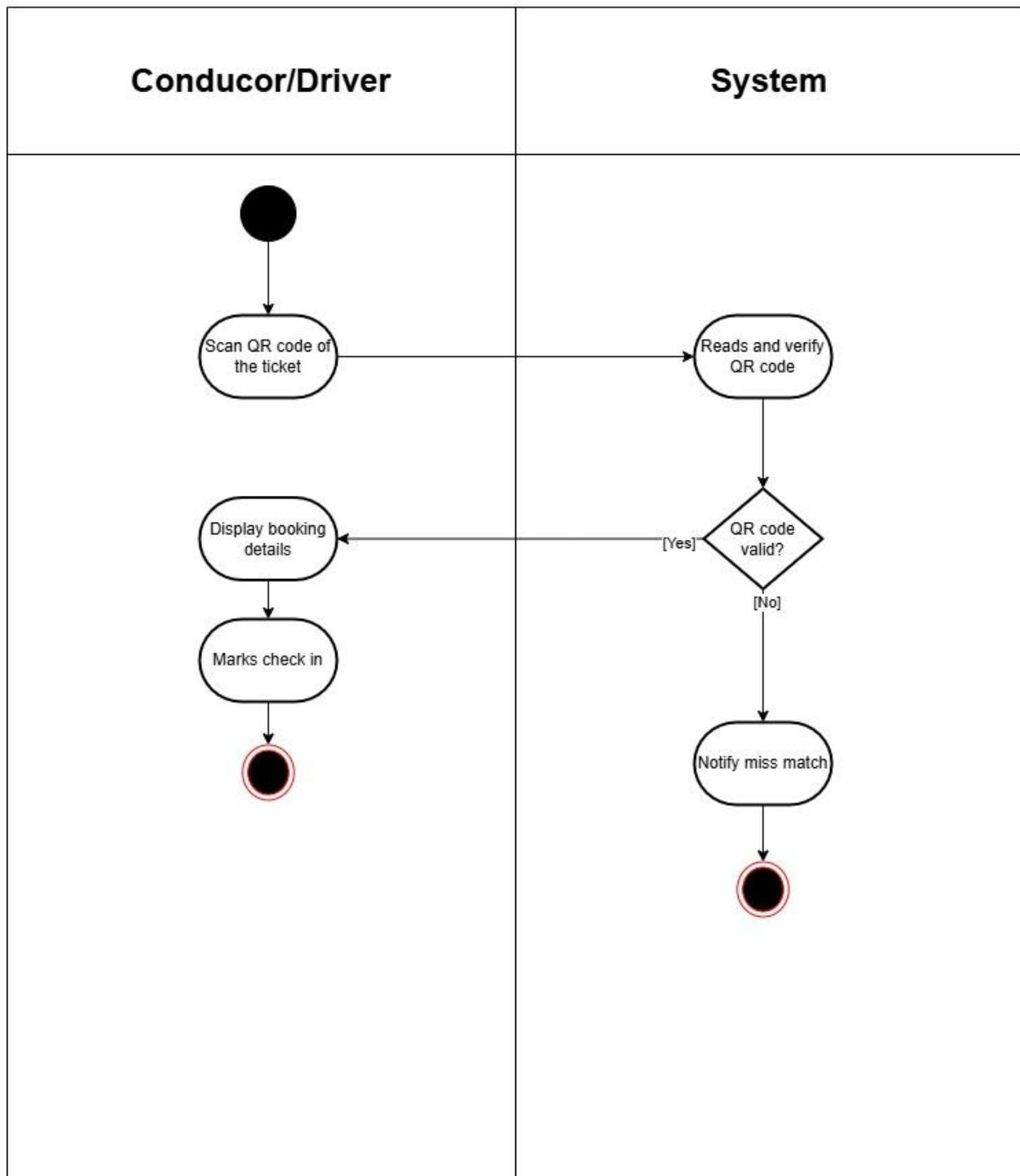
View Assigns



Inform delay



Verify bookings



6. Completeness of the project

6.1. Functionalities completed

Customer Section

Authentication & Account Management

- Comprehensive user registration system with email verification via OTP.
- Secure login/logout functionality with session management.
- Password recovery system using email-based reset links.
- Profile management capabilities (view, edit, update profile image, account deletion).

Bus Schedule & Information

- Interactive landing page displaying comprehensive bus details by date.
- Advanced filtering system by date, departure time, and location.
- Detailed bus cards showing ratings, arrival/departure times, pricing, and other relevant information.
- Dynamic rating calculation and display showing average customer ratings.

Booking Management

- Interactive seat selection interface with visual bus layout.
- Intelligent pricing system that calculates fares based on selected seats and routes (pickup/drop-off locations).
- Dual payment option support (online payment portal and cash payment).
- Automated booking confirmation with downloadable receipts containing QR verification codes.
- Email receipt system for booking confirmations.

Customer Support

- Dedicated contact page for support requests

Booking History & Management

- Comprehensive booking history for registered users, categorized as:
 - Past bookings (with ticket viewing and review submission capabilities)
 - Upcoming bookings (with ticket viewing and cancellation options)
- Sophisticated cancellation system with:
 - Policy-based cancellation fee calculation
 - Refund processing for online bookings (bank details collection)
 - Payment portal integration for cancellation fee collection on cash bookings

- Automated cancellation receipts and confirmation emails
- Automated no-show detection with a 50% penalty fee application to subsequent bookings

Penalties & Notifications

- In-app notification system for:
 - Missed booking penalties
 - Penalty fee payment confirmations
 - Bus delay alerts
 - Notification management features (mark as read/unread, delete, dismiss from header)

Conductor Section

Authentication

- Secure login system with role-based access for conductors and drivers

Schedule Management

- Comprehensive schedule viewing capabilities:
 - Past assignments history
 - Upcoming schedule viewing

Operational Communication

- Integrated delay notification system:
 - Structured delay-form for reporting issues to admin
 - Direct communication to administrative staff and the passengers.

Passenger Verification

- Multi-modal ticket verification system:
 - QR code scanner for digital ticket validation
 - Manual verification option using booking ID and NIC

Occupancy Monitoring

- Interactive bus layout visualization:
 - Passenger status tracking (arrived/not arrived)
 - Seat occupancy visibility

Communication

- Notification center for receiving communications from admin.

Profile Management

- Employee profile functionality:
 - View personal information
 - Edit profile details

Admin Section

Authentication

- Secure administrative login system with elevated privileges

Fleet Management

- Bus registration and management system:
 - Addition of new buses to the fleet
 - Comprehensive bus information management

Employee Administration

- Account creation and configuration

Booking Oversight

- Comprehensive booking records monitoring:
 - Active booking tracking
 - Cancellation records review

User Management

- User information access and monitoring capabilities

Customer Support

- Integrated customer support system:
 - Support request handling

Communication

- Bidirectional notification system:
 - Sending notifications to employees
 - Receiving system reports from employees

Feedback Management

- Customer review and complaint handling:
 - Response capabilities to user feedback

Schedule Administration

- Route and schedule management:
 - Creation of new bus schedules
 - Modification of existing schedules
 - Addition of new routes and bus stops

Profile Management

- Administrative profile access:
 - Profile information viewing
 - Profile details editing

Monthly Report

- Generate PDF
 - Total Income
 - Total Bookings and Cancellations, Cancellation fees
 - Employees, Buses, Schedules

Income Summary Charts

- Route-Wise Income
 - Bar chart ranking routes by generated income.
- Booking vs. Cancellation Comparison
 - Dual bar chart comparing income from bookings vs. losses from cancellations

6.2. Functionalities yet to complete

- Enabling the admin to send notifications to customers.
- Sending booking receipts and notifications via SMS.
- Implementing a customer review feature for the system.
- Displaying the bus route on an interactive map.
- Providing real-time departure alerts to users.
- Adding a cost-based bus filtering option.
- Integrating a fully functional payment gateway.
- Creating a full scale database with pricing details the government has issued.
- Integrating the employee management functionalities for the ease of the bus company.
- Making the system an mobile application.

6.3. Individual Contribution

Pasandi Ranganath – 22001621 : 25%

Routing system

- Developed a navigation bar for routing between the pages.
- Include search bus(home),about us, contact us for guest user while the registered user includes home, bookings and contact us

Bus Card

- Developed the dynamic retrieval and display of bus cards, which includes date, starting location and final destination, price, departure time, route number and duration for the whole journey.
- Implemented filters to search bus cards based on date and location.
 - A search bar for custom date input.
 - A horizontally scrollable date bar for quick date selection.

Seat Layout Management

- Integrated interactive seat layouts for each bus, displaying booked seats distinctly.
- Enabled updates to reflect selected and unavailable seats using a seat layout.

Pricing Logic and Booking Calculation

- Designed and implemented logic to calculate seat prices based on selected departure and arrival location distance using a fixed variable price per km for each bus route.
- Automated total price computation according to the number of seats selected by the user.

Booking System

- Developed complete booking workflows for both guest and registered users.
- Implemented comprehensive booking form interfaces, including:
 - Input validation for user details and seat selection.
 - Real-time feedback for form errors and confirmations.
 - Dynamic UI adjustments based on user type (guest/registered)(Already filled user details in the booking form)

Online Payment Integration

- Integrated a dummy online payment portal to facilitate transactions.

Downloadable booking receipts with QR code

- Generated downloadable booking receipts with embedded QR codes.

Booking confirmation email

- Configured confirmation receipts via email, including booking details and attached QR code receipts.

Guest Booking Features

- Handled guest user bookings through an online payment system.
- Enabled QR code-based receipts for guest bookings, both downloadable and sent via email.

Registered User Booking Management

- Supported both online and cash payment options.
- Implemented receipt generation and confirmation emails for registered users.

Booking Management

- Assisted in developing a calendar view to display past, upcoming and cancelled bookings.
- Integrated features to cancel bookings
 - Compute cancellation fees according to the cancellation policies defined.
 - Get bank details to send the refund amount, if the payment method of the booking is online or else get the cancellation fee via online payment portal.
 - Issue relevant receipts and cancellation receipt emails.

Account Recovery

- Developed and tested the forgot password feature for secure account recovery.
 - Check if the account with the given email address exists.
 - If yes then a reset password link will be sent to the email address.
 - Through that the password can be changed.

Email verification

- Developed the email verification functionality using OTP.

Customer Support Integration

- Added a Contact Support feature to improve user assistance and feedback.

No-show penalty system

- Implementing a method to handle the no show bookings by adding a 50% penalty fee for the next booking.

Notification Management System

- Built a comprehensive notification module including:
 - Read/unread status management.
 - Deletion and search capabilities.
 - Notifications for no-show penalties, penalty payments, and bus delays.

Event Scheduling and System Automation

- Created automated events to handle system processes such as:
 - Rescheduling expired schedules for continuity of service.
 - Identifying and marking not arrived bookings, triggering related operations.
 - Sending penalty notifications to users who missed their bookings.
 - Managing past bookings for registered users, ensuring proper categorization and visibility.

