

Project Workflow

Special Lab Portal

Name	Sangeerthan P
Roll no	7376222IT243
Seat no	334
Project ID	14
Problem Statement	Special Lab Portal

Technical Component: (MERN Stack)

Front End	React.js
Back End	Node.js
Database	MongoDB
API	OpenAPI

1. Introduction:

1.1 Purpose:

The purpose of this project is to develop an online system specifically tailored to the needs of the Special Lab. This system aims to streamline lab operations by automating tasks such as member admissions, tracking performance targets, facilitating internal communication regarding member transfers, and showcasing student achievements. The goal is to enhance efficiency, transparency, and effectiveness in managing the lab's activities.

1.2 Scope of Project:

The Special Lab Portal serves as a centralized hub for Special Lab faculties and students to access essential information and streamline the process of student enrollment. Through this portal, students can explore details about various Special Labs, book appointments for review sessions, and receive feedback on their suitability for joining specific labs. Special Lab faculties can efficiently manage student applications, review submissions, and make informed decisions regarding student enrollment.

2. System Overview:

2.1 Users:

1.Students:

- **View Special Lab Information:** Access detailed information about Special Labs, including achievements and faculty details.
- **Appointment Booking:** Schedule appointments for review sessions for a desired Special Lab based on their interest and availability.
- **Review Appointment:** After scheduling the appointment, students should attend the review. Following the review, they will be informed of their selection status.
- **Alternate Lab Application:** If rejected, students can book appointments for other Special Labs with available vacancies after the initial overall review period for the lab.

2.Admins:

Review submitted Special Lab applications, approve or reject applications (with remarks), manage appointments, schedule meetings, and access analytical dashboards for the details of the Special Labs.

2.2 Features:

1. Login and Registration:

Students and Admins can register for an account or login with their existing account.

2. Special Lab Information Viewing:

Users can access detailed information about Special Labs, including Achievements and faculty details. Enables users to make informed decisions about which Special Lab to join based on their interests and needs.

3. Special Lab Appointment Booking:

Users can schedule appointments for review sessions for a desired Special Lab based on their interest and availability. Facilitates the process of joining a Special Lab by allowing users to book appointments conveniently.

4. Appointment Scheduling:

Students can schedule appointments for their review sessions. Helps in organizing and managing the review process efficiently.

5. Appointment Status:

Users can check the status of their appointment, whether they have been selected or not. Provides transparency and clarity regarding the outcome of their review session.

6. Rescheduling or Rebooking for Appointment for Rejected Students:

If rejected, students can reschedule their appointments or book appointments for other Special Labs with available vacancies. Gives students a second chance to join a Special Lab that aligns with their interests.

7. Wildcard Registration for Students with Valid Reason:

Allows students with valid reasons to register for a Special Lab outside of the regular application process. Provides flexibility for students facing exceptional circumstances.

8. Reminder for the Scheduled Appointment via Mail:

Sends reminders to users about their scheduled appointments via email. Helps users stay organized and ensures they do not miss their review sessions.

9. Admin Feature (Special Lab Faculty):

Special Lab faculty (admins) have the ability to review student applications and make decisions regarding their suitability for the lab, either approving or rejecting them. This functionality enables faculty to carefully consider each application and make informed decisions about student admissions. Additionally, admins can update the information and achievements related to the concerned Special Lab, ensuring that the information available to students is accurate and up-to-date.

3.Requirements:

3.1 Functional Requirement:

- **User Management:**

- Students can register and login.
- Admins have access control with an analytical dashboard which is the special lab details and dedicated features.

- **Special Lab Appointment:**

Students can schedule appointments for review sessions for their desired Special Lab. Appointment scheduling form contains:

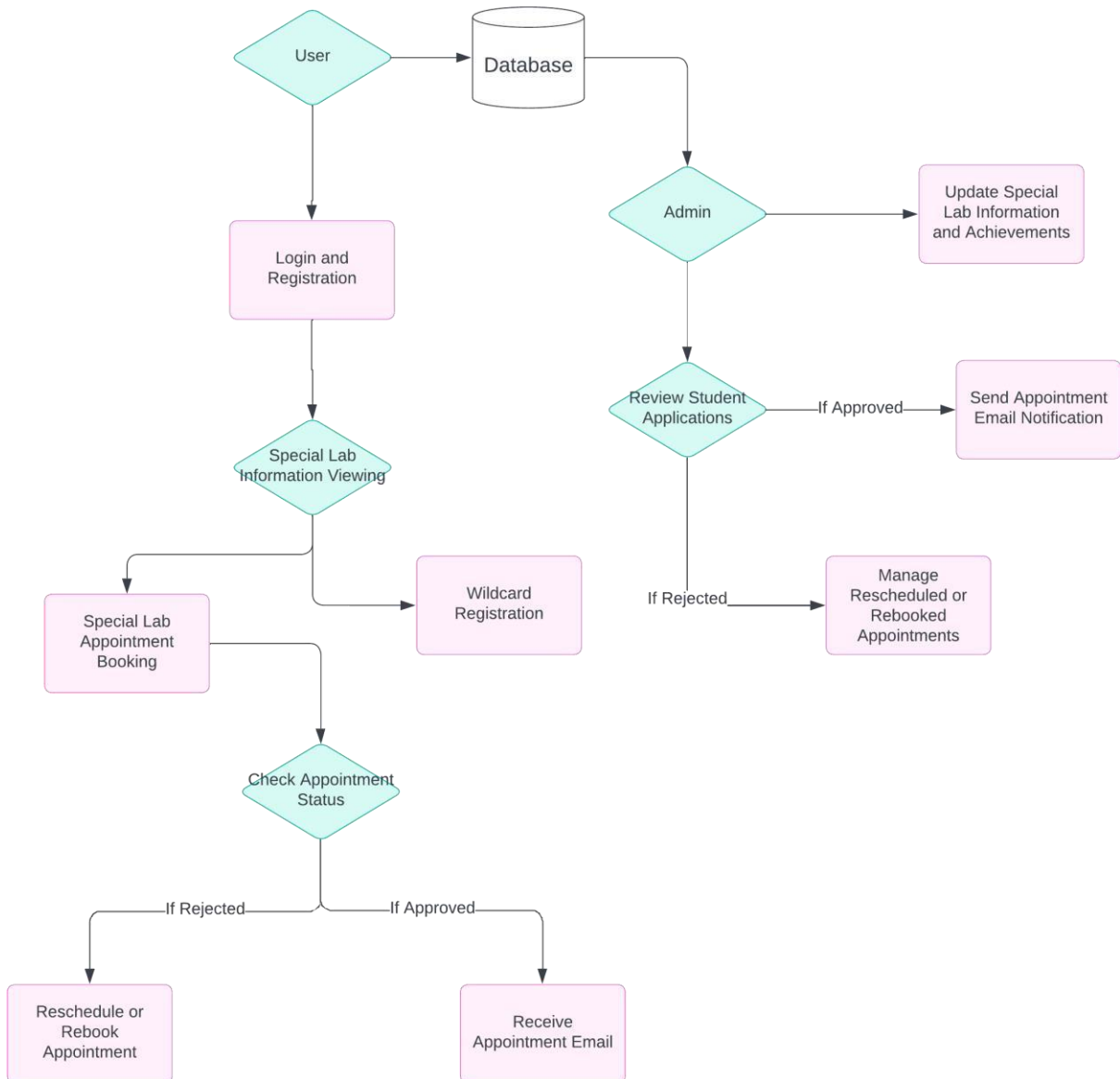
- Special Lab selection
- Preferred date and time for the appointment
- Reason for the appointment
- Technologies known to the related Special Lab
- **Appointment Scheduling:**
- Students can book appointments for review sessions with Special Lab faculty.
- Appointments can be scheduled based on available slots and desired dates provided by the system.
- **Appointment Status:**
- Users should be able to check the status of their appointment, whether they have been selected or not.
- **Rescheduling or Rebooking for Appointment for Rejected Students:**
- If rejected, students should be able to reschedule their appointments or book appointments for other Special Labs with available vacancies.
- **Wildcard Registration for Students with Valid Reason:**
- Students with valid reasons should be able to register for a Special Lab outside of the regular application process.

- **Reminder for the Scheduled Appointment via Mail:**
- The system should send reminders to users about their scheduled appointments via email.
- **Admin Features:**
- Admins should be able to review student and make decisions regarding their suitability for the lab, either approving or rejecting them. Admins should be able to update the information and achievements related to the concerned Special Lab.

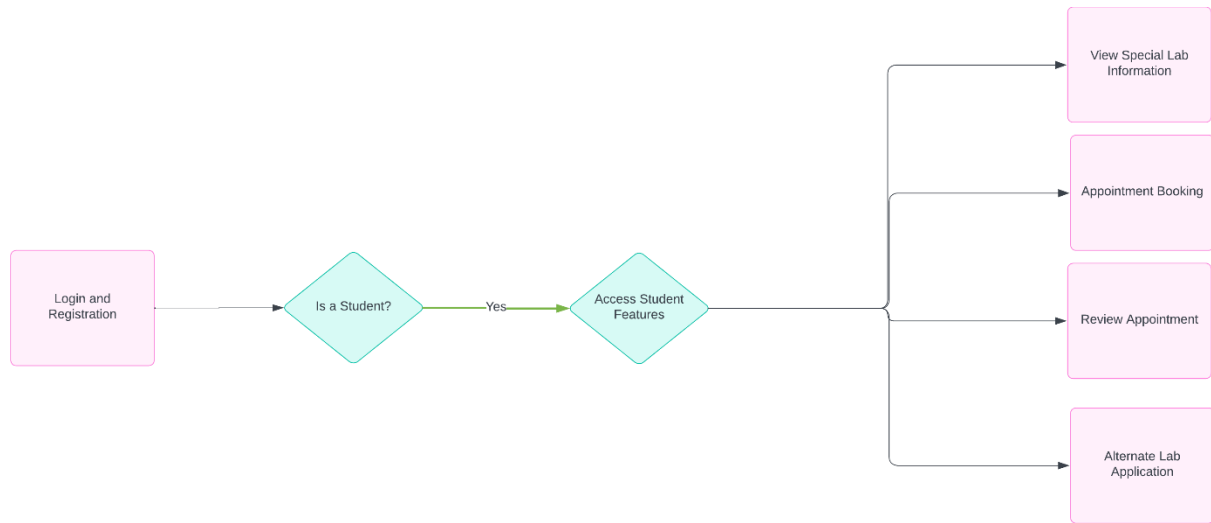
3.2 Non-Functional Requirements:

- **Usability:** The system should be user-friendly and easy to navigate for both students and admins.
- **Performance:** The system should be able to handle a large number of concurrent users without significant performance degradation.
- **Reliability:** The system should be reliable and available whenever users need to access it.
- **Security:** The system should ensure the security and privacy of user data, including login credentials and personal information.
- **Scalability:** The system should be scalable to accommodate future growth and expansion.
- **Compatibility:** The system should be compatible with different devices and browsers to ensure a seamless user experience.
- **Maintainability:** The system should be easy to maintain and update to incorporate new features or address issues as they arise.

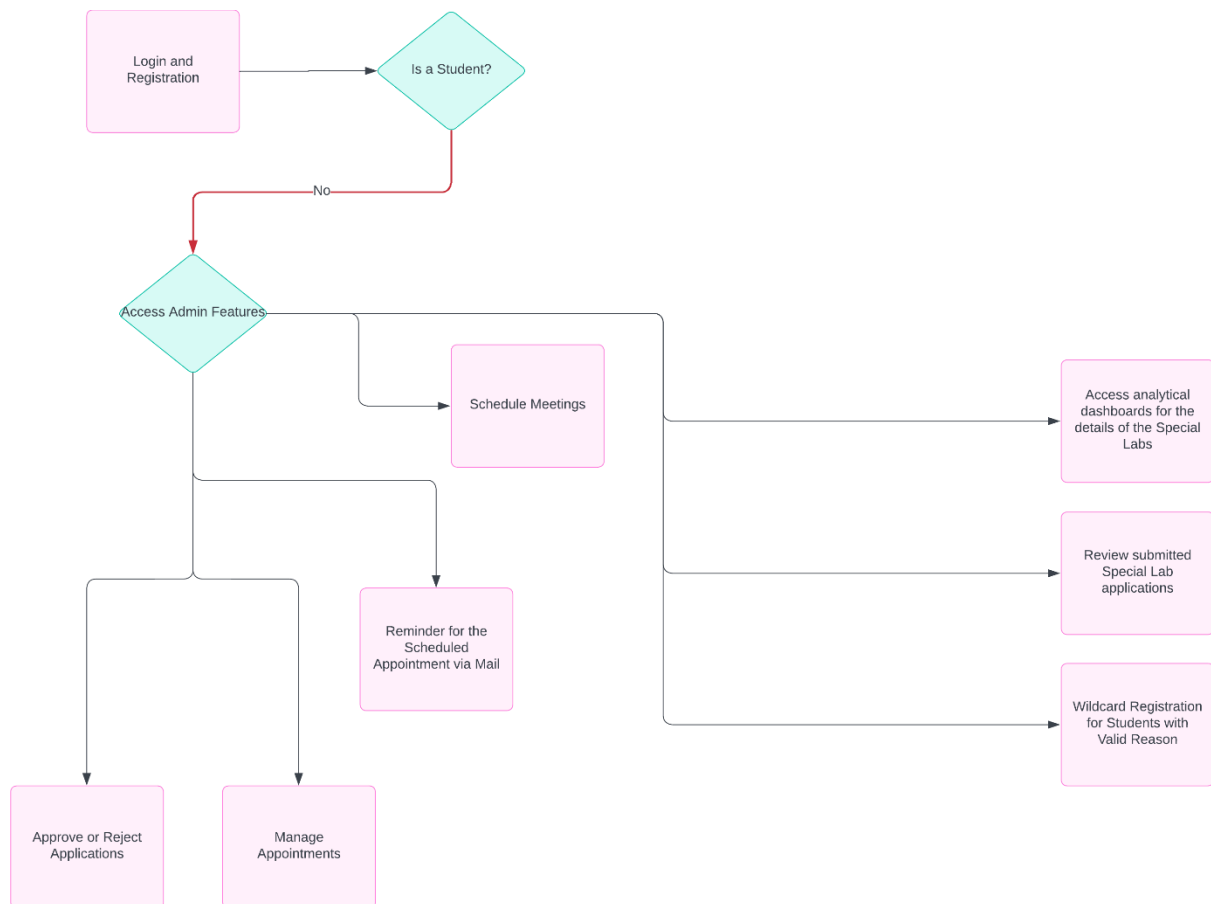
Flowchart:



Student:



Admin:



ER Diagram:

