RouteFlow: Iteration 2 Report

Project Team

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Chapter 1

Introduction

With the strong ground covered in Sprint 1, Sprint 2 of RouteFlow is centered around increasing user functionality and improving overall user experience. This sprint is all about working on major features from the user stories such as the feature of students being able to view and manage their profile, access the frequently asked questions (FAQ), and monitor their fee details seamlessly. The app development also includes the creation of a dynamic route management system, through which students can view and filter bus routes based on location and timing. Facilities for generating fee challans and viewing payment status have also been included. By the end of Sprint 2, the app will feature a better enriched and interactive interface. It will offer students better necessities needed to efficiently manage their transport and financial details.

Chapter 2

Sprint 2: User Stories

User stories serve as the foundation for understanding the key functionalities that need to be implemented in RouteFlow. In this sprint, we focused on special features such as fee generation, route updating, and user interaction with their profile. Each user story is broken down into sub-user stories to ensure clarity in requirements and implementation.

2.1 Contact

User Story: As a Student, I want to view the contact information of the bus service so that I can reach out for inquiries or assistance.

2.2 Feedback

User Story: As a user, I want to rate the bus service from 1 to 10 so that I can share my experience and satisfaction level.

Sub-User Stories:

- A scale from 1 to 10 is displayed.

- User can select only one rating.

- A confirmation appears after submitting the rating.

2.3   Reserve Seat

User Story: As a user, I want to view and select available seats, and receive confirmation after reserving one, so that I can successfully book a seat on the bus.

Sub-User Stories:

- Reserved seats are marked and unavailable.

- Users can select only one available seat.

- A visual seat layout shows seat positions.

- A confirmation message appears after booking

2.4   FAQ

User Story: As a student, I want to access a Frequently Asked Questions (FAQ) page so that I can quickly find answers to common queries.

Sub-User Stories:

- Dropdown list of frequently asked questions is available.

- Dropdown expands and collapse on clicks.

- FAQ page is easily accessible and responsive.

2.5   Fee Details

User Story: As a student, I want to view my fee details so that I can check my payment status.

Sub-User Stories:

- Table of past and current fees is displayed.

- Important information of the fees such as id, semester, due date and amount shown.

- Checkboxes indicating if fees is paid or not.

2.6 Generate Fee

User Story: As a student, I want to generate a fee challan so that I can pay my outstanding dues.

Sub-User Stories:

- Pending fees are displayed before generating challan.

- Option for updating route is available before generating challan.

- The challan can be downloaded in PDF format.