System User Interfaces

- Home page for both the registered and guest users.
- Contact Us page for both the registered and guest users.
- Booking page for both the registered and guest users.
- Dummy payment portal.
- Forgot password and reset password user interface.

Test cases : P.P.Ranganath - 22001621

Test case 1: Navigation						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
1.1	Verify that the correct pages and options are shown in the navigation bar for a guest user.	User is not logged in (guest user).	Open the application without logging in. Observe the navigation bar.	Navigation bar includes the following links: Search Bus (or Home) About Us Contact Us No user-specific features like bookings are visible. All links route to the correct pages.	Navigation bar displayed with: Search Bus / Home About Us Contact Us No user items shown Routing works as expected	Pass
1.2	Verify navigation bar for registered users	User is logged in	1. Log in as a registered user 2. Observe the navigation bar	Navigation bar includes: Home Bookings Contact Us Search Bus and About Us are hidden Profile/logout available if implemented	Navigation bar displayed with: Home Bookings Contact Us No guest-only items visible Routing and profile options work as expected	Pass
1.3	Ensure routing works from navigation bar	User logged in or not (both tested)	1. Click each link in the navbar 2. Verify redirection and page content	Each link routes to respective page: Home/Search Bus → Homepage About Us → Info page Contact Us → Form page Bookings → Booking list	Links correctly redirect to the expected pages with appropriate content and user-specific information shown where needed	Pass
Test Case 2: Display Home Page with Sorted Bus Cards						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
2.1	Verify that the home page displays the search bar and bus cards sorted by date.	User accesses the home page	1. Open the application's home page.	The search bar is visible, and all bus cards are displayed in ascending order based on the date of travel.	Search bar and date-sorted bus cards appear as expected.	Pass
Test Case 3: Search Buses by Date, Time, and Locations						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
3.1	Ensure the system filters and displays bus cards based on specific search criteria.	User is on the home page.	1.Enter the desired Date, Departure Location, and Arrival Location into the search bar. 2.Click the Search button.	Bus cards matching the given criteria are displayed. The selected date appears in the date bar.	Correct bus cards are shown, and the date bar updates to reflect the searched date	Pass
3.2	Ensure the system shows no schedules for the criterias that does not match	User is on the home page.	1.Enter the desired Date, Departure Location, and Arrival Location combination that does not match any existing bus schedules 2.Click the Search button.	The system should display a clear message such as "No bus schedules available for the selected route and date." No bus cards should be shown.	"No schedules found" is displayed, and no bus cards appear.	Pass
3.3	Ensure the system redirects to the home page with the searched date selected in the date bar after closing the "No schedules found" popup.	A search is performed that results in no matching schedules, triggering the "No schedules found" popup.	1. Perform a search using a combination of Date, Departure, and Arrival that has no scheduled buses. 2. When the "No schedules found" popup appears, click the Close button.	The system should redirect the user to the home page. The searched date should remain selected in the date bar, and other schedules (if available) for that specific date should be shown.	The system redirects to the home page with the searched date selected in the date bar. Any available schedules for that date are displayed.	Pass

Test Case 3: Search Buses by Date, Time, and Locations						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
3.1	Ensure the system filters and displays bus cards based on specific search criteria.	User is on the home page.	1. Enter the desired Date, Departure Location, and Arrival Location into the search bar. 2. Click the Search button.	Bus cards matching the given criteria are displayed. The selected date appears in the date bar.	Correct bus cards are shown, and the date bar updates to reflect the searched date	Pass
3.2	Ensure the system shows no schedules for the criterias that does not match	User is on the home page.	1. Enter the desired Date, Departure Location, and Arrival Location combination that does not match any existing bus schedules 2. Click the Search button.	The system should display a clear message such as "No bus schedules available for the selected route and date." No bus cards should be shown.	"No schedules found" is displayed, and no bus cards appear.	Pass
3.3	Ensure the system redirects to the home page with the searched date selected in the date bar after closing the "No schedules found" popup.	A search is performed that results in no matching schedules, triggering the "No schedules found" popup.	1. Perform a search using a combination of Date, Departure, and Arrival that has no scheduled buses. 2. When the "No schedules found" popup appears, click the Close button.	The system should redirect the user to the home page. The searched date should remain selected in the date bar, and other schedules (if available) for that specific date should be shown.	The system redirects to the home page with the searched date selected in the date bar. Any available schedules for that date are displayed.	Pass
3.4	Ensure that the "From" and "To" location fields are dropdown lists populated from the stops associated with each route.	User is on the home page. The system has predefined routes with associated stops.	1. Click on the "From" dropdown list. 2. Observe the options populated — they should include all valid stops derived from the available routes. 3. Repeat for the "To" dropdown list. 4. Select any valid combination of "From" and "To" stops.	The dropdown lists are populated with stops from all existing routes. Upon selection, the system filters schedules accordingly.	Both "From" and "To" dropdowns correctly list the stops from available routes. Search functionality works as expected with selected values	Pass
Test Case 4: Filter Bus Cards by Date Selection						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
4.1	Verify that selecting a date in the date bar filters the displayed bus cards accordingly.	User is on the home page with the date bar visible.	1. Click on a specific date from the date bar.	Only the bus cards scheduled for the selected date are shown.	Bus cards for the selected date appear correctly.	Pass
4.2	Verify that the system displays a "No schedules found" message when the user selects a date that has no scheduled buses.	The user is on the home page and the date bar is visible. The selected date has no scheduled buses.	1. Click on a date from the date bar that does not have any bus schedules.	The system should display a message such as "No schedules found". No bus cards should be shown for that date.	The message "No schedules found" appears, and the bus card area remains empty.	Pass
4.3	Verify that only 8 bus cards are displayed initially and that clicking the "Show More" button loads all remaining bus cards for the selected date.	The selected date has more than 8 scheduled buses.	1. Open the home page. 2. Observe the number of bus cards displayed for the current or selected date. 3. Click the "Show More" button.	Initially, only 8 bus cards are displayed. After clicking "Show More", all remaining bus cards for the selected date appear.	The system displays 8 bus cards initially, and all remaining cards are shown upon clicking "Show More".	Pass
Test Case 5: Navigating to the booking form						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
5.1	Ensure that clicking on a bus card redirects the user to the corresponding booking section.	Bus cards are visible on the home page.	1. Click on any bus card from the list.	User is redirected to the booking section, displaying seat layout, bus details, and the booking form.	Redirection is successful with all required booking information visible.	Pass
Test Case 6: Display Seat Layout with Booked Indicators						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
6.1	Ensure that the seat layout of a specific bus is displayed, and already booked seats are visually indicated.	User has navigated to the seat layout view for a specific bus by clicking a bus card	1. Click on a bus card 2. Observe the layout.	The seat layout appears for the selected bus. Booked seats are clearly marked (e.g., colored red).	Seat layout is displayed with booked seats shown in red.	Pass
6.2	Verify that the system disables interaction with seats that are already booked.	Seat layout is visible and includes booked seats.	1. Click on a seat that is marked as booked.	The seat should not be selectable or clickable.	The system prevents clicking on the booked seat.	Pass
6.3	Ensure that selecting an available seat marks it appropriately and updates selection fields.	Seat layout is visible.	1. Click on an available (unbooked) seat.	Seat turns green to indicate selection. The number of seats field increases by one in the booking form The selected seat number is added to the selected seats field in the booking form	Selected seat turns green, seat count is incremented, and seat number is displayed in the booking form	Pass
6.4	Validate that a selected seat can be deselected and the corresponding fields are updated.	At least one seat is selected.	Click on a seat that was already selected.	The seat returns to its normal (unselected) style. The number of seats field decreases by one. The seat number is removed from the selected seats field.	Seat is deselected and returns to its original style. Count is decreased, and seat number is removed from selection.	Pass

Test Case 7: Booking Form						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
7.1	Ensure that selecting a bus card from the home page displays the seat layout and booking form.	User is on the home page. Bus cards are visible.	1. Click on a bus card displayed on the home page.	User is redirected to the booking section. Seat layout, bus details, and the booking form are displayed below or alongside.	Seat layout and booking form appear correctly with a bus details section.	Pass
7.2	Ensure that the Booking Form contains all the necessary input fields and displays calculated booking details.	A bus card has been selected.	1. Click a bus card from the home page. 2. Observe the booking form displayed along with the seat layout and the bus details	Expected Fields in the form: Name (text input) Email (email input) Contact Number (numeric input) From location (dropdown or text) To location (dropdown or text) Number of Seats (auto-counted based on seat selection) Selected Seats (auto-filled list or field) Payment Method (dropdown or radio button) Price Per Seat (display-only field) Total Price (auto-calculated based on selected seats)	All fields are present and interactive. From, To, Price per Seat, and Selected Seats populate based on selection. Total Price updates dynamically as seats are selected/deselected. All required fields are present and functioning correctly.	Pass
7.3	Ensure the Name field only accepts alphabetical characters and is not left empty.	Booking Form is visible (after selecting a bus card) and other fields entered correctly	1. Enter numeric characters in the Name field (e.g., "John123"). 2. Try to submit the form. 3. Leave the Name field empty and try to submit again.	Step 1: An error message appears saying something like "Name must only contain letters." Step 3: An error message appears saying "Name is required."	Validation messages are triggered for both invalid inputs and empty field.	Pass
7.4	Ensure the Email field accepts only valid email formats and is not left empty.	Booking Form is displayed and other field inputs entered correctly	1. Enter an invalid email (e.g., "john@example.com" or "john@.com") in the Email field. 2. Try to submit the form. 3. Leave the Email field empty and attempt to submit again. 4. Enter a valid email (e.g., "john@example.com") and proceed.	Step 1 & 2: An error message appears such as "Please enter a valid email address." Step 3: An error message appears such as "Email is required." Step 4: No error is shown and form can proceed.	Error messages are correctly shown for invalid/empty inputs, and the form works with a valid email	Pass
7.5	Ensure the Contact Number field only accepts exactly 10 numerical digits and is not left empty.	Booking Form is displayed and other field inputs entered correctly	1. Enter less than 10 digits (e.g., "07123"). 2. Enter more than 10 digits (e.g., "071234567890"). 3. Enter alphabetic characters or symbols (e.g., "07abc567l@"). 4. Leave the field empty. 5. Enter a valid 10-digit number (e.g., "0712345678").	Steps 1–4: Display appropriate error messages, such as: "Contact number must be exactly 10 digits." "Only numbers are allowed." "Contact number is required." Step 5: The Input is accepted with no error and allows form submission.	All validations are correctly triggered and valid input is accepted.	Pass
7.6	Ensure the NIC Number field only accepts: 9 digits followed by 'V' or 'V' (e.g., 123456789V) OR a 12-digit numerical value (e.g., 199912345678)	Booking Form is displayed and other field inputs entered correctly	1. Enter an invalid NIC (e.g., 12345V, abcdefghij, or 123456789X) 2. Enter a valid old format NIC (e.g., 9121234567V) 3. Enter a valid new format NIC (e.g., 200012345678) 4. Leave the NIC field empty and try to submit the form.	Step 1: Show error message like "NIC must be 9 digits followed by 'V' or a 12-digit number." Steps 2 & 3: Input is accepted, no error message. Step 4: Show error message "NIC is required."	Error and success messages behave as expected.	Pass
7.7	Ensure that the From and To locations are not the same.	Ensure that the From and To locations are not the same	1. Select the same location in both the "From" and "To" dropdowns (e.g., "Colombo" → "Colombo"). 2. Try to submit the form.	Display an error message, such as: "Departure and arrival locations cannot be the same."	Validation is triggered and form submission is blocked	Pass
7.8	Ensure that the "Number of Seats" and "Selected Seats" fields are automatically updated based on user interaction with the seat layout and cannot be manually edited	Ensure that the From and To locations are not the same	1. Try to manually type/edit the value in the Number of Seats field. 2. Try to manually type/edit the value in the Selected Seats field. 3. Click on available seats in the seat layout. 4. Observe automatic update of both fields.	Steps 1 & 2: Fields should be non-editable (read-only or disabled). Step 3: Clicking available seats should: Automatically increase the Number of Seats count. Automatically list corresponding Selected Seat Numbers.	Manual input is blocked. Fields update correctly based on seat selection.	Pass

