BANNARI AMMAN INSTITUTE OF TECHNOLOGY
An Autonomous Institution, Affiliated to Anna University,
Approved by AICTE, Accredited by NAAC with 'A+' Grade
Stay Ahead

Student Name: KEERTHISAA S

Seat No: 59

Project ID: 19

Project Title: BUS SEATING MANAGEMENT (BIT BUS)

TECHNICAL COMPONENTS:

Component	Tech Stack
Frontend	HTML,CSS,JS
Backend	Python
Database	MySQL
API	OpenAPI

IMPLEMENTATION TIMELINE:

Phase	Deadline	Status	Notes
Stage 1	02-05-2024	In progress	Planning and Requirement gathering
Stage 2		Not started	Design and Prototyping
Stage 3		Not started	DB Designing
Stage 4		Not started	Backend Implementation
Stage 5		Not started	Testing & Implementation

PROBLEM STATEMENT:

The current system of bus seating management for day scholar students faces several challenges, including:

1. **Lack of a centralized system:** There is no centralized platform for bus seat registration and management, leading to inefficiencies and potential conflicts in seat allocation.
2. **Manual seat allocation:** The process of assigning seats to students is manual and prone to errors, resulting in confusion and dissatisfaction among students.
3. **Communication gaps:** Important updates such as changes in bus routes, timings, or seat allocations are communicated inconsistently, leading to confusion and inconvenience for students.
4. **Administrative burden:** Managing bus registrations, seat allocations, attendance records, and communication with students requires significant administrative effort, impacting the efficiency of staff and faculty.

PROJECT FLOW:

Purpose:

To develop a comprehensive bus seating management system that efficiently handles seat allocation, attendance tracking, and communication with students, enhancing the overall transportation experience for day scholar students and streamlining administrative tasks.

Scope:

This system includes user registration, login authentication, dashboard management, seat booking functionality, attendance tracking, and email/SMS notifications for updates such as route changes and seat allocations. It caters to

both students and administrators, providing them with relevant features to manage bus transportation effectively.

Business Context:

The bus seating management system aims to optimize transportation logistics and communication within the educational institution, thereby reducing administrative burden and ensuring a seamless experience for students. Primary stakeholders include day scholar students, administrative staff, and the IT department.

Consideration:

- Users register their details to access the system.
- Two types of logins: student and admin.
- Communication channels include email and SMS.
- Gender-based seat allocation for students (female students seated from the front, male students seated from the last) to avoid confussion.
- Attendance marked by admin and communicated to students via email.

Dependencies:

- Integration with Google OAuth for user authentication.
- Reliable performance and availability of the MySQL database.
- OpenAPI for seamless API integration.

User personas:

- Student: Requires access to dashboard, seat booking functionality, and attendance tracking.
- Admin: Manages dashboard details, attendance, and monitors bus route changes.

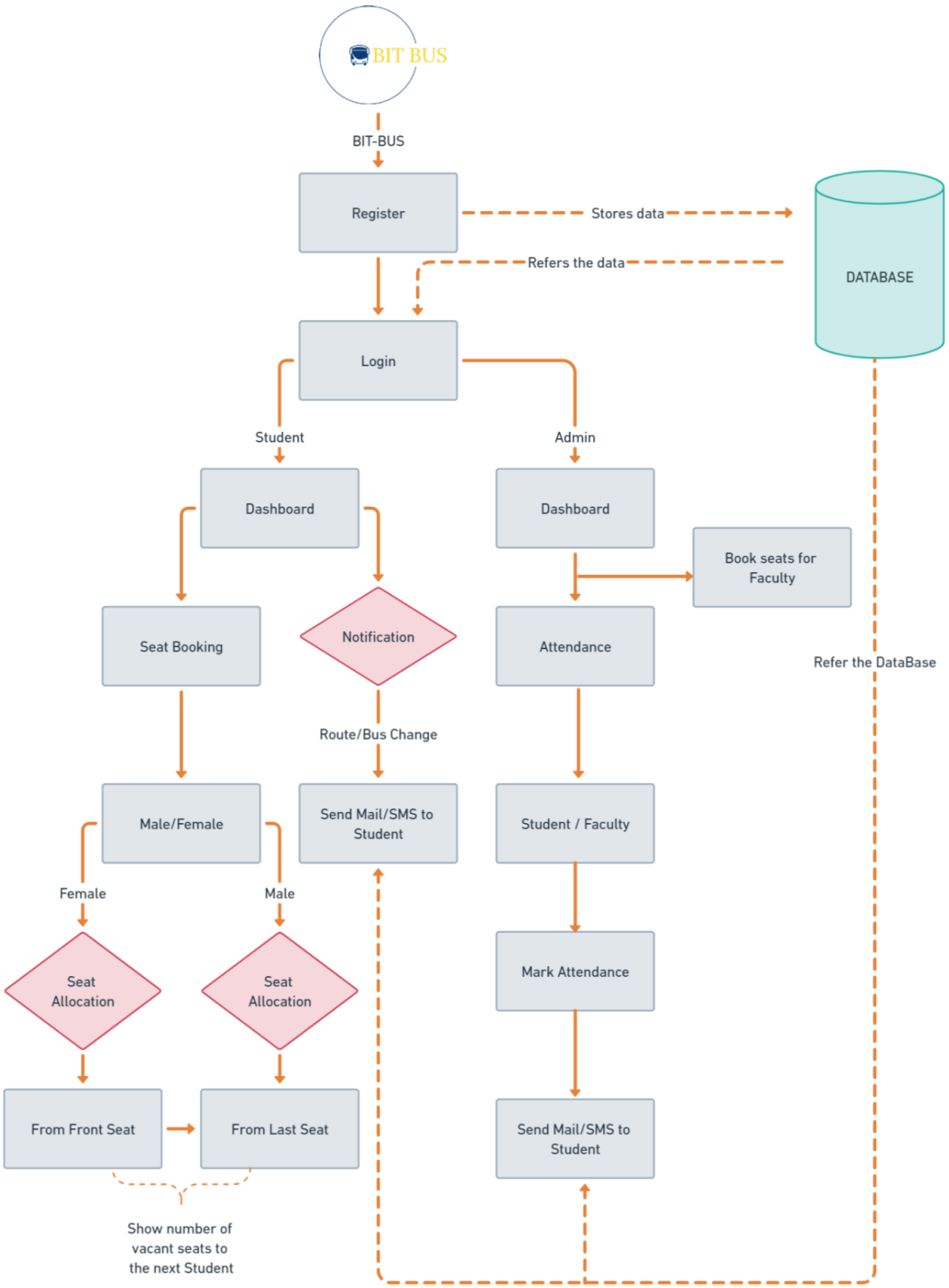
User Stories:

- As a student, I want to easily book my bus seat for each semester and receive updates on route changes and attendance via email/SMS.
- As an admin, I need to efficiently manage student seating, mark attendance, and communicate important updates to students.