Chapter 3

Design

In Sprint 2, the design phase focuses on key diagrams to outline system interactions and structure. The **use case diagram** defines user actions, while the **sequence diagram** illustrates the flow of these actions within the system. The **class diagram** structures the core components, ensuring efficient data handling and interaction. Together, these diagrams provide a clear blueprint for developing and integrating new features.
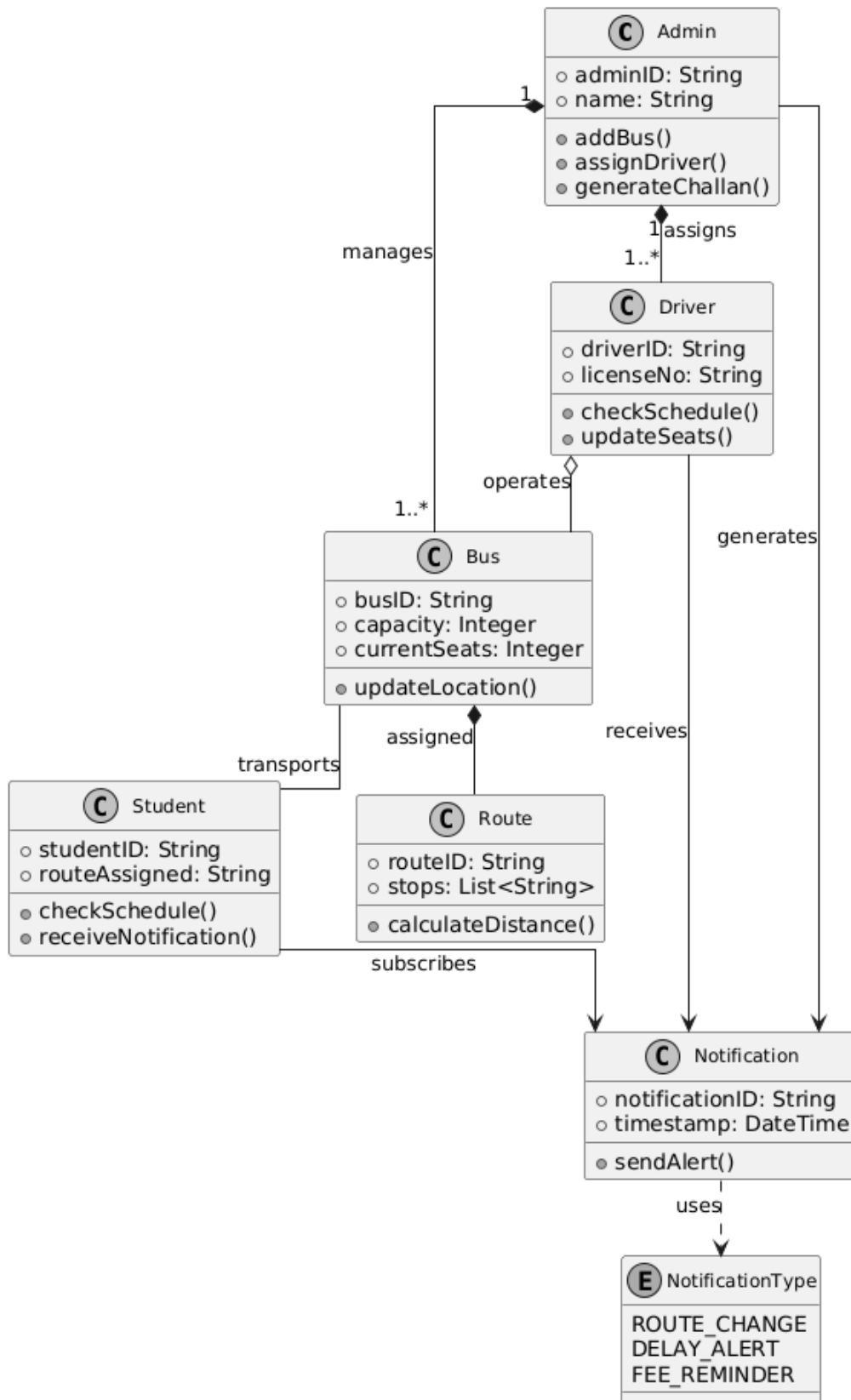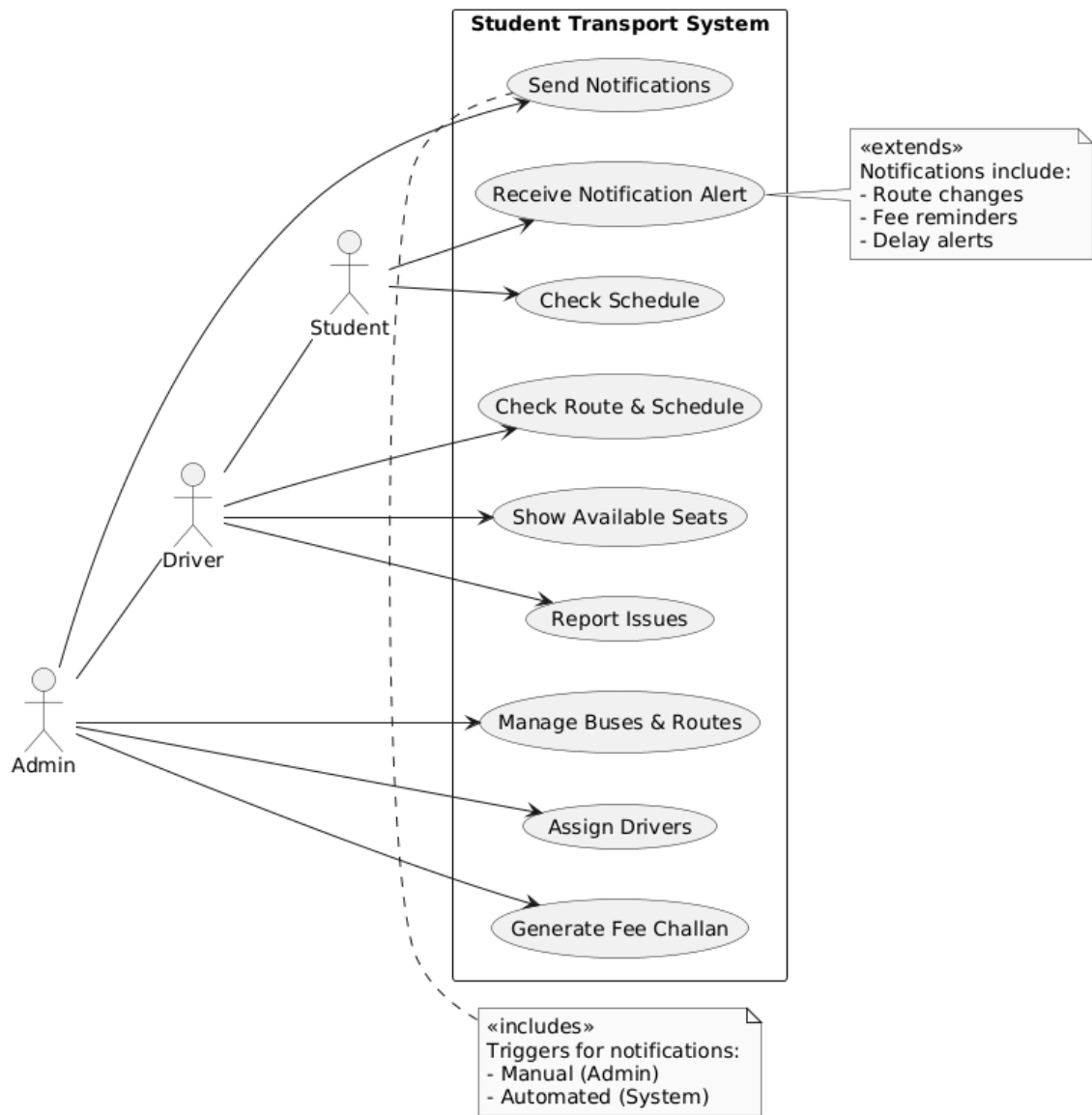
Figure 3.1: Class diagram showing an overview of Project

Student Transport System

- Send Notifications
- Receive Notification Alert
  - «extends»
    Notifications include:
    - Route changes
    - Fee reminders
    - Delay alerts
- Check Schedule
- Check Route & Schedule
- Show Available Seats
- Report Issues
- Manage Buses & Routes
- Assign Drivers
- Generate Fee Challan

Student

Driver

Admin

«includes»
Triggers for notifications:
- Manual (Admin)
- Automated (System)

Figure 3.2: Use Case Diagram of Project
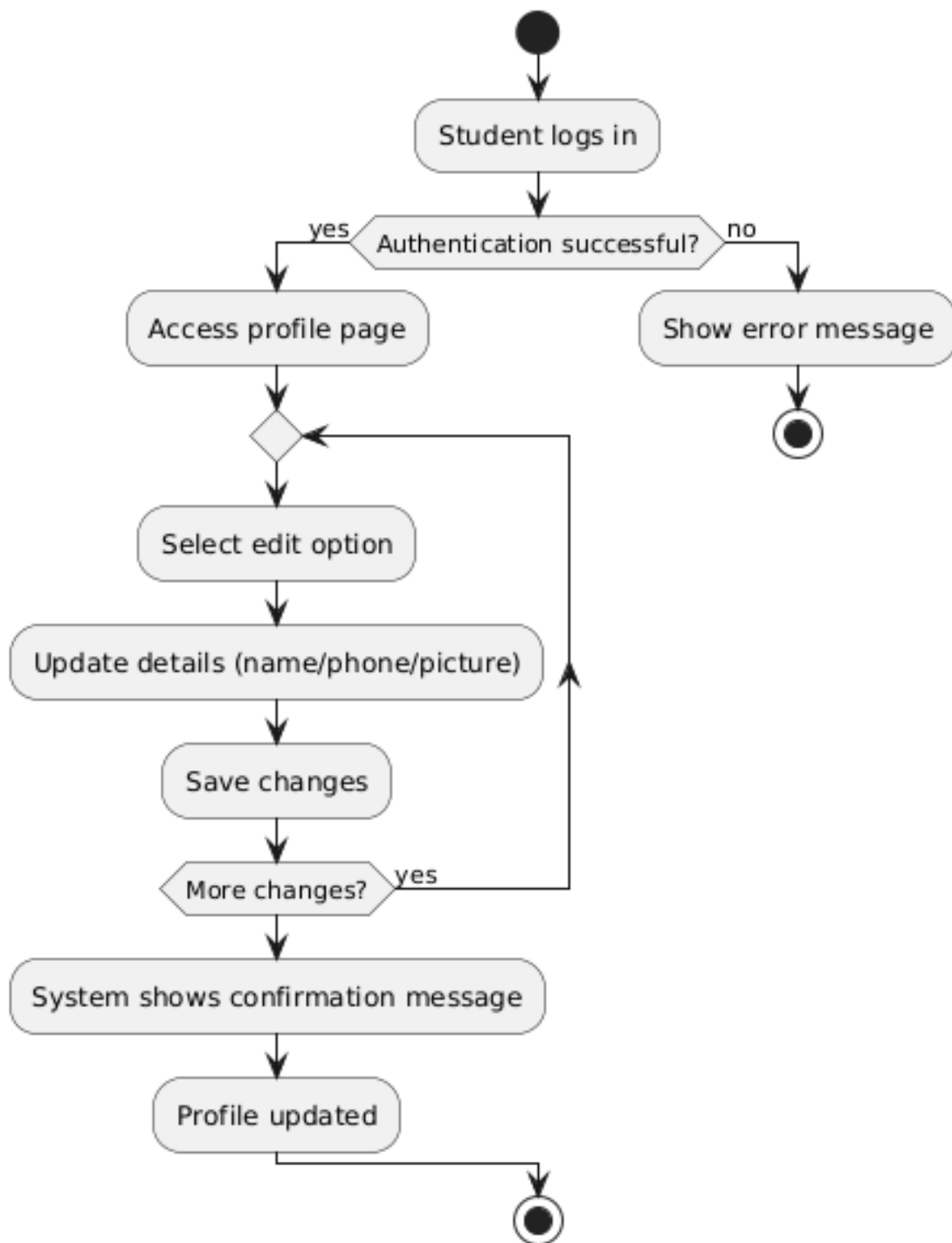
Figure 3.3: Activity Diagram 1: View and Edit Profile
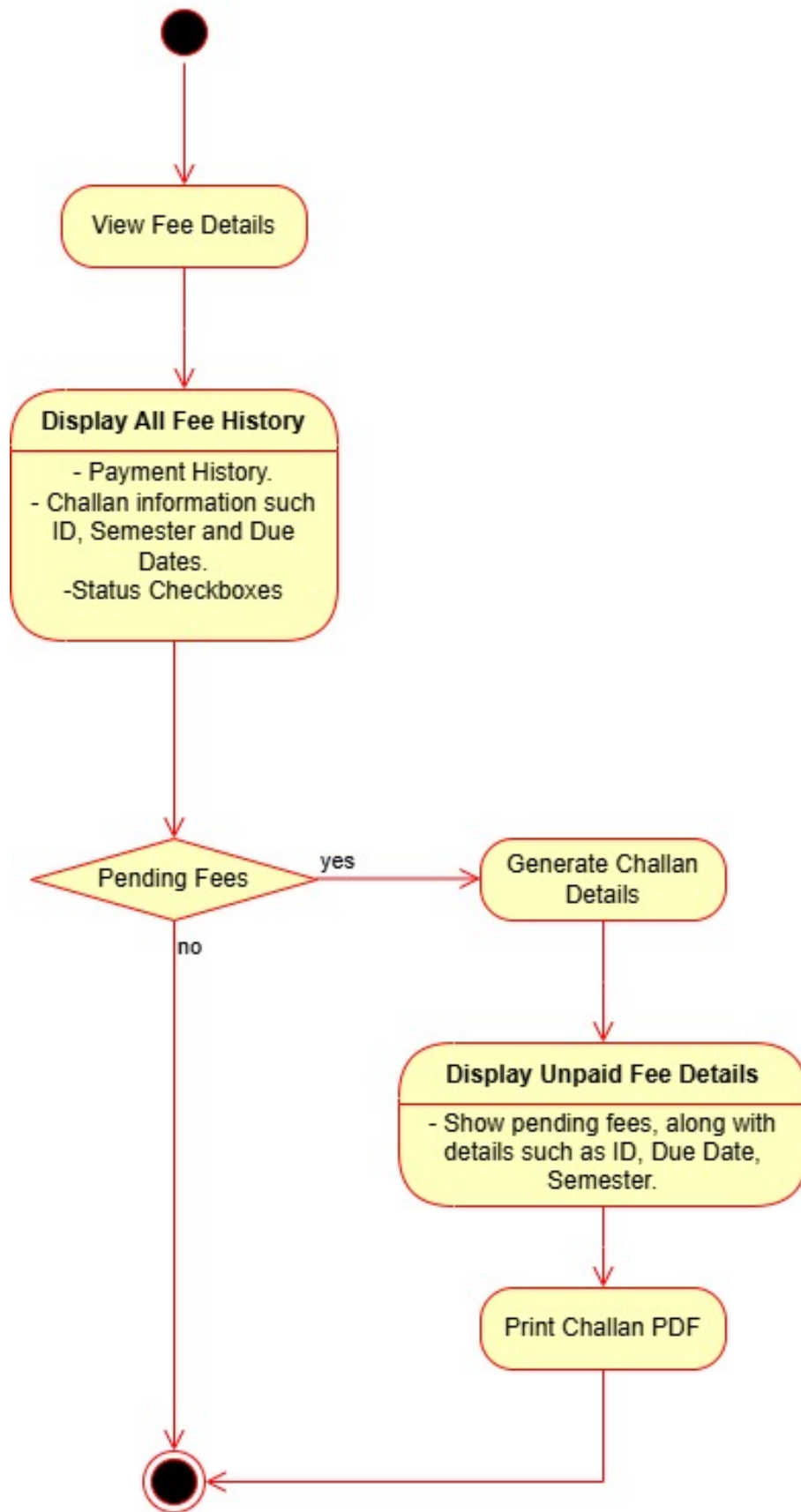
Figure 3.4: Activity Diagram 2: View Fee Details
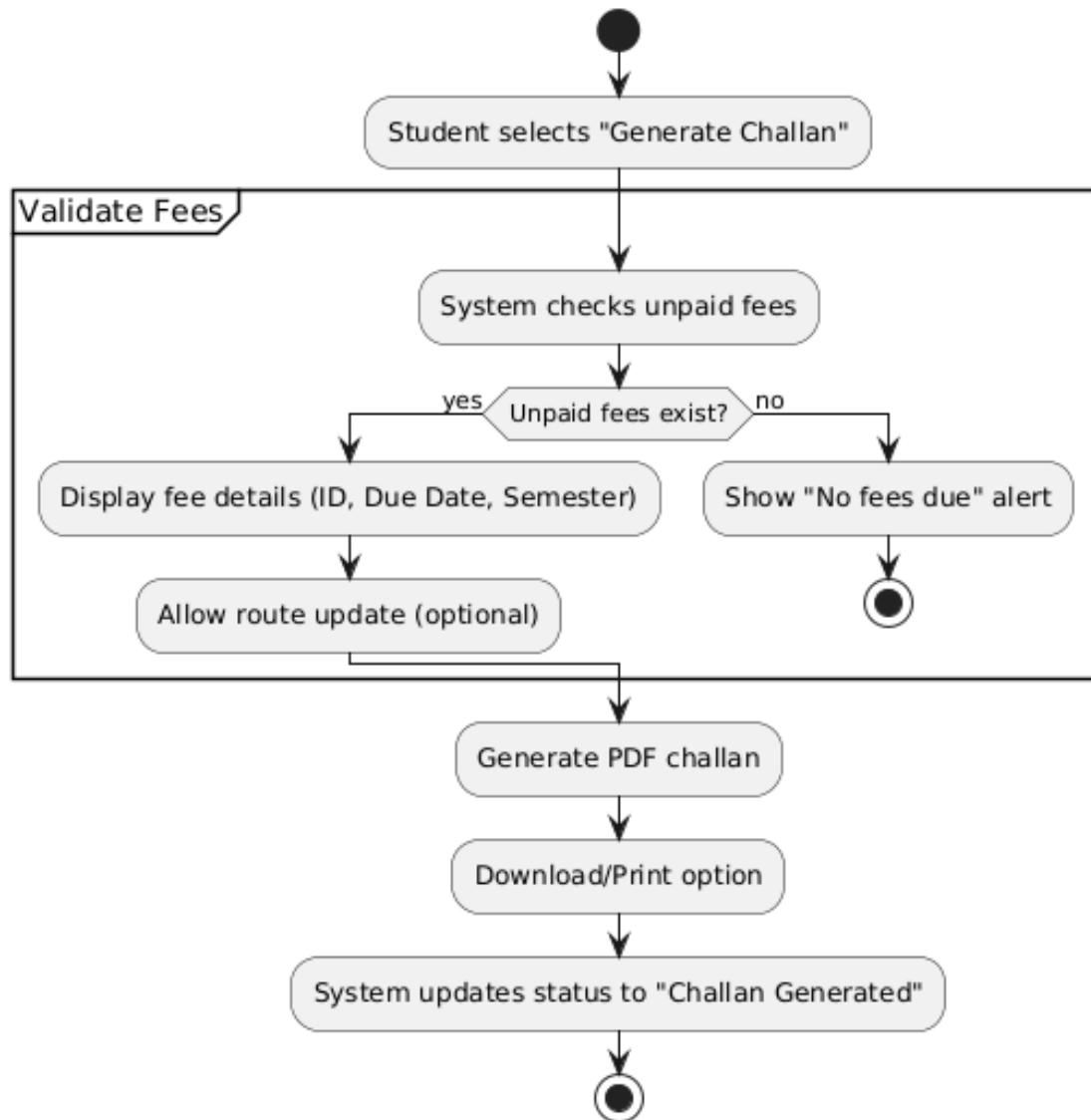
Figure 3.5: Activity Diagram 3: Generate Fee Pdf
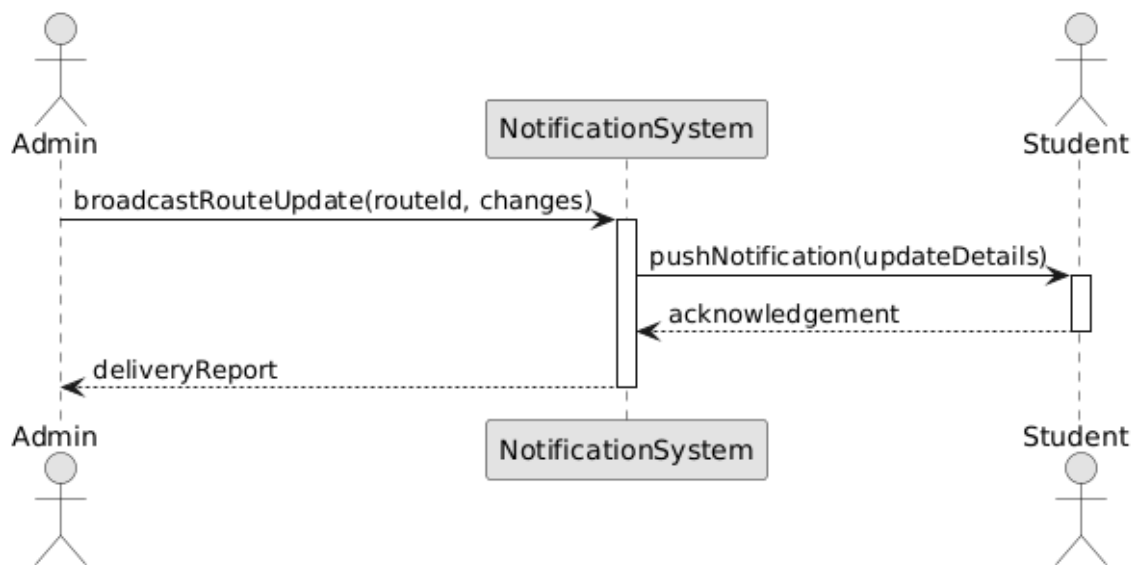
Figure 3.6: Sequence Diagram 1: Notification System
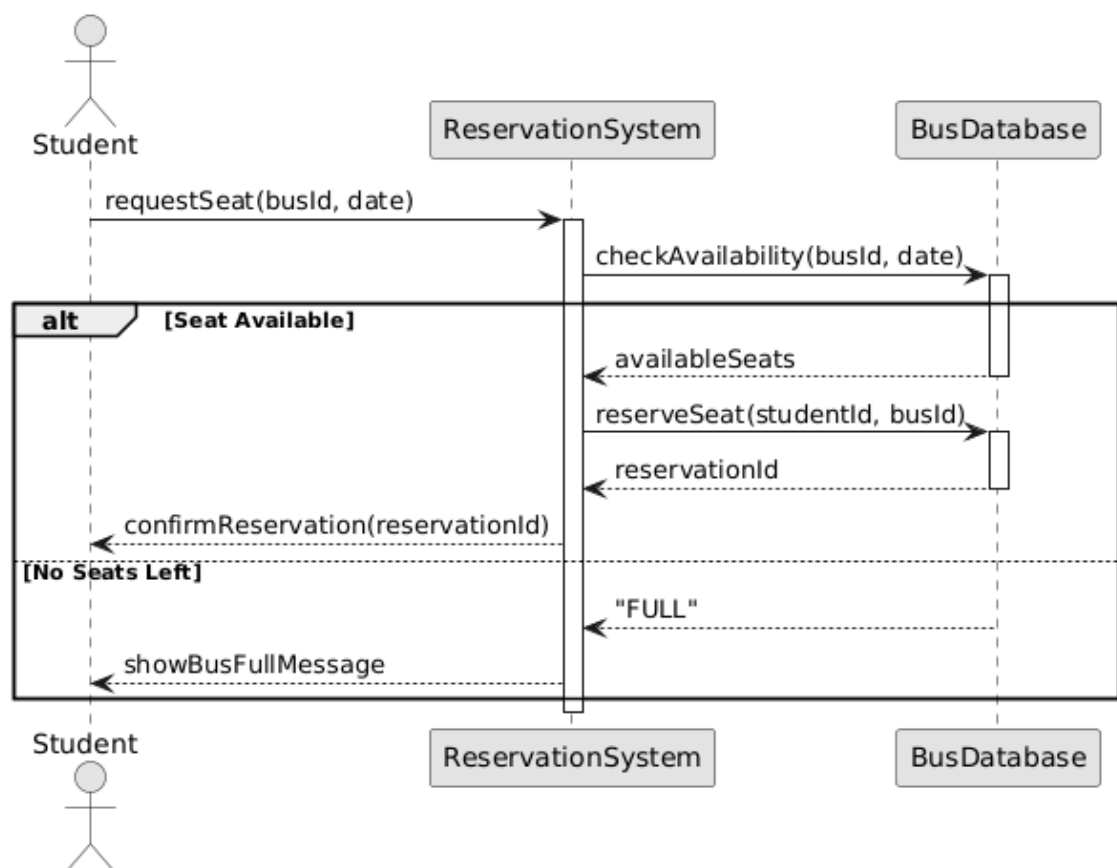
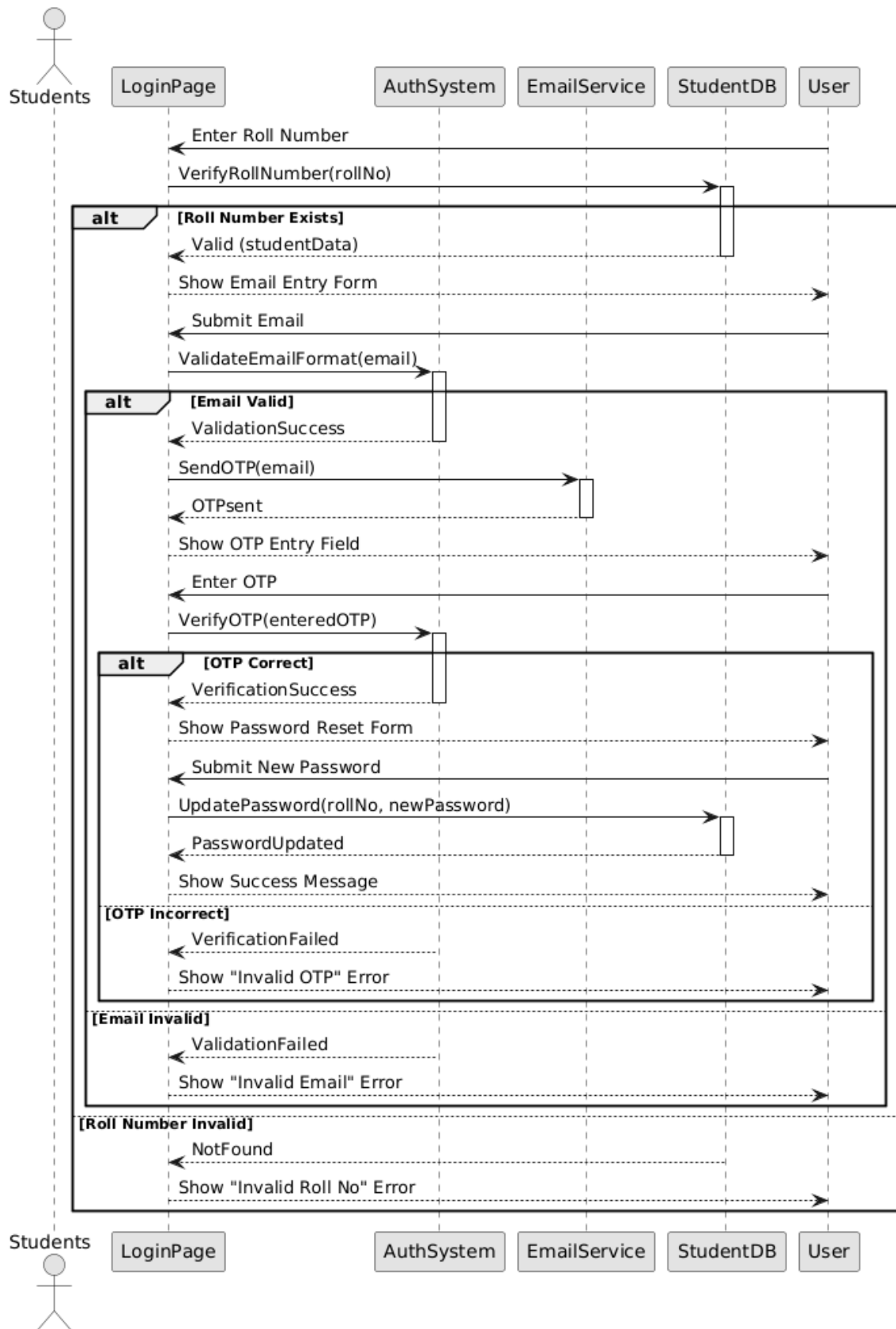Figure 3.7: Sequence Diagram 2: Reservation System

Figure 3.8: Sequence Diagram 3: Authentication System

Chapter 4

Sprint Workflow Management via Scrum Board

In this sprint, we utilized Trello to manage our Scrum workflow effectively. Trello helped us organize tasks, track progress, and ensure that all deliverables were completed within the sprint timeline. Below, we provide a detailed breakdown of our sprint activities along with relevant snapshots.

4.1   Snapshot 1: Sprint Planning

During the initial sprint planning phase, we identified the key features to be implemented and created a structured backlog. The following tasks were defined:

- Created and populated the sprint backlog with user stories

- Defined sprint objectives

- Assigned tasks to team members based on priority and complexity

- Set up the workflow structure in Trello, categorizing tasks into:

  - Sprint Backlog
  - In Progress
  - Done
  - Testing
  - Leftover

4.2 Snapshot 2: Mid-Sprint Progress

At the mid-sprint stage, substantial progress had been made on core functionalities. The development workflow was actively progressing, and tasks were moved between columns based on their completion status. The following milestones were achieved:

- **FAQ**: Successfully implemented FAQ page

- **Fee Generation**: Successfully implemented fee generation functionality

- **Contact**: Successfully implemented contact page

- **Feedback**: Successfully implemented feedback page

4.3 Snapshot 3: Sprint Completion

By the end of the sprint, most of the planned user stories were implemented, and a testing phase was initiated to validate functionalities. The final sprint outcomes were:

- **Fees**: Fully tested and functional for student access

- **FAQ**: Completed with a smooth user interface

- **Contact**: Completed with a smooth user interface

- **Reserve**: Completed with a smooth user interface

- **Feedback**: Completed with a smooth user interface

4.4 Conclusion

The sprint was successfully executed with significant progress on, the main objectives of this sprint were achieved. Moving forward, feedback from testing will be incorporated, and the remaining features will be prioritized in the upcoming sprint.
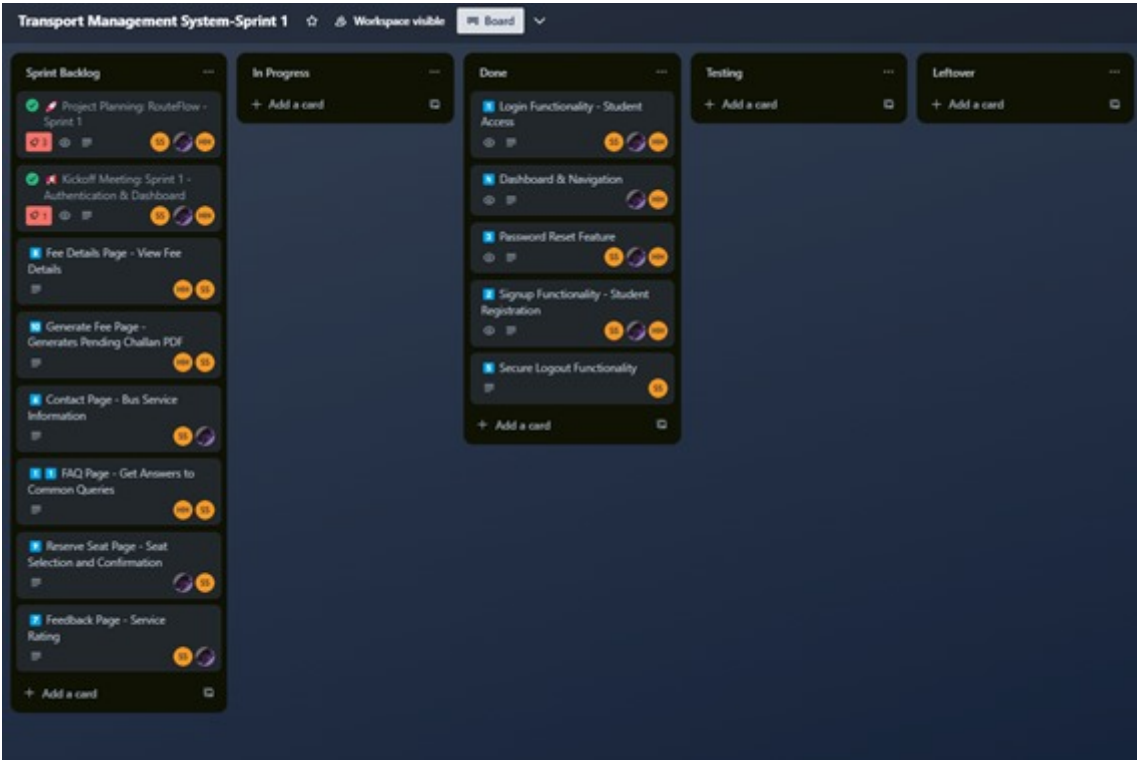
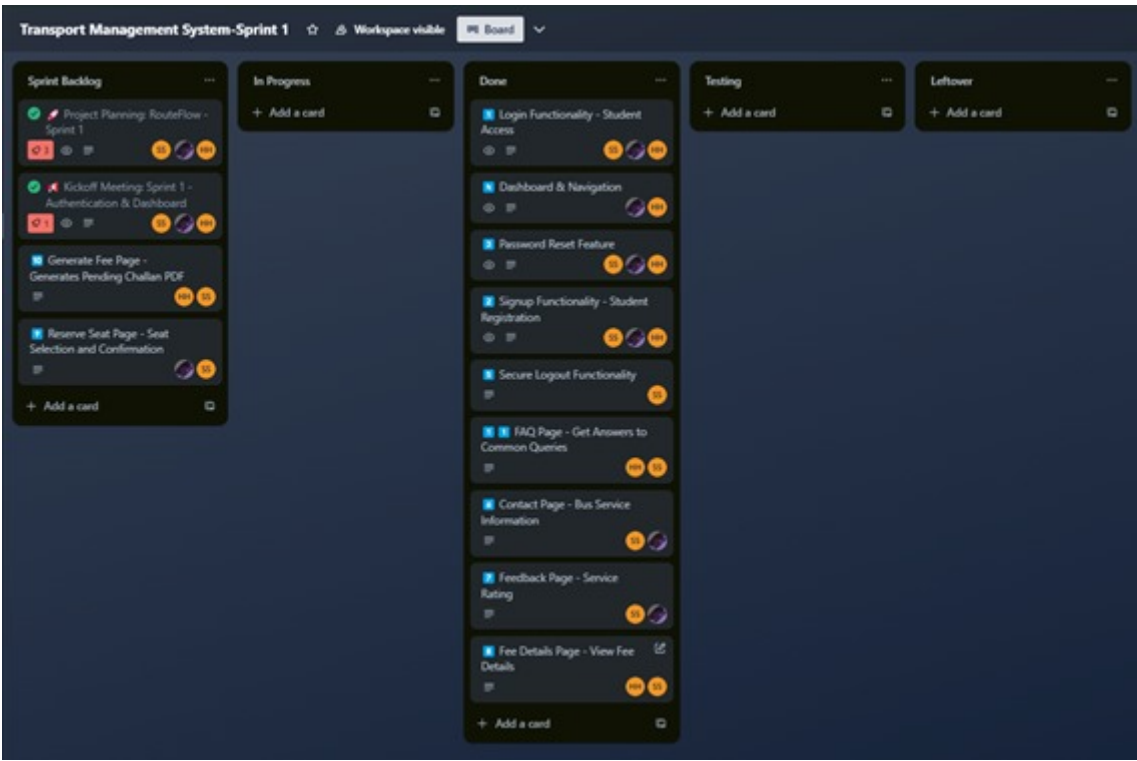Figure 4.1: Sprint Planning Phase: Task Assignment and Backlog Setup

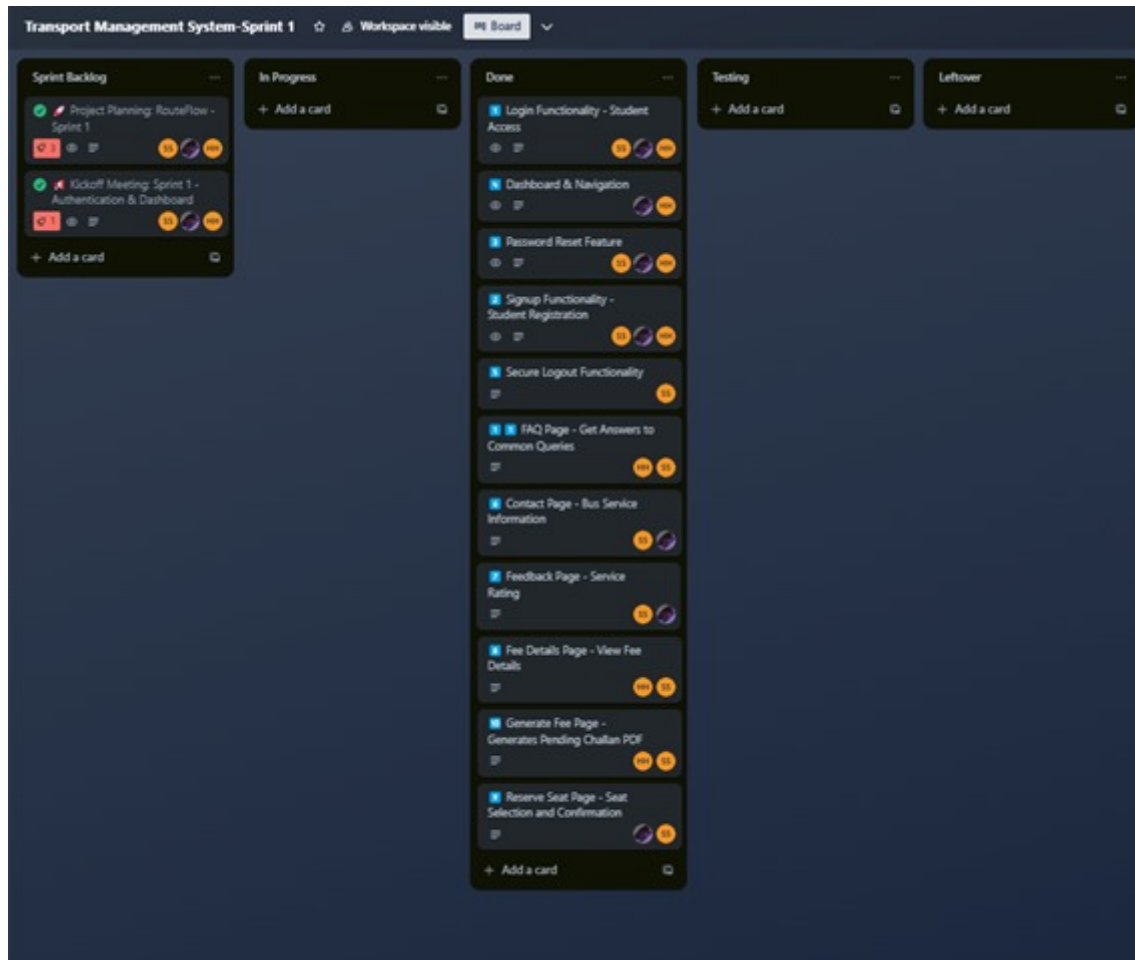Figure 4.2: Mid-Sprint Progress: Active Development and Task Movement

Figure 4.3: Sprint Completion: Task Completion and Testing Phase

Chapter 5

Work Division

The tasks in this sprint were equally distributed among the three team members, ensuring an efficient and balanced workflow:

Table 5.1: Team Responsibilities and Contributions

Team Member	Responsibilities and Contributions
Haider Abbas	- Front-End and UI implementation for: - Contact Page - Feedback Page - Reserve Seat Page
Hamd-Ul-Haq	- Front-End development for: - Fee Details Page - Fee Generation Page - FAQ Page - Trello Scrum Board management - Documentation leadership - Progress tracking and coordination
Saif Shahzad	- Backend logic implementation for Fee pages - Completion of authentication system backend - Design of system diagrams - Collaboration on LaTeX documentation

This structured division of tasks allowed for seamless collaboration, ensuring that each aspect of the project was handled effectively while maintaining agility in development.

Chapter 6

Implementation Screenshots

Figure 6.1: Fee Details Page

Figure 6.2: Fee Generation Page
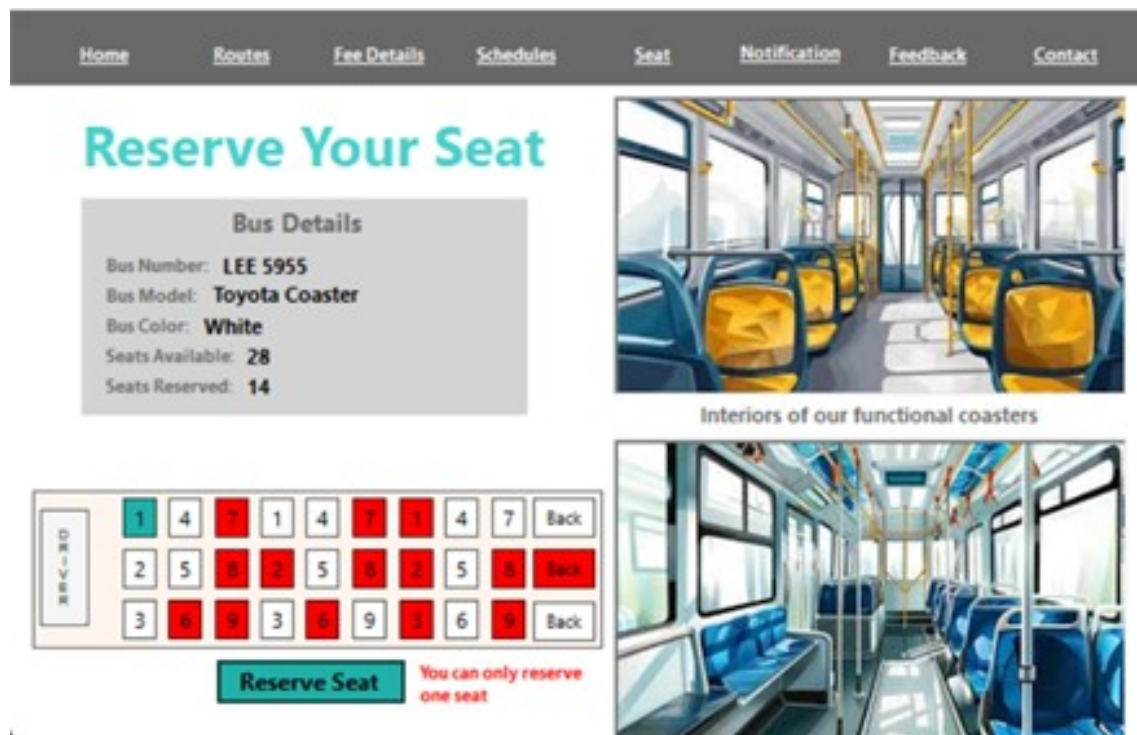

Figure 6.3: FAQ Page

Figure 6.4: Contact Page

Figure 6.5: Feedback Page

Figure 6.6: Seat Reservation Page