7.9	Ensure that guest users can only select online payment and no other payment options are available.	User is not logged in (guest mode). Guest booking form is displayed.	1. Navigate to the booking form as a guest user. 2. Observe the Payment Method field or dropdown.	Only Online Payment is shown or pre-selected. No other options are available. Form submission proceeds with Online Payment as the selected method.	Only online payment is available. No other methods are shown.	Pass
7.10	Ensure the Proceed to Checkout button is disabled by default and only becomes enabled when all form validations pass.	Booking Form page.	1. Open the form and leave required fields empty or provide invalid inputs. 2. Observe the state of the "Proceed to Checkout" button. 3. Gradually enter valid values for each field: Valid name (no numbers, not empty) Valid email 10-digit contact number Valid NIC (9 digits + V/v or 12 digits) Valid From/To locations (not the same) Selected seat(s) Payment method 4. Observe the state of the button after each validation success.	Step 1: "Proceed to Checkout" button is disabled. Step 3: Button remains disabled until all inputs are valid. Once all validations pass, the button becomes enabled and clickable.	Validations work as expected. Button only becomes active when form is fully and correctly filled.	Pass
7.11	Ensure that when a guest user clicks Proceed to Checkout, the system prompts them to either log in or continue as guest before completing the booking.	User is not logged in (guest user). Guest booking form is fully and correctly filled. Online payment method is selected.	1. Fill out the guest booking form with valid input. 2. Click Proceed to Checkout. 3. Observe the system behavior.	A modal popup or dialog box appears with options: "Login" (redirects to login page or opens login box) "Proceed without login" (proceeds to dummy payment or booking confirmation) User's choice is respected and flow continues accordingly.	Guest is presented with the prompt as expected. Selection leads to appropriate next step.	Pass
7.12	Verify that when a guest user clicks "Login Now" after clicking Proceed to Checkout, the system redirects them to the login page.	Guest user has filled the booking form. Guest selects Online payment and clicks Proceed to Checkout. The guest prompt (Login or Proceed without login) appears.	1. Click Proceed to Checkout as a guest. 2. On the popup, click the "Login Now" option. 3. Observe the redirection.	System should redirect the user to the Login Page. After login, user may be redirected back to the home.	Redirection to login page works correctly.	Pass
7.13	Ensure that when a guest user clicks "Proceed Without Login", they are redirected to the dummy payment portal	User is not logged in (guest). Guest booking form is filled with valid data. Guest clicks Proceed to Checkout, triggering the login prompt.	1. Fill in the guest booking form. 2. Click Proceed to Checkout. 3. On the prompt, click "Proceed Without Login". 4. Observe redirection and form values.	User should be redirected back to the payment portal	User is redirected back to the payment portal	Pass
7.14	Ensure that the Name, Email, Contact Number, and NIC Number fields are automatically pre-filled for registered users upon reaching the booking form.	User is logged in as a registered user. User's profile details are stored in the system.	1. Login as a registered user. 2. Select a bus card and proceed to the booking form. 3. Observe the following fields: Name Email Contact Number NIC Number	All four fields (Name, Email, Contact No, NIC) should be Pre-filled with user's profile data Editable Still subject to validation if editing is allowed	Fields are correctly pre-filled. User can review and proceed.	Pass
7.15	Ensure that registered users must also pass all form validations before proceeding with booking.	User is logged in as a registered user. Registered Booking Form is displayed with pre-filled user data.	1. Navigate to the booking page as a registered user. 2. Leave fields empty or enter invalid inputs in editable fields (e.g., name, contact number, NIC). 3. Try to submit the form. 4. Gradually correct all inputs. 5. Observe the "Proceed to Checkout" button state.	Form fields are validated exactly like for guest users: Name must not contain numbers or be empty Email must be valid format Contact number must be 10 digits NIC must be valid (9 digits + V/v or 12 digits) From/To must be different Seats must be selected Payment method must be selected Proceed to Checkout button is:Disabled when any input is invalid Enabled only when all validations pass	Validations are enforced as expected for registered users. Button becomes active only after complete and correct input.	Pass
7.16	Ensure that registered users have access to multiple payment methods : Online and Cash.	User is logged in as a registered user. Booking form is open after selecting a bus.	1. Navigate to the booking form as a registered user. 2. Locate the Payment Method dropdown or radio selection. 3. Check available options.	Payment method options should include: Online and Cash User can freely choose either option.	Actual Result: Both options are shown. User is able to select and proceed with their preferred method.	Pass

Test Case 8: Price logic and Total price

No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
8.1	Ensure the system calculates the correct seat price based on the selected departure and arrival locations.	Routes and price per km for each route should be in the database User has selected valid "From" and "To" stops.	1. Select departure and arrival locations. 2. Observe the unit price displayed.	The system displays the correct seat price calculated based on the distance and route between the selected locations.	Correct seat price is displayed.	Pass
8.2	Verify that the total price is calculated correctly based on the number of selected seats.	Unit seat price is available. The user selects multiple seats.	1. Select two or more available seats. 2. Check the total price field.	The total price should be: Total = Unit Price × Number of Seats	Total price updates correctly with every seat selection or deselection.	Pass
8.3	Ensure that the total price decreases correctly when a selected seat is deselected.	User has selected at least two seats.	1. Deselect one of the selected seats. 2. Observe the total price field.	The total price should decrease accordingly by the seat's unit price.	Total price decreases correctly after seat deselection.	Pass
8.4	Verify that the system does not calculate or show price for invalid "From" and "To" combinations.	User selects the same location for "From" and "To".	1. Select the same stop for both departure and arrival.	Price should not be shown or an appropriate error message is displayed.	System prevents invalid pricing by making the price 0 and alerts the user that same location cannot be selected	Pass

Test Case 9: Payment method : Online booking						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
9.1	Verify that both guest and registered users who select Online as the payment method are redirected to a dummy payment portal before confirming the booking.	User is on the booking form (either guest or registered). All required fields are validated successfully. Online payment method is selected.	1. Complete the booking form with valid details. 2. Select Online as the payment method. 3. Click Proceed to Checkout. 4. Observe the redirection behavior.	System redirects user to a dummy payment portal (simulated for testing). The portal allows user to simulate a payment. Upon successful simulated payment, the system proceeds to generate booking confirmation.	User is successfully redirected to the dummy portal and the payment simulation works.	Pass
Test Case 10: Online Payment Portal : For booking						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
10.1	Ensure the dummy payment portal includes all necessary fields with proper validations, and that the payment amount amount is automatically prefilled based on the booking.	Guest or registered user has completed the booking form. Online payment method is selected. User is redirected to the dummy payment portal.	1. Navigate to the dummy payment portal after clicking Proceed to Checkout. 2. Observe the fields available on the payment form. 3. Try submitting the form with empty or invalid data to check validations. 4. Verify that the payment amount field is prefilled and uneditable.	Expected Fields and Validations: Cardholder Name : Cannot be empty, must only contain alphabetic characters and spaces Card Number : Must be exactly 16 digits, numeric only Expiry Date : Must be in MM/YY format and not in the past CVV : Must be exactly 3 digits, numeric only Payment Amount : Prefilled with the total amount, must be read-only and correctly calculated All fields display correctly. Validation errors are shown if invalid data is entered. The total amount matches the value passed from the booking form and cannot be edited. Successful submission should simulate a successful payment.	Fields display with proper validations. Errors prevent submission with incorrect input. Amount is prefilled and locked. On valid input, system proceeds as expected.	Pass
Test Case 11: Payment method : Cash Booking						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
11.1	Ensure that when a Cash Payment method is selected, the user is redirected directly to the confirmation receipt page without going through the payment portal	User has completed the booking form. Cash Payment method is selected. Booking information is valid and complete.	1. Complete the booking form and select Cash Payment. 2. Click Proceed to Checkout. 3. Observe the system behavior after clicking Proceed with Cash Payment.	The user is directly redirected to the confirmation receipt page without being prompted for payment details.	User is successfully redirected to the confirmation receipt page.	Pass
Test Case 12: Booking confirmation receipt						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
12.1	Ensure that after a successful booking with either Online Payment or Cash Payment, both Guest and Registered Users receive the confirmation receipt with booking details and a QR code. The receipt should be available for download and sent via email.	User has completed the booking process (Guest or Registered User). Either Online Payment or Cash Payment method has been selected. The payment has been successfully processed or confirmed (for Cash Payment).	1. Guest User or Registered User completes the booking form. 2. Selects either Online Payment or Cash Payment. 3. If Online Payment is selected, payment is processed successfully. 4. If Cash Payment is selected, user is redirected to the confirmation receipt page without going through a payment gateway. 5. After successful payment or direct cash booking confirmation, observe the booking confirmation receipt page.	User receives a downloadable booking receipt in PDF format (or equivalent). The confirmation email is sent to the user, containing the booking details and embedded QR code. The receipt includes all required booking details (name, email, seat numbers, total price, etc.), and the QR code correctly encodes the booking information. Whether the user selected Online Payment or Cash Payment, the receipt details are consistent and accurate.	Booking confirmation receipt is successfully generated for both Guest and Registered Users. Includes all relevant details, including the QR code. Downloadable receipt is available, and email with the receipt is sent correctly.	Pass
Test Case 13: Bus detail section						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
13.1	Verify all bus details (start, stop, bus number, route number, available seats, ratings, arrival time, departure time, price, and "View Reviews" button) are displayed correctly	User is on the bus detail section page with valid bus data in the database	1. Navigate to the bus detail section 2. Observe each field and button	All fields are visible with accurate data and the "View Reviews" button is present	All fields are visible with accurate data	Pass
Test Case 14: Calendar View for Bookings						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
14.1	Ensure the calendar correctly displays past, upcoming, and cancelled bookings for the user.	User is logged in (Registered User). The system has booking data categorized as: Past bookings (dates before today). Upcoming bookings (dates after today). Cancelled bookings.	1. Log in as a registered user. 2. Navigate to the Booking Calendar or My Bookings page. 3. Observe the calendar interface. 4. Identify booking indicators on specific dates. 5. Hover or click on dates with bookings. 6. Check the details of each booking shown on that date.	Past bookings are displayed in a distinct style. Upcoming bookings are shown in a highlighted style. Cancelled bookings are marked clearly.	The calendar displays bookings accurately categorized and styled. Information for each booking is shown correctly when selected.	Pass