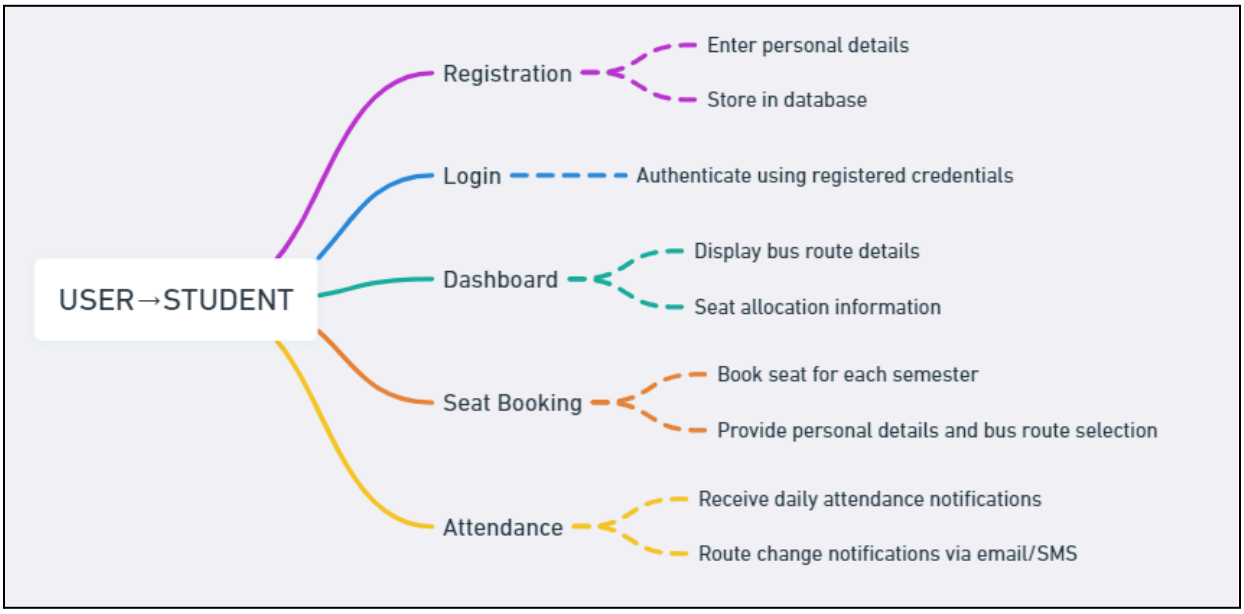
Functional Requirements:

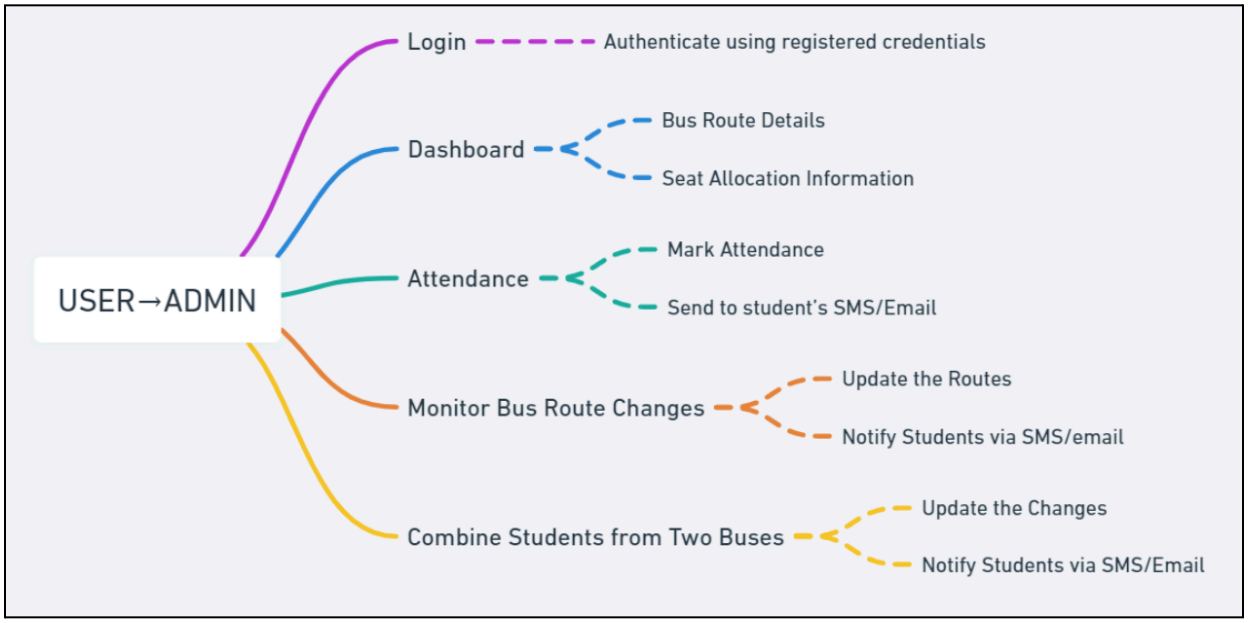
1. User Registration:
    - Students register their details (name, email, roll number, etc.) for access.
    - Data stored securely in the MySQL database.
2. User Authentication:
    - Secure login using registered credentials (student or admin).
3. Dashboard Management:
    - Display bus route details, driver information, and other relevant data.
    - Separate views for students and admins.
4. Seat Booking:
    - Students book their seats for each semester, providing necessary details.
    - Gender-based seat allocation implemented.
5. Attendance Tracking:
    - Admin marks student attendance daily.
    - Attendance status communicated to students via email.
6. Communication:
    - Email/SMS notifications sent to students for route changes, seat allocations, and attendance updates.
    - Admin monitors and communicates any changes in bus routes.

