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Stay Ahead

Software Requirement Specification Report

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Seat No.	**259**
Project ID	**19**
Module Title	**BUS PORTAL** (Student Bus Registration)
Tech Stack	**LAMP**

Implementation Timeline :

Phase	Name	Deadline	Status
Stage 1	Planning and Requirement gathering	May 2, 2024	Approved
Stage 2	Design and Prototyping		In progress
Stage 3	DB Designing		Not started
Stage 4	Backend Implementation		Not started
Stage 5	Testing & Implementation		Not started

Problem Statement :

Develop an app for managing bus seating for day-scholar students, including registration, seat allocation, attendance recording, and communication of route and timing changes via email/SMS.

- **Student Registration :** Allow students to register for bus transportation services at the start of each semester, capturing necessary details for identification and contact purposes.
- **Seat Allocation :** Implement a system to allocate seats to students for the duration of the semester and minimize disruptions in seating arrangements.
- **Attendance Recording :** Enable the application to record student attendance during bus journeys, providing administrators with accurate attendance data.
- **Communication Module :** Integrate functionality to send automated email/SMS notifications to students, informing them of seat registration, allocation details, and any changes in bus routes or timings.
- **Handling Route Consolidation :** Implement logic to manage seat allocation effectively in scenarios where bus routes are combined, ensuring that students are promptly informed of any changes to their seating arrangements via email/SMS.

Technical Components :

Components	Tech Stack
Frontend	HTML, CSS, Javascript
Backend	PHP with Laravel framework
Database	MySQL
API	RESTful API

Project Flow

Introduction :

The Bus Portal provides a comprehensive solution for managing bus seating for day-scholar students. This application aims to streamline the process of student registration, seat allocation, attendance recording, and communication of important information such as route and timing changes. This Software Requirements Specification (SRS) document outlines the functional and non-functional requirements of the system.

Scope :

The system will allow students to register for bus transportation services at the beginning of each semester, allocate specific seats to students for the duration of the semester, record student attendance during bus journeys, and communicate important information such as seat allocation details and route/timing changes via email/SMS. The system will handle scenarios where bus routes are combined and ensure timely communication of any changes to students.

Functional Requirements :

❖ Student Registration :

- ➢ The system shall provide a user interface for students to register for bus transportation services.
- ➢ Students shall input necessary details such as bus stop & choosing the bus route.
- ➢ Registration shall be allowed at the start of each semester.

❖ Seat Allocation :

- ➢ The system shall allocate specific seats to students for the duration of the semester.
- ➢ Seat allocation will be done automatically on the backend based on the student bus registration data.

- ➢ The system shall implement an algorithm to assign seats in such a way that students of opposite genders are not seated in the same seat.

❖ **Attendance Recording** :

- ➢ The system shall provide an interface for faculty members to record students' attendance during bus journeys.
- ➢ Faculty members shall be able to mark attendance for each student based on their assigned seat.
- ➢ Only faculty members shall have access to the attendance recording functionality.
- ➢ The system shall maintain a log of attendance records, including the date, time, faculty member who recorded the attendance.

❖ **Communication Module :**

- ➢ The system shall integrate functionality to send automated email/SMS notifications to students.
- ➢ Notifications shall include seat registration, allocation details, and any changes in bus routes or timings.

❖ **Handling Route Consolidation :**

- ➢ The system shall implement logic to manage seat allocation effectively in scenarios where bus routes are combined.
- ➢ Students shall be promptly informed of any changes to their seating arrangements via email/SMS.

Non-Functional Requirements :

❖ **Usability :** Intuitive and user-friendly interface for students and administrators. Responsive design to support different devices and screen sizes. Provide clear instructions and help documentation.

- **Reliability :** Minimal downtime and data integrity for student information and attendance records. Implement data backup and recovery mechanisms. Fault tolerance and error handling capabilities.
- **Maintainability :** Well-documented code and design decisions for easy maintenance. Adherence to coding standards and best practices. Separation of concerns and loose coupling between components.
- **Performance :** Ability to handle high concurrency during peak registration periods. Prompt delivery of notifications. Prompt delivery of notifications. Optimized database queries and caching mechanisms for faster response times.
- **Security :** Secure student data and communication channels.Restricted access to sensitive information. Implement industry-standard encryption and authentication protocols. Regular security audits and vulnerability testing.

System Overview :

Users :

- **Students :**

  Students will be the primary users of the system. They will register for bus transportation services, provide their preferences for seat allocation, receive notifications about seat assignments and any changes in bus routes or timings.

- **Faculty :**

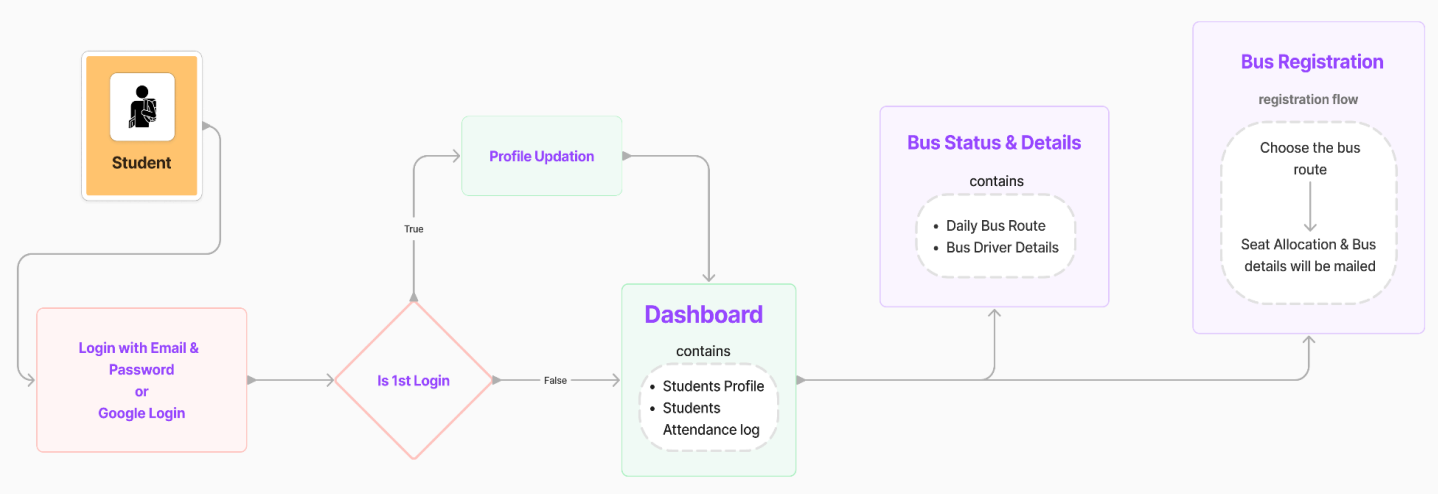
  Faculty members will be responsible for recording student attendance during bus journeys. They will have access to the attendance recording functionality within the system.

- **Administrators :**

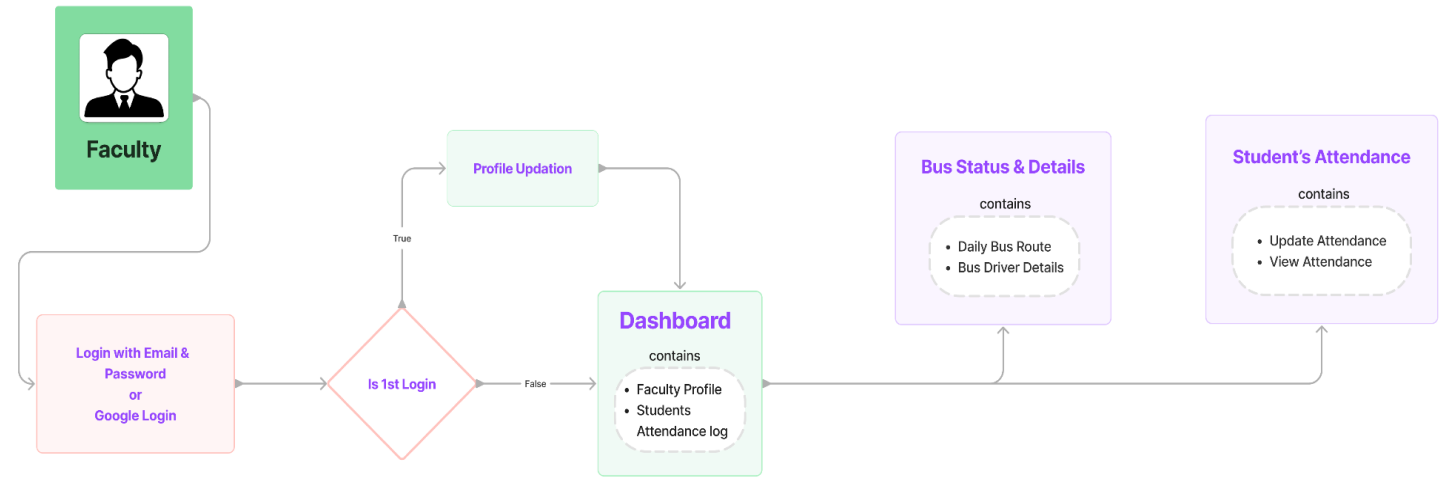
  Administrators will manage and oversee the overall functioning of the system. They will have access to student registration data, seat allocation details, and attendance records.

Flow Chart :

Student's Interface :



Faculty Interface :



Admin’s Interface :