Test Case 15: Booking Cancellation						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
15.1	Verify that bookings can be accessed for cancellation through calendar view	User is logged in and has upcoming bookings	1. Navigate to Calendar View 2. Click on an upcoming booking 3. Check for "Cancel Booking" option	"Cancel Booking" button is visible for upcoming bookings within the calendar view	"Cancel Booking" option is shown for upcoming bookings in the calendar view	Pass
15.2	Verify that cancellation fee is collected via payment portal for cash bookings	Booking was made with cash payment	1. Navigate to calendar view 2. Cancel a cash-paid booking 3. Confirm fee collection process	System redirects to payment portal to collect cancellation fee before finalizing the cancellation	System redirects to dummy payment portal and proceeds after fee is paid	Pass
15.3	Verify that refund process collects bank details for online bookings	Booking was made with online payment and is eligible for refund	1. Cancel an online-paid booking 2. System asks for bank account details for refund 3. Submit the details	System prompts user for refund info (bank name, account number, etc.) and confirms refund request submitted	System collects refund info and confirms refund will be processed	Pass
15.4	Validate cancellation fee computation	User initiates cancellation from calendar	1. Click "Cancel Booking" 2. Observe cancellation fee breakdown before confirming	System displays cancellation fee amount and how it's calculated before final confirmation	System displays cancellation fee correctly and explains calculation	Pass
15.5	Verify that cancellation receipt is generated and emailed	Booking has been canceled successfully	1. Complete booking cancellation 2. Check for downloadable receipt and email	A receipt showing cancellation details and fees is downloadable, and an email with the same is sent	Receipt is generated and sent via email with proper details	Pass

Test case 16: Account Recovery – Forgot Password						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
16.1	Ensure system checks whether the entered email exists in the database	None	1. Go to Forgot Password option in the login box 2. Enter a valid or invalid email	If email exists, send the link; if not, show "Email not found" error	System shows appropriate messages based on whether email exists	Pass
16.2	Ensure reset password link is sent to existing account email	Account with valid email exists	1. Enter registered email 2. Click "Send Reset Link"	Email is sent with a secure password reset link	Email with reset link is received	Pass
16.3	Allow user to reset password using the link	Valid reset link received in email	1. Click reset link 2. Enter new password and confirm password 3. Submit form	Password is updated and user is redirected to home	Password reset successfully and redirected	Pass
16.4	Ensure system handles expired or tampered links	Use expired link	1. Click on an expired reset link	System shows "Link expired or invalid" message	Proper error message displayed	Pass

Test case 17: Email verification using OTP						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
17.1	Ensure OTP is sent to a valid email during registration.	Valid email provided by user	1. Register with valid email. 2. Click "Send OTP"	OTP is sent to the given email address	OTP email received	Pass
17.2	Verify account using correct OTP	Valid OTP received via email	1. Enter correct OTP 2. Submit form	Email is verified and user proceeds or account is activated	OTP accepted and email verified	Pass
17.3	Ensure system rejects incorrect OTP	Invalid or expired OTP entered	1. Enter wrong OTP 2. Click verify	Show "Invalid OTP" or similar error message	Proper error message displayed	Pass
17.4	Ensure OTP can be resent if user didn't receive it	User requests new OTP	1. Click on "Resend OTP" button	New OTP sent to the email	New OTP received in inbox	Pass
17.5	Verify OTP validity is limited to a time period	OTP is older than allowed time (e.g., 5 mins)	1. Wait for OTP to expire 2. Enter expired OTP	System should reject OTP with "OTP expired" message	OTP expired message shown	Pass

Test case 18: Customer Support						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
18.1	Ensure users can navigate to the Contact Support page	User is on any page with navigation bar	1. Click on "Contact Us" from the navigation bar	Contact Support page should open with a feedback/contact form	Contact Support page opened successfully	Pass
18.2	Validate that a properly filled support form can be submitted	Support form is accessible	1. Fill name, email, contact number, message fields correctly 2. Click "Submit"	A confirmation message appears, and admin is notified	Support request submitted, confirmation shown	Pass
18.3	Ensure validation prevents empty form submission/invalid details	Access to support form	1. Leave required fields blank/give invalid inputs 2. Click "Submit"	Validation errors should show next to the empty/invalid fields	Form submission blocked with validation messages	Pass

Madushika B.S. – 22001174 : 25%

User Authentication

- Implemented a comprehensive user registration system.
- Developed secure authentication system with email and password verification.
- Created appropriate error handling for invalid credentials both signup and login.
- Integrated a secure Logout feature.
- Added confirmation dialog to prevent accidental logout.

Profile Management

- Developed the Registered Customer Profile section, allowing users to:
- Implemented drag-and-drop functionality for image uploads
- Implemented image validation for proper formats
- Edit Profile Image
- Update Personal Details
- Implemented field-level validation with specific error messages.
- Delete Account
 - Added two-step confirmation process to prevent accidental deletion

Booking Management

- Enabled users to view their bookings through:
 - Calendar View for both Upcoming, Past and Cancelled Bookings
- For Upcoming Bookings:
 - Developed the functionality to View Ticket
 - Develop digital ticket display with all essential trip information
- For Past Bookings:
 - Developed the functionality to View Tickets
 - Added the ability to Submit Reviews and Ratings

Viewing ratings in bus cards

- Implemented a dynamic Rating System:
- Calculated average ratings based on user ratings.
- Displayed real-time ratings on each bus card.
- Integrated a Review Display system for each bus.

Support and User Interaction

- Added a Contact Support feature to improve user assistance and feedback.

System User Interfaces

- About us page.
- Profile page for the registered users

- Booking history and upcoming bookings retrieval page.
- Login page
- Sign-up page

Test cases : Madushika B.S. - 22001174

Madushika B.S. : 22002202 - Test Cases						
Test Case 1: Guest User Signup						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
1.1	Verify a guest user can successfully complete the signup process	User is on the application homepage and not logged in	1. Click on the login word on the navigation bar 2. Click on the "Sign Up" link in the login popup 3. Enter valid Full Name 4. Enter valid Contact Number (10 digits) 5. Enter valid NIC (9 digits followed by 'V' or 12 digits) 6. Enter valid Address 7. Enter valid Email 8. Enter valid Password (at least 8 characters with 1 uppercase, 1 lowercase, 1 number, and 1 special character) 9. Enter matching Confirm Password	User account is created successfully and user is directed to the guest user search bus page	User successfully registered and redirected to search bus page	Pass
1.2	Verify system validates empty Full Name field	User is on the signup form	1. Leave the Full Name field empty 2. Fill in all other fields with valid data 3. Click Register button	System displays validation error "Name is required" and prevents form submission	Error message "Name is required" displayed	Pass
1.3	Verify system validates Full Name contains only alphabetic characters	User is on the signup form	1. Enter "John123" in the Full Name field 2. Fill in all other fields with valid data 3. Click Register button	System displays validation error "Name should only contain alphabetic characters" and prevents form submission	Error message "Name should only contain alphabetic characters" displayed	Pass
1.4	Verify system validates empty Contact Number field	User is on the signup form	1. Leave the Contact Number field empty 2. Fill in all other fields with valid data 3. Click Register button	System displays error message: "Contact number is required"	Error message "Contact number is required" displayed	Pass
1.5	Verify system validates Contact Number must be exactly 10 digits	User is on the signup form	1. Enter "12345" in the Contact Number field 2. Fill in all other fields with valid data 3. Click Register button	System displays validation error "Contact number should be exactly 10 digits" and prevents form submission	Error message "Contact number should be exactly 10 digits" displayed	Pass
1.6	Verify system validates empty NIC field	User is on the signup form	1. Leave the NIC field empty 2. Fill in all other fields with valid data 3. Click Register button	System displays validation error "NIC is required" and prevents form submission	Error message "NIC is required" displayed	Pass
1.7	Verify system validates NIC format for 9 digits followed by 'V'	User is on the signup form	1. Enter "123456789V" in the NIC field 2. Fill in all other fields with valid data 3. Click Register button	System accepts the NIC format	NIC format accepted	Pass
1.8	Verify system validates NIC format for 12 digits	User is on the signup form	1. Enter "123456789012" in the NIC field 2. Fill in all other fields with valid data 3. Click Register button	System accepts the NIC format	NIC format accepted	Pass
1.9	Verify system validates empty Email field	User is on the signup form	1. Leave the Email field empty 2. Fill in all other fields with valid data 3. Click Register button	System displays validation error "Email is required" and prevents form submission	Error message "Email is required" displayed	Pass

1.10	Verify system validates Email format	User is on the signup form	1. Enter "invalid-email" in the Email field 2. Fill in all other fields with valid data 3. Click Register button	System displays validation error "Please enter a valid email address" and prevents form submission	Error message "Please enter a valid email address" displayed	Pass
1.11	Verify system validates empty Password field	User is on the signup form	1. Leave the Password field empty 2. Fill in all other fields with valid data 3. Click Register button	System displays validation error "Password is required" and prevents form submission	Error message "Password is required" displayed	Pass
1.12	Verify system validates Password complexity requirements	User is on the signup form	1. Enter "simple" in the Password field 2. Fill in all other fields with valid data 3. Click Register button	System displays validation error "Password must be at least 8 characters with 1 uppercase, 1 lowercase, 1 number, and 1 special character"	Error message about password requirements displayed	Pass
1.13	Verify system validates empty Confirm Password field	User is on the signup form	1. Enter valid password in Password field 2. Leave Confirm Password field empty 3. Fill in all other fields with valid data 4. Click Register button	System displays validation error "Confirm password is required" and prevents form submission	Error message "Confirm password is required" displayed	Pass
1.14	Verify system validates Password and Confirm Password match	User is on the signup form	1. Enter "Password123!" in Password field 2. Enter "Password456!" in Confirm Password field 3. Fill in all other fields with valid data 4. Click Register button	System displays validation error "Passwords do not match" and prevents form submission	Error message "Passwords do not match" displayed	Pass
1.15	Verify the eye icon toggles password visibility	User is on the signup form with password entered	1. Enter "Password123!" in Password field 2. Click the eye icon next to the Password field	Password field toggles between masked and plain text	Password visibility toggles as expected	Pass
1.16	Verify system validates Email/NIC is not already used	User is on the signup form, and an account with email "test@example.com" already exists	1. Fill in all fields with valid data 2. Enter " test@example.com " in Email field 3. Click Register button 4. Complete OTP verification	System displays validation error "Email already used" and prevents account creation	Error message "Email already used" displayed	Pass

Test Cases 2: Registered User Login

No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
2.1	Verify that clicking login in navigation bar displays the login form	User is on any page with navigation bar visible	1.Click on "login" in the navigation bar	Login popup appears with email field, password field, and sign in button and links to forgot password and signup form	Login popup appears with email field, password field, and sign in button and links to forgot password and signup form	Pass
2.2	Verify that registered users can login successfully with valid credentials	User has a registered account	1.Click on "login" in the navigation bar 2.Enter valid email address 3.Enter correct password 4.Click "Sign in" button	User is directed to registered user home page	User is directed to registered user home page	Pass
2.3	Verify email field validation for empty input	Login popup is open	1.Leave email field empty 2.Enter any password 3.Click "Sign in" button	Display error message "Error message indicating email is required"	Display error message "Error message indicating email is required"	Pass
2.4	Verify password field validation for empty input	Login popup is open	1.Enter valid email 2.Leave Password field empty 3.Click Sign In button	System displays validation error "Please enter the password" and prevents login	System displays validation error "Please enter the password" and prevents login	Pass
2.5	Verify email format validation	Login popup is open	1.Enter email with invalid format (e.g., "userexample.com", "user@", etc.) 2.Enter any password 3.Click "Sign in" button	Error message indicating invalid email format	Error message indicating invalid email format	Pass
2.6	Verify system response to unregistered email	Login popup is open	1.Enter email that is not registered in the system 2.Enter any password 3.Click "Sign in" button	Error message indicating incorrect credentials or email not found	Display a error message "Please enter a valid email"	Pass
2.7	Verify system response to incorrect password	Login popup is open; User has a registered account	1.Enter registered email address 2.Enter incorrect password 3.Click "Sign in" button	Error message indicating incorrect credentials or password	Display error message "Invalid credentials"	Pass
2.8	Verify password visibility toggle functionality (hide to show)	Login popup is open	1.Enter any password (password should be masked by default) 2.Click on the eye icon	Password becomes visible in plain text	Password becomes visible in plain text	Pass
2.9	Verify password visibility toggle functionality (show to hide)	Login popup is open; Password field is in visible mode	1.Enter any password 2.Click on the eye icon once to show password 3.Click on the eye icon again	Password becomes masked again	Password becomes masked/hidden again	Pass
2.10	Verify ability to close login popup	Login popup is open	1.Click on close button (X) or click outside the popup	Login popup closes and user returns to previous page	Login popup closes and user returns to previous page	Pass
2.11	Verify if email login is case-insensitive	User has registered with email " User@example.com "	1.Enter email "user@example.com" (different case) 2.Enter correct password 3.Click "Sign in" button	Error message indicating invalid email format	Error message indicating invalid email format	Pass

2.12	Verify if password login is case-sensitive	User has registered with password "Password123"	1.Enter correct email address 2.Enter "password123" (different case) 3.Click "Sign in" button	Error message indicating incorrect credentials	Error message indicating incorrect credentials	Pass
2.13	Verify handling of spaces in email input	User has registered with email "user@example.com"	1.Enter email " user@example.com " (with spaces before/after) 2.Enter correct password 3.Click "Sign in" button	Error message display to say invalid symbol	Error message display to say invalid symbol	Pass
2.14	Verify if email is retained after failed login attempt	Login popup is open	1.Enter email "user@example.com" 2.Enter incorrect password 3.Click "Sign in" button 4.Observe email field after error message	Email field retains the entered value while password field is cleared	Email field retains the entered value while password field is cleared	Pass
2.15	Verify login form keyboard navigation	Login popup is open	1.Use Tab key to navigate from email field to password field 2.Use Tab key to navigate from password field to forgot password option 3.Use Tab key to navigate from forgot password to signin button 4.Press Enter key when sign in button is focused	Focus moves correctly between fields and Enter key submits the form	Focus moves correctly between fields and Enter key submits the form	Pass
2.16	Verify login form works with browser auto-fill feature	User has previously saved login credentials in browser	1.Click on "login" in the navigation bar 2.Allow browser to auto-fill credentials 3.Click "Sign in" button	Login form accepts auto-filled credentials and user is directed to registered user home page	Login form accepts auto-filled credentials and user is directed to registered user home page	Pass

Test Case 3: User Profile						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
3.1	Verify that clicking the profile icon navigates to the user profile page	User is logged in	1. Click on the profile icon in the navigation bar	User is directed to profile page displaying: profile image, username, Full Name, Email, Contact Number, Address, and NIC	Profile page displayed with all expected user details	Pass
3.2	Verify user can update their profile image	User is on the profile page	1. Click on the "Edit" button below profile image 2. Upload a new image in the popup 3. Click "Done" button	System displays "Profile image uploaded" message and updates the profile image on the profile page	Profile image updated successfully with confirmation message	Pass
3.3	Verify cancellation of profile image update	User is logged in and on the profile page	1.Click on the "Edit" button under the profile image 2.Click Done button without uploading	Popup closes and profile page is displayed with original image	Popup closes and profile page is displayed with original image	Pass
3.4	Verify system handles invalid file formats appropriately	User is logged in and on the profile page	1.Click on the "Edit" button under the profile image 2.Attempt to upload a file that is not an image (e.g., .pdf, .txt)	Localhost displays an error message "This is not a valid image file. Please upload a JPEG, JPG, or PNG file." indicating invalid file format	Localhost displays an error message "This is not a valid image file. Please upload a JPEG, JPG, or PNG file." indicating invalid file format	Pass
3.5	Verify logout functionality with confirmation	User is on the profile page	1.Click on the "Log out" button 2.Select "Yes" on the confirmation popup	User is logged out and redirected to guest user home page	User is logged out and redirected to guest user home page	Pass
3.6	Verify logout cancellation	User is logged in and on the profile page	1.Click on the "Log out" button 2.Select "No" on the confirmation popup	Confirmation popup closes and user remains on profile page	Confirmation popup closes and user remains on profile page	Pass
3.7	Verify account deletion with confirmation	User is logged in and on the profile page	1.Click on the "Delete account" button 2.Select "Yes" on the confirmation popup	Account is deleted and user is redirected to guest user home	Account is deleted and user is redirected to guest user home	Pass
3.8	Verify account deletion cancellation	User is logged in and on the profile page	1.Click on the "Delete account" button 2.Select "No" on the confirmation popup	Confirmation popup closes and user remains on profile page	Confirmation popup closes and user remains on profile page	Pass
3.9	Verify successful editing of profile details	User is logged in and on the profile page	1.Click on the "Edit" button in the right column 2.Enter valid data for all fields (Full name, Email, Contact number, Address, NIC) 3.Click on the "Done" button	Profile details are updated and displayed on the profile page	Profile details are updated and displayed on the profile page	Pass
3.10	Verify name field validation	User is logged in and on the profile page	1.Click on the "Edit" button in the right column 2.Leave the Full name field empty 3.Fill all other fields with valid data 4.Click on the "Done" button	Error message "Please enter name" is displayed	Error message "Please enter name" is displayed	Pass
3.11	Verify email field validation	User is logged in and on the profile page	1.Click on the "Edit" button in the right column 2.Leave the Email field empty 3.Fill all other fields with valid data 4.Click on the "Done" button	Error message "Please enter email" is displayed	Error message "Please enter email" is displayed	Pass

3.12	Verify email format validation	User is logged in and on the profile page	1.Click on the "Edit" button in the right column 2.Enter invalid email format (e.g., "invalid.email") 3.Fill all other fields with valid data 4.Click on the "Done" button	Error message "Please enter a valid email format (e.g., abc@gmail.com)" is displayed	Error message "Please enter a valid email format (e.g., abc@gmail.com)" is displayed	Pass
3.13	Verify duplicate email validation	User is logged in and on the profile page; Another user account exists with email "existing@example.com"	1.Click on the "Edit" button in the right column 2.Change email to "existing@example.com" (an email already registered by another user) 3.Fill all other fields with valid data 4.Click on the "Done" button	Error message "This email is already registered" is displayed	Error message "This email is already registered" is displayed	Pass
3.14	Verify contact number field validation	User is logged in and on the profile page	1.Click on the "Edit" button in the right column 2.Leave the Contact number field empty 3.Fill all other fields with valid data 4.Click on the "Done" button	Error message "Please enter contact number" is displayed	Error message "Please enter contact number" is displayed	Pass
3.15	Verify contact number format validation	User is logged in and on the profile page	1.Click on the "Edit" button in the right column 2.Enter invalid contact number (e.g., "123" or "12345678901" - not 10 digits) 3.Fill all other fields with valid data 4.Click on the "Done" button	Error message "Please enter a valid contact number" is displayed	Error message "Please enter a valid contact number" is displayed	Pass
3.16	Verify NIC field validation	User is logged in and on the profile page	1.Click on the "Edit" button in the right column 2.Leave the NIC field empty 3.Fill all other fields with valid data 4.Click on the "Done" button	Error message "Please enter a NIC" is displayed	Error message "Please enter a NIC" is displayed	Pass
3.17	Verify NIC format validation	User is logged in and on the profile page	1.Click on the "Edit" button in the right column 2.Enter invalid NIC format (e.g., "123456789" or "12345678901" or "123456789A") 3.Fill all other fields with valid data 4.Click on the "Done" button	Error message "NIC must be exactly 12 digits or 9 digits followed by "V" at the end" is displayed	Error message "NIC must be exactly 12 digits or 9 digits followed by "V" at the end" is displayed	Pass
3.18	Verify 12-digit NIC format validation	User is logged in and on the profile page	1.Click on the "Edit" button in the right column 2.Enter valid 12-digit NIC (e.g., "123456789012") 3.Fill all other fields with valid data 4.Click on the "Done" button	Profile details are updated successfully	Profile details are updated successfully	Pass
3.19	Verify 9-digit+V NIC format validation	User is logged in and on the profile page	1.Click on the "Edit" button in the right column 2.Enter valid 9-digit+V NIC (e.g., "123456789V") 3.Fill all other fields with valid data 4.Click on the "Done" button	Profile details are updated successfully	Profile details are updated successfully	Pass
3.20	Verify duplicate NIC validation	User is logged in and on the profile page; Another user account exists with NIC "987654321V"	1.Click on the "Edit" button in the right column 2.Change NIC to "987654321V" (a NIC already registered by another user) 3.Fill all other fields with valid data 4.Click on the "Done" button	Error message "This NIC is already registered" is displayed	Error message "This NIC is already registered" is displayed	Pass
3.21	Verify address field validation	User is logged in and on the profile page	1.Click on the "Edit" button in the right column 2.Leave the Address field empty 3.Fill all other fields with valid data 4.Click on the "Done" button	Error message "Please enter address" is displayed	Error message "Please enter address" is displayed	Pass
3.22	Verify cancellation of profile details edit	User is logged in and on the profile page	1.Click on the "Edit" button in the right column 2.Make changes to some or all fields 3.Click on cross icon the popup	Popup closes and profile page displays original details (no changes saved)	Popup closes and profile page displays original details (no changes saved)	Pass

Test Case 4 : User Bookings						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
4.1	Verify system behavior when selecting a date with no bookings	User is logged in and on booking page	1.Click on a date in the calendar that has no colored circle (no bookings)	Either right column shows "No bookings for this date" message or no right column appears	Either right column shows "No bookings for this date" message or no right column appears	Pass
4.2	Verify menu options for past bookings	User is logged in and on booking page; Has past bookings	1.Click on a date with past bookings 2.Click on the three-dot icon of a past booking	Menu appears with two options: "View Ticket" and "Add Review"	Menu appears with two options: "View Ticket" and "Add Review"	Pass
4.3	Verify menu options for upcoming bookings	User is logged in and on booking page; Has upcoming bookings	1.Click on a date with upcoming bookings 2.Click on the three-dot icon of an upcoming booking	Menu appears with two options: "Cancel Booking" and "View Ticket"	Menu appears with two options: "Cancel Booking" and "View Ticket"	Pass

4.4	Verify ticket display functionality for past bookings	User is logged in and on booking page; Has past bookings	1.Click on a date with past bookings 2.Click on the three-dot icon of a past booking 3.Select "View Ticket" option	Popup appears showing ticket with mandatory trip data (date, time, bus info, seat numbers, etc.)	Popup appears showing ticket with mandatory trip data (date, time, bus info, seat numbers, etc.)	Pass
4.5	Verify ticket display functionality for upcoming bookings	User is logged in and on booking page; Has upcoming bookings	1.Click on a date with upcoming bookings 2.Click on the three-dot icon of an upcoming booking 3.Select "View Ticket" option	Popup appears showing ticket with mandatory trip data (date, time, bus info, seat numbers, etc.)	Popup appears showing ticket with mandatory trip data (date, time, bus info, seat numbers, etc.)	Pass
4.6	Verify ability to close ticket popup	User is viewing a ticket popup	1.Click outside the popup	Ticket popup closes and user returns to booking page	Ticket popup closes and user returns to booking page	Pass
4.7	Verify review form display	User is logged in and on booking page; Has past bookings	1.Click on a date with past bookings 2.Click on the three-dot icon of a past booking 3.Select "Add Review" option	Review popup appears with 5-star rating system and textarea for comments	Review popup appears with 5-star rating system and textarea for comments	Pass
4.8	Verify rating validation in review form	User has opened the review form for a past booking	1.Leave star rating unselected 2.Enter text in the review textarea 3.Click "Post" button	Error message indicating star rating is required	Error message indicating star rating is required	Pass
4.9	Verify comment validation in review form	User has opened the review form for a past booking	1.Select a star rating (1-5) 2.Leave comment textarea empty 3.Click "Post" button	Error message indicating comment is required or review is submitted	Error message indicating comment is required or review is submitted	Pass
4.10	Verify successful review submission	User has opened the review form for a past booking	1.Select a star rating (1-5) 2.Enter text in the review textarea 3.Click "Submit" button	Review is submitted successfully, confirmation message appears, and popup closes	Review is submitted successfully, confirmation message appears, and popup closes	Pass
4.11	Verify rating calculation after first review submission	Bus has no previous reviews	1.Submit a review with 4-star rating for a specific bus 2.Navigate to the bus card or bus layout page	Bus card displays an average rating of 4.0 stars	Bus card displays an average rating of 4.0 stars	Pass
4.12	Verify average rating calculation with multiple reviews	Bus already has one review with 4-star rating	1.Submit another review with 2-star rating for the same bus 2.Navigate to the bus card or bus layout page	Bus displays an average rating of 3.0 stars ((4+2)/2)	Bus displays an average rating of 3.0 stars	Pass
4.13	Verify system behavior for already reviewed bookings	User has already submitted a review for a specific past booking	1.Click on the date with the already reviewed booking 2.Click on the three-dot icon of the reviewed booking	Either "Add Review" option is disabled	Either "Add Review" option is disabled	Pass
4.14	Verify ability to cancel review submission	User has opened the review form for a past booking	1.Select a star rating and/or enter review text 2.Click close button the popup	Review form closes without submitting the review	Review form closes without submitting the review	Pass
4.15	Verify ability to navigate between months in the calendar	User is on booking page	1.Click on next month button/arrow 2.Click on previous month button/arrow	Calendar view changes to show different months with correct booking indicators	Calendar view changes to show different months with correct booking indicators	Pass

Wickramarathne S.C. – 22002202 : 25%

Employee Access and Schedule Management

- Developed a calendar-based interface enabling employees to view:
 - Past Schedules
 - Upcoming Schedules
- Enabled employees to view all the details related to their past or upcoming schedules.

Delay Reporting

- Implemented a Delay Reporting Form to allow employees to notify administrators about schedule delays.
- Added functionality to view previous delay reports submitted by employees.

Booking Confirmation

- Implemented QR Code Scanning functionality to:
 - Scan customer booking receipts
 - Confirm bookings with speed and accuracy
 - Display booking details including seat assignments and payment status
- Provided an alternative option for manual booking confirmation using:
 - Booking ID
 - NIC number

Bus Layout and Customer Monitoring

- Introduced a Bus Layout View feature for each schedule, allowing employees to:
 - Monitor customer arrival status (Arrived / Not Arrived)
 - View related details such as total booked seats, available seats etc.

Notification and Profile Management

- Developed an internal notification system, enabling employees to receive and view admin messages directly within their dashboard.
- Enabled Profile Management for employees:
 - View personal details
 - Edit and update profile information

System User Interfaces

- All the interfaces related to the conductor

Test cases : Wickramarathne S.C. - 22002202

Test case 1: Employee schedule calendar						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
1.1	Verify calendar loads with correct coloring for past/upcoming schedules	Employee is logged in	1. Log in as an employee 2. Observe the calendar	Calendar is displayed with: - Past schedule dates in a different color - Upcoming schedule dates in another color	Calendar loads correctly with past schedule dates shown in one color and upcoming schedule dates in different color	Pass
1.2	Verify schedule details are displayed when a date with a schedule is clicked	Employee is logged in	1. Click on a date that has a schedule	A box appears beside the calendar showing: - Start Location - Destination - Departure Time - Arrival Time - Route Number - License ID - Total Ticket Price - Price per KM	Popup box appears with correct schedule details for the selected date	Pass
1.3	Verify schedule details popup closes correctly	Schedule details popup is open	1. Click on a date to open the popup 2. Click the close button on the popup	The popup box disappears and calendar remains intact	Close button successfully hides the popup	Pass
1.4	Ensure correct schedule details are shown for each schedule	Employee is logged in	1. Click multiple dates that have schedules 2. Observe the popup details	Each popup displays the correct and corresponding schedule info based on the clicked date	Each date shows the accurate and relevant schedule info in the popup	Pass
Test case 2: Info Cards In Employee Dashboard						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
2.1	Verify that "Total Completed Schedules This Month" card loads	Employee is logged in	1. Log in as an employee 2. Observe the dashboard info cards	Card is visible showing the total number of schedules completed this month	Total Completed Schedules card visible with correct count displayed	Pass
2.2	Verify that "Employee Route" card loads with correct route info	Employee is logged in	1. Log in as an employee 2. Observe the dashboard info cards	Card is visible showing the current route assigned to the employee	Employee Route card visible showing assigned route correctly	Pass
2.3	Verify that "Latest Notification" card loads with recent update info	Employee is logged in	1. Log in as an employee 2. Observe the dashboard info cards	Card is visible showing the latest notification	Latest Notification card visible with the most recent message	Pass
Test case 3: Sidebar						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
3.1	Verify that the correct pages and options are shown in the sidebar	Employee is logged in	1. Log in as an employee 2. Observe the side bar.	Side bar includes the following links: -Dashboard -Scan QR code -Inform Delays -Notifications -Log out All links navigate to the correct pages. Log out link will display the confirm box	Side bar displayed with: -Dashboard -Scan QR code -Inform Delays -Notifications -Log out Navigating works as expected Logging out confirm box is displaying	Pass
Test case 4: Employee Profile						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
4.1	Verify profile information is displayed correctly	Employee is logged in	1. Log in and navigate to Profile page	Profile page displays employee's current information	Profile loads and shows correct employee information	Pass
4.2	Verify edit option is available on profile page	Employee is logged in	1. Navigate to Profile page 2. Check for edit button	Edit button is visible to allow profile updates	Edit option is visible and accessible	Pass
4.3	Verify updating profile with valid data works correctly	Employee is logged in	1. Click Edit 2. Update fields with valid data 3. Save changes	Profile updates and confirmation message is shown; new data is saved and displayed	Profile updates successfully with new data shown after saving	Pass
4.4	Verify validation prevents empty required fields	Employee is logged in	1. Click Edit 2. Clear a required field and attempt to save	Error message shown, and profile is not updated	Field validation works and prevents saving empty required values	Pass
4.5	Verify validation prevents invalid data formats	Employee is logged in	1. Edit profile 2. Enter invalid email or phone format and save changes	Error message shown; profile does not update	Invalid format blocked, and error message displayed	Pass
4.6	Verify Back button navigates to Dashboard	Employee is on profile	1. Open profile 2. Click the Back button	Employee is redirected to Dashboard page	Dashboard page loads successfully after clicking Back	Pass

Test case 5: Scan QR Code						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
5.1	Verify "Scan QR Code" page loads with scanner option	Employee is logged in	1. Navigate to "Scan QR Code" page	Scanner interface is visible and ready to scan	QR scanner is displayed properly	Pass
5.2	Verify scanning a valid QR code displays correct booking details	Employee is logged in and has a valid ticket	1. Go to "Scan QR Code" page 2. Scan a valid customer ticket	Booking details are displayed	Valid booking information appears correctly after scanning	Pass
5.3	Verify booking details shown are accurate and match the database	Employee is logged in	1. Scan a valid QR code on "Scan QR Code" page	Details such as seat number, schedule ID match database entries	Booking info displayed is correct and consistent with stored data	Pass
5.4	Verify scan result is cleared after closing the result view	Employee has scanned a ticket	1. After viewing booking details, click the close button	Booking result is cleared from view and scanner is ready for next scan	Result popup is successfully cleared and scan UI resets	Pass
5.5	Verify system will be navigated to the "Seat Layout Page" when clicked the "View Bus Layout" button	Employee has scanned a ticket	1. After viewing booking details, click the view bus layout button	System is navigated to the seat layout button	Seat layout page is visible as expected	Pass
5.6	Verify Back button navigates to Dashboard	Employee is on scan QR code page	1. Open scan QR code page 2. Click the Back button	Employee is redirected to Dashboard page	Dashboard page loads successfully after clicking Back	Pass
Test case 6: Bus Layout						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
6.1	Verify confirmed seats are shown with correct color coding	QR code scan has confirmed at least one seat	1. Confirm a booking by scanning QR code 2. Open bus seat layout 3. Observe seat color for confirmed bookings	Seats that are confirmed are displayed in the "confirmed color"	Confirmed seats are shown with correct color	Pass
6.2	Verify yet-to-be-confirmed seats are shown with correct color	Some tickets are booked but not confirmed	1. Open bus seat layout without scanning all bookings 2. Observe seats for yet-to-confirmed bookings	Seats with booked but not confirmed tickets are shown in "yet-to-confirm color"	Yet-to-confirmed seats are shown with correct color	Pass
6.3	Verify seat colors update after confirming a new ticket	Employee confirms a new ticket	1. Scan a new valid QR code 2. Open bus seat layout 3. Check seat color change	The corresponding seat moves from "yet-to-confirm" color to "confirmed" color after confirmation	Seat color updates correctly after confirming the ticket	Pass
6.4	Verify that the correct seat numbers match booking info	Employee is viewing bus seat layout	1. Open bus seat layout 2. Compare seat numbers with booking records	Seat numbers and their confirmation status match the database	Seat numbers and colors correctly match the booking records	Pass
6.5	Verify Back button navigates to Scan QR Code page	Employee is on Bus Layout page	1. Open Bus Layout page 2. Click the Back button	Employee is redirected to Scan QR Code page	Scan QR code page loads successfully after clicking Back	Pass
Test case 7: Confirm Bookings Manually						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
7.1	Verify successful manual booking confirmation with valid Schedule ID and NIC	Valid Schedule ID and correct customer NIC are known	1. Go to manual booking confirmation page 2. Enter valid Schedule ID and NIC 3. Click Confirm	Booking is confirmed successfully and confirmation message is displayed	Booking confirmed and success message displayed	Pass
7.2	Verify error shown when invalid Schedule ID is entered	Employee is logged in	1. Go to manual confirmation page 2. Enter invalid Schedule ID and valid NIC 3. Click Confirm	Error message shown: invalid Schedule ID	Proper error displayed when Schedule ID is invalid	Pass
7.3	Verify error shown when invalid NIC is entered	Employee is logged in	1. Go to manual confirmation page 2. Enter valid Schedule ID and invalid NIC 3. Click Confirm	Error message shown: invalid NIC or NIC not matching booking	Proper error displayed when NIC is incorrect	Pass
7.4	Verify both fields are required before confirming	Employee is on manual confirmation page	1. Leave either Schedule ID or NIC empty 2. Click Confirm	Error message shown: "All fields are required" or field validation error	System does not allow confirming with missing fields	Pass
7.5	Verify booking status updates after manual confirmation	Employee manually confirms a booking	1. Confirm a booking manually 2. Open bus seat layout 3. Check seat status	The related seat changes to "confirmed" color after manual confirmation	Seat color updated and booking status changed successfully	Pass
7.6	Verify Back button navigates to Dashboard	Employee is on Manual Booking Confirmation page	1. Open Manual Booking Confirmation page 2. Click the Back button	Employee is redirected to Dashboard page	Dashboard page loads successfully after clicking Back	Pass
Test case 8: Notifications						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
8.1	Verify notification page loads correctly	Employee is logged in	1. Navigate to Notification page	Notification page loads with list, filters, and search bar visible	Page loads with notification list and UI components	Pass
8.2	Verify All / Unread / Read filters work	Employee is on Notification page with both read and unread notifications	1. Click "All", "Unread", and "Read" filters 2. Observe notifications shown	Correct notifications are displayed according to selected filter	Filtering works properly and displays correct notifications	Pass
8.3	Verify Mark All Read button functionality	Employee is on Notification page with unread notifications	1. Click "Mark All Read" button 2. Observe notification statuses	All unread notifications are marked as read	Unread notifications are correctly updated to read	Pass
8.4	Verify search bar functionality	Employee is on Notification page with multiple notifications	1. Type a keyword into search bar 2. Verify filtered results	Notifications matching the keyword are displayed	Search correctly filters notifications based on keyword	Pass
8.5	Verify clicking on notification expands its details	Employee is on Notification page	1. Click on a notification card 2. Observe the expansion	Notification expands to show additional details if available	Notification expands correctly	Pass
8.6	Verify Back button navigates to Dashboard	Employee is on Notification page	1. Click the Back button on top left	Employee is redirected back to Dashboard	Dashboard loads after clicking Back button	Pass

Test case 9: Logout						
No	Objective	Preconditions	Steps	Expected Result	Actual Result	Status
9.1	Verify logout button on Dashboard	Employee is on Dashboard page	1. Click Logout button on Dashboard	Confirmation popup appears with Yes and No options	Confirmation popup displays correctly	Pass
9.2	Verify logout button on Employee Profile	Employee is on Employee Profile page	1. Click Logout button on Employee Profile	Confirmation popup appears with Yes and No options	Confirmation popup displays correctly	Pass
9.3	Verify Yes button functionality in logout popup	Confirmation popup is displayed	1. Click Yes on popup	Employee is logged out and redirected to login page	Employee successfully logged out and redirected	Pass
9.4	Verify No button functionality in logout popup	Confirmation popup is displayed	1. Click No on popup	Popup closes and employee stays on the same page	Popup closes and remains on current page	Pass
9.5	Verify close (X) button functionality in popup	Confirmation popup is displayed	1. Click X button at top right of popup	Popup closes and employee stays on the same page	Popup closes and remains on current page	Pass

Dilmin P.R. – 22000412 : 25%

System Admin Access and Account Management

- Enabled the system admin to Add, View, Edit, and Manage Employee Accounts.
- Developed the feature to View User Details registered within the system.

Bus and Schedule Management

- Designed and implemented functionality to:
 - Add New Buses
 - Manage Existing Buses
- Enabled the system admin to:
 - Add New Routes
 - Define and Update Bus Stops
- Developed interfaces to Add and Update Bus Schedules efficiently.
 - View the booked seats

Booking and Cancellation Records

- Integrated views for the admin to:
 - Monitor Booking Records
 - Track Booking Cancellations

Customer Support and Communication

- Implemented features for the system admin to:
 - Perform Customer Support Tasks
 - Send and Receive Notifications
 - Respond to Reviews and Complaints

Assign Employees to a Schedule

- Assign Drivers and Conductors
 - Assign Available Drivers and Conductors to the schedules that available
- Manage Employee Assigns

Send Notifications to Employees

- Send notification about the status if necessary
- Real-time Adjustments
 - Notify staff if there's a need to swap roles or update timing.
- Special Instructions
 - Send extra trip-specific details like route changes or new pickup points.

Receive Notifications from Conductor

- Inform bus delays to admin

Reply to Reviews

- View and Reply to Reviews

Monthly Report

- Total Bookings
 - Summarize confirmed bookings for the selected month.
- Total Cancellations
 - Include reasons and percentage vs. total bookings.
- Total Income
 - Calculate income after fees and refunds.
- Total Cancellation Fees
 - Display revenue from cancellations.
- Employees, Buses, Schedules
 - Show activity stats for each component.
- Generate PDF
 - Export clean, printable reports for review or records.

Income summary Charts

Quick Review detail boxes

- Route wise income
 - View data side-by-side for different months or routes
- Bookings and cancellations comparisons
 - Visually compare booking vs. cancellation counts

Admin Profile Management

- Enabled the system admin to View and Edit Profile Information through a dedicated interface.

System User Interfaces

- All the interfaces related to the admin.

Test cases : Dilmin P.R. – 22000412

Testcase 01 - Add Fleet					
1.1	Ensure that the License ID entered while adding a fleet follows the correct format	Admin is logged in to the system Admin is on the "Add Fleet" page The add fleet form is visible	1. Enter two Capital letters then '-' symbol then four numbers 2. Fill in all other required fields with valid data 3. Select a route and then it will automatically fill the price and price per km fields 4. Select the passenger capacity 5. Click addfleet button	The system accepts the License ID in the correct format The new fleet is successfully added A success message such as "Fleet added successfully" is displayed	Fleet was added successfully with correct license ID format
1.2	Ensures that after selecting a route number in the selection box other fields fills the routes data automatically	Admin logged in to the system Add fleet form visible routes exists in the system	1. Click the route no selectionbox 2. Select a route number	Start, Destination, Price, Price per km fields fill with the corresponding route number's values	fields are fills with data according to the route number
1.3	Verify after submitting the form data stored in the database	Entered the valid data into the form	1. Click the 'Add Bus' button	After click on the Add Bus button popup message displays and show 'Bus Added Successful' and redirect to the fleet file	popup message displays with successful message and redirect into the fleet file
Testcase 02 - Fleet					
2.1	After enter the fleet file displays the all buses details in a table	Admin logged in to the system Buses exists on the system	1 Goto the fleet page	Displays the all buses in the system	Display the all buses in the system
2.2	Ensure that input a route number and after click on the 'Search' button display the all buses in the that route and the bus count	Goto the fleet file input the a route number in the search field	1. put the 001 as the route number 2. Click the search button	After click on the search button displays a popup message with total bus count and click on 'OK' then shows the details of that buses	Shows the total count in the popup message and click 'OK' shows the that bus details in the table
2.3	Ensure that cannot update or delete fleets when its have a schedule	Goto the fleet view table Some Busses added to schedules	1. Try to update or delete a bus	Scheduled buses update, delete columns displays as the 'scheduled'	Cannot update or delete a bus that has a schedule
2.4	Ensure the bus hasn't a schedule can update or delete	Goto the fleet view table Some Busses added to schedules	1. Try to Update or delete a bus	Can update or delete the bus that hasn't a schedule when its Update redirect to the update form with the corresponding data to fields when delete give a warning popup message to delete or not	Can update or delete the bus that hasn't a schedule
Testcase 03 - Add Schedule					
3.1	Ensures that the can not add two or multiple schedules to a one bus	Admin logged in Goto the add schedule form Buses exists in the system	1. Click the License id selection box 2. Select a Bus	Displays the buses that haven't assigned to a schedule	Displays the buses that haven't assigned to a schedule
3.2	Ensure the Duration calculate in correct format and correct value	Admin logged in Goto the add schedule form Buses exists in the system	1. Select a Departure Time 2. Select a Arrival Time 3. Consider the AM and PM departure 10:30 PM arrival 3:30 AM	Duration fields Shows the correct value and correct format of the time(05:00:00)	Duration fields Shows the correct value and correct format of the time(05:00:00)
Testcase 04 - Schedules					
4.1	Ensure that when click on a row of the schedule table then displays the booked seats	Admin logged into the system Goto the schedule page Schedules and booked seats exists	1. Goto schedule table 2. Click a row	Expand the row and shows the booked seats below of the row	Expand the row and shows the booked seats below of the row
4.2	Ensure the can not delete or update the schedule that have bookings	Admin is logged in Schedule with bookings exists	1. Navigate to Schedule List 2. Click on Delete or Update for a schedule with active bookings	System shows a message like "Cannot update/delete schedule with existing bookings" Action is blocked	schedule delete/update prevented for booked seats schedules
4.3	Ensure the system admin can update or delete schedules that have no bookings	Admin logged in Schedules with no bookings exists	1. Navigate to schedule List 2. Click on Delete or Update for a schedule with no bookings	Navigate to the Updation form when it is update or display a confirmation message box for delete	can update or delete schedules that have no bookings
4.4	Ensure the schedule page shows the current schedules in the system	Admin logged in Navigate to the schedule page	1. Navigate to the Schedule page	Shows the current schedules details in a table	shows the current schedules in the system
Testcase 05 - Employees					
5.1	Ensure the shows the employees in the system Admins, Drivers, Conductors	Admin logged in Navigate to the employee page	1. Navigate to the Employee page	Shows the employee details in the employee table	Shows the employee details in the system
5.2	Ensure the system admin can update the details of the employees	Admin logged in Navigate to the employee page	1. Goto Employee Page 2. Click on the Update button in the row	Redirect to the updation form	System Admin can update the employee details
5.3	Ensure the system admin can delete a employee	Admin logged in Navigate to the employee page	1. Goto Employee Page 2. Click on the Delete button in the row	Popup a Confirmation box to ask the deletion Click on Yes delete the employee	System can delete a employee
5.4	Ensure that the Cannot change the role in the updating	Admin logged in Navigate to the employee page	1. Goto Employee Page 2. Click on the Update button in the row	Role Selection is not visible	Cannot update the role of an employee

	Testcase 6 - Add Employee					
6.1	Ensures the NIC number length is 12 digits	Admin logged in Navigate to the add employee page	1. Give the inputs as 12 digits number and 13 digits number 2. Try to add the employee	when 12 digits number is accepted and 13 digits number reject and give popup message NIC number should ne 12 digit number	NIC number 12 digits numbers accepted	Pass
6.2	Ensure the NIC number only digits	Admin logged in Navigate to the add employee page	1. Input the NIC with characters	Popup message shows the NIC is only digits	NIC numbers 12 digit only	Pass
6.3	Ensure the NIC accept the 'V' type of NIC numbers with nine numbers	Admin logged in Navigate to the add employee page	1. Input a NIC with the last number as 'V' and nine numbers	Popup message shows the Employee added successful	Can add the NIC with 'V'	Pass
6.4	Ensure the mobile number is in a correct format	Admin logged in Navigate to the add employee page	1. Input a 10 digit number	Popup message shows the Employee added successful	Popup message shows the Employee added successful	Pass
6.5	Ensure the valid email	Admin logged in Navigate to the add employee page	1. input the admin@gmai.com	Popup message shows the Employee added successful	Popup message shows the Employee added successful	Pass
6.6	Ensure the valid Password which password have at least one Capital letter, longer then 8 characters, contain sysmbl, contain a number	Admin logged in Navigate to the add employee page	1. input the password Rashmika@1234 2. click on add button	Popup message shows the Employee added successful	Popup message shows the Employee added successful	Pass
6.7	Check the password and confirm password maching	Admin logged in Navigate to the add employee page	1. input the password 2. put a wrong password in the confirm password	Popup message box displays the password and confirm password should match	Popup message box displays the password and confirm password should match	Pass
	Testcase 7 - Bookings					
7.1	Ensure the bookings page view the past booking records	Admin logged in Navigate to the Booking page	1. Click the selection box select a record	Views the corresponding booking or cancellation table	Views the corresponding booking or cancellation table	Pass
7.2	Ensures the bookings can filter by this month, this week, yesterday, today	Admin logged in Navigate to the Booking page Bookings exists in the system	1. Select the checkbox	Booking records shows by this month, this week, yesterday and today	Booking records shows by this month, this week, yesterday and today	Pass
	Testcase 8 - Reports					
8.1	Ensure the report shows the total, income, total bookings, total cancellations, total employees, total users, total schedules in the system	Admin logged in Navigate to the report page Data should exits	1. Goto report page 2. navigate through the report interface	view the all details in income, bookings, cancellations, employees, schedules	view the all details in income, bookings, cancellations, employees, schedules	Pass
8.2	Ensure the change the details with the month and year	Admin logged in Navigate to the report page Data should exits	1. Goto report page 2. Click the selct month, year 3. Select a year	Details change the acording to the month	Details change the acording to the month	Pass
8.3	Ensure the when click the 'Generate PDF' generate a pdf for that month	Admin logged in Navigate to the report page Data should exits	1. Goto report page 2. Click the selct month, year 3. Select a year 4. Click Generate PDF	Download a PDF that contain the details of the system summary	Download a PDF that contain the details of the system summary	Pass
	Testcae 9 - Notifications					
9.1	Ensure the shows delay notifications	Admin logged in Navigate to the Notifications page	1. Goto notifications page	Shows the notification table	Shows the notification table	Pass
9.2	Ensure the system admin can marked the delays	Admin logged in Navigate to the Notifications page Delay messages exits	1. Click on the mark button	Changed to 'Marked'	Changed to 'Marked'	Pass
	Testcase 10 - Send Notifications					
10.1	Ensure the when click on the select employees shows the all employee id and after select a number auto fills employee name and role feilds	Admin logged in Navigate to the send notifications Employees exits	1. Click on the select employee 2. Select a employee	Auto fills the employee details	Auto fills the employee details	Pass
10.2	Ensure the when click on 'Send Notification' mesage insert in to the database	Admin logged in Navigate to the send notifications Employees exits	1. Click on the select employee 2. Select a employee 3. Type the message 4. Click 'Send Notification'	Popup message displays the notification send successfull	Popup message displays the notification send successfull	Pass
	Testcase 11 - Reviews					
11.1	Ensure the Views the reviews in the Reviews page	Admin logged in Navigate to the Reviews page	1. Goto reviews page	Shows the review cards	Shows the review cards	Pass
11.2	Ensures the system admin can reply to the reviews	Admin logged in Navigate Review page Reviews exists	1. Click a review Card 2. type the reply and sumbit	Popup message shows the reply sent succesful	Popup message shows the reply sent succesful	Pass
	Testcase 12 - Add Assigns					
12.1	Ensure the selecting a schedule that have no employees	Admin loggedin Navigate to the Add assigns page Schedules exsits	1. Click on the select schedule	Views the schedules that have not assigned employees	Views the schedules that have not assigned employees	Pass
12.3	Ensure the selecting employees for schedule that haven't a schedule yet	Admin logginin Navigate to the Add assigns page Employees exsits	1. Click on the select Driver, Conductor	Views the employees that not assinged	Views the employees that not assinged	Pass
12.4	Ensure the employees added to aschedule after click on the 'Add Assign'	Admin loggdedin Navigate to the Add assigns page Employees exsits	1. Select a schedule 2. Select Driver 3. Select a Conductor	popUp message shows the employee added scessful	popUp message shows the employee added scessful	Pass
	Testcase 13 - Assign					
13.1	Enaure views the employees that assigned to schedules	Admin logged in Navigate to the Assigns	1. Goto Assigns	Views the assign table	Views the assign table	Pass
13.2	Ensures the system admin can update and delete the assigns	Admin logged in Navigate to the Assigns	1. Goto Assigns 2. Click Update, Delete in the row	Redirect to the Updation form for update and confirmation message popup when delete	Redirect to the Updation form for update and confirmation message popup when delete	Pass

	Testcase 14 - Customer Support					
14.1	Ensures view the customer support requests	Admin logged in Navigate to the Contact page	1. Goto Contacts	Shows the customer support requests which the replied ones with green and not replied ones with red	Shows the customer support requests which the replied ones with green and not replied ones with red	Pass
14.2	Ensures the system admin can reply to requests	Admin logged in Navigate to the Contact page Requests exists	1. Click on a request	Opens the gmail message send box with formatted message , user name for user email	Opens the gmail message send box with formatted message , user name for user email	Pass
Testcase 15 - Dashboard						
15.1	Ensures the admin can view the summary details boxes with data	Admin logged in Data exits	1. Goto Dashboard	Shows the current month total income, total bookings, registered customers in the system, ongoing schedules	Shows the current month total income, total bookings, registered customers in the system, ongoing schedules	Pass
15.2	Ensures the admin can view the summary charts	Admin logged in Data exits	1. Goto Dashboard	Shows the first chart with top 5 routes with income Second chart shows the daily bookings and cancellations	Shows the first chart with top 5 routes with income Second chart shows the daily bookings and cancellations	Pass
15.3	Ensures the dashboard is mobile responsive	Admin logged in Data exits	1. Goto Dashboard 2. Minimize the page	Minimizing the for fixed size sidebar hide and cards,charts views columns vise	Minimizing the for fixed size sidebar hide and cards,charts views columns vise	Pass
Testcase 16 - Admin Profile						
16.1	Ensure shows the admin details in the profile	Admin logged in Navigate to the Profile	1. Goto Profile	Display the admin details in the profile details box	Display the admin details in the profile details box	Pass
16.2	Ensure the update the admin profile	Admin logged in Navigate to the Profile	1. Goto Profile 2. Click the edit button below the picture	Opens a browse file box to select a picture, after select a picture and it added to the page	Can update the profile picture	Pass
Testcase 17 - Routes						
17.1	Ensures the shows the routes in the system	Admin logged in Navigate to the Routes page	1. Goto Route Page	Views the the current routes details in the route table	Views the the current routes details in the route table	Pass
17.2	Ensures the system admin can update the routes details	Admin logged in Navigate to the Routes page Click the update button in the row	1. Goto Route Page 2. Select a Route Row 3.Click the Update button	Display the update form with corresponding data to that route	Display the update form with corresponding data to that route	Pass
17.3	Ensures the system admin can delete a route	Admin logged in Navigate to the Route Page Click the delete button in the row	1. Goto Route Page 2. Select a Route Row 3. Click the Update Button	Open a Confirmation box yes, no to select a option then click yes delete the route	Open a Confirmation box yes, no to select a option then click yes delete the route	Pass
Testcase 18 - Addroute						
18.1	Ensures the system admin can add a new route	Admin logged in Navigate to the Addroute table	1. Goto add route page 2. Input the valid data 3. Input the routeNumber, route name, start destination locations, Price of the route, Price per km	Open the success message box and route added successful	Open the success message box and route added successful	Pass
Testcase 19 - Logout						
19.1	Ensure the after logging out naviage to the guest page	Admin logged in	1. Click the logout button 2. Select Yes	Logged out successfull and navigate to the geust page	Logged out successfull and navigate to the geust page	Pass