FLOWCHART:


BIT BUS
BIT-BUS
Register
Stores data
DATABASE
Refers the data
Login
Student
Admin
Dashboard
Dashboard
Book seats for Faculty
Seat Booking
Notification
Attendance
Refer the DataBase
Route/Bus Change
Male/Female
Send Mail/SMS to Student
Student / Faculty
Female
Male
Seat Allocation
Seat Allocation
Mark Attendance
From Front Seat
From Last Seat
Send Mail/SMS to Student
Show number of vacant seats to the next Student

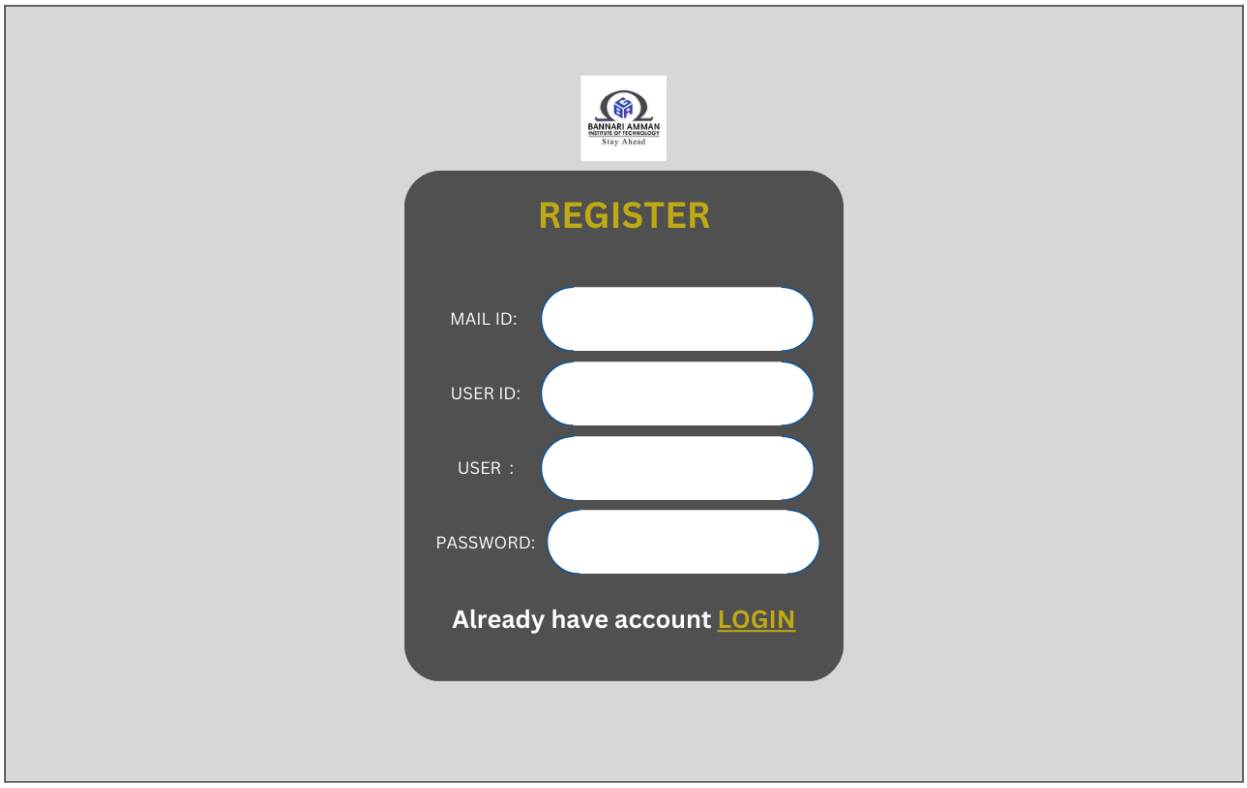
MIND MAP:


USER→STUDENT
Registration
Enter personal details
Store in database
Login
Authenticate using registered credentials
Dashboard
Display bus route details
Seat allocation information
Seat Booking
Book seat for each semester
Provide personal details and bus route selection
Attendance
Receive daily attendance notifications
Route change notifications via email/SMS

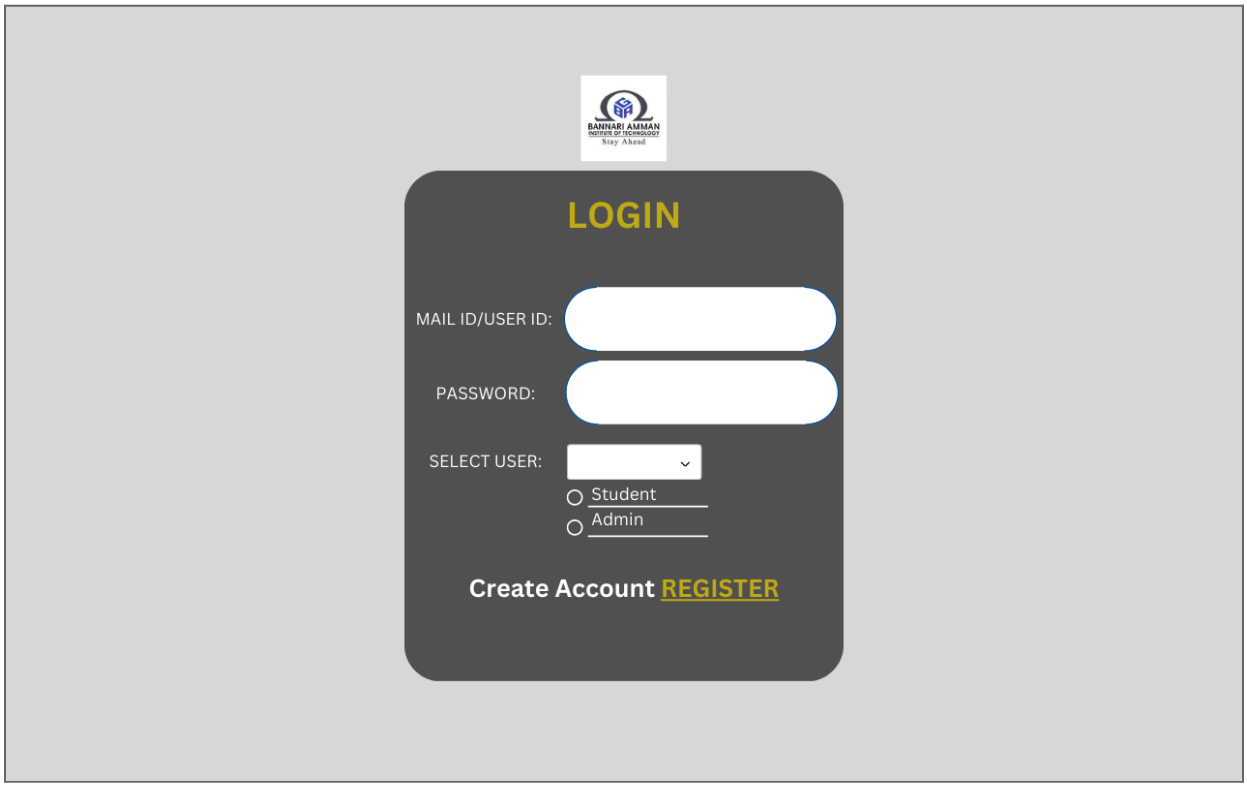

USER→ADMIN
Login
Authenticate using registered credentials
Dashboard
Bus Route Details
Seat Allocation Information
Attendance
Mark Attendance
Send to student's SMS/Email
Monitor Bus Route Changes
Update the Routes
Notify Students via SMS/email
Combine Students from Two Buses
Update the Changes
Notify Students via SMS/Email

PROTOTYPE:

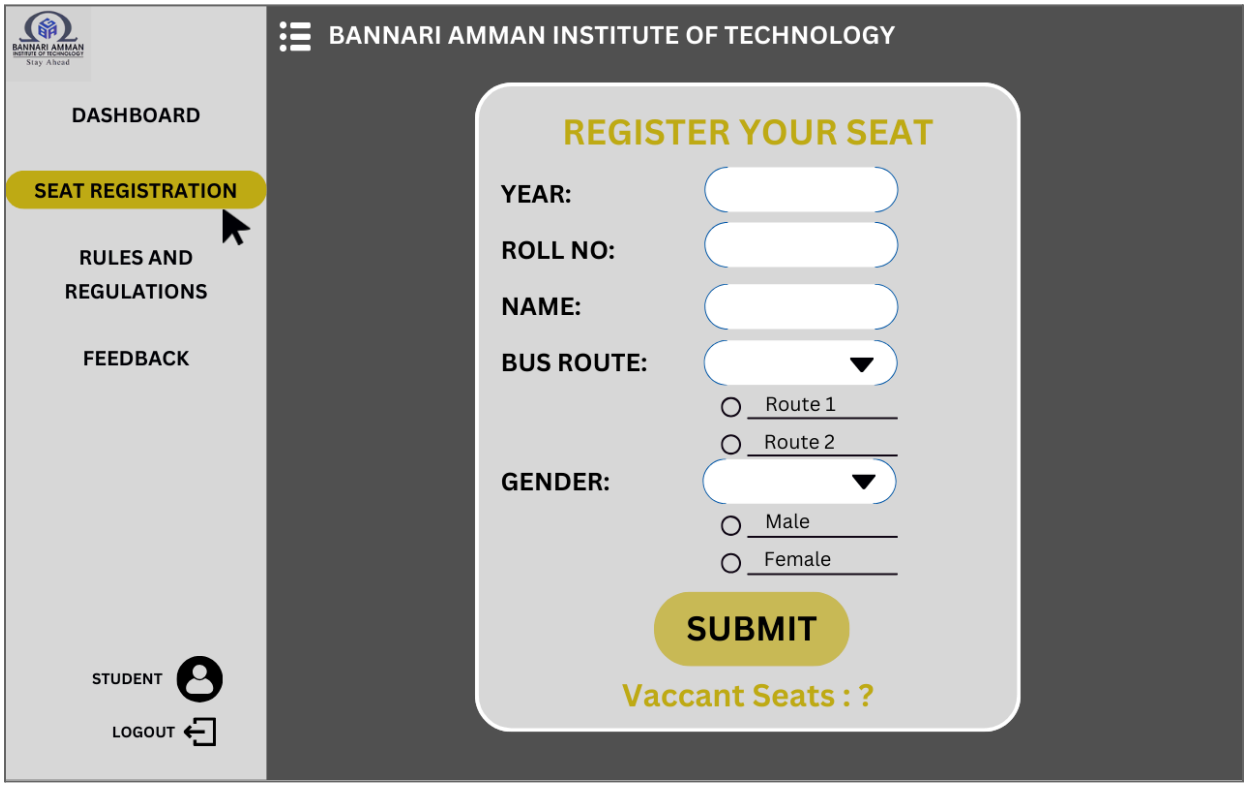
1. REGISTER:



2. LOGIN:



3. IF USER IS STUDENT:



4. IF USER IS ADMIN: