14. Special Lab Portal – Overall

SRS (Software Requirement Specification)

1. Introduction

1.1. Purpose

The purpose of this document is to outline the requirements and specifications for the development of the Special Lab Portal. This portal aims to facilitate the management of special labs, interview processes, and slot bookings for students, staff (including interns), and administrators.

1.2. Scope of Project

The Special Lab Portal will enable users to register for special labs, participate in interviews, and book slots for interviews. It will allow staff to manage lab details, conduct interviews, and make final decisions. Administrators will have full control over the system, including evaluating special round documents submitted by students.

2. System Overview

2.1. Users

Student:

- ➢ Can view and register for special labs.
- ➢ Participate in interview rounds.
- ➢ Change special labs once a year.
- ➢ Have access to interview slot booking.

Staff (including interns):

- ➢ Can add and manage lab details.
- ➢ Conduct interviews.
- ➢ Make final selections.

Administrator:

- ➢ Has top-level access to all system functionalities.
- ➢ Evaluates special round documents submitted by students.
- ➢ Can add help materials for students.

2.2. Features

1. User Authentication:

- Secure login for all users.

2. Special Lab Registration:
- Students can view and register for special labs.

3. Interview Process:
- Staff can create interview slots.
- Conduct interviews and make selections.

4. Slot Booking:
- Students can book interview slots.

5. Lab Management:
- Staff can add and manage lab details.

6. Administrative Control:
- Administrator has access to all system features.

7. Help Materials:
- Admin or staff can add help materials for students.

3. System Requirements Specification

3.1. Functional Requirements

User Management:

- Users can register and login.
- Admins have access control.
- Different access levels for users.

Special Lab:

- Students can view and register for special labs.
- Staff can add and manage lab details.
- Lab details include lab name, code, faculty in-charge, promo video, achievements, and permitted number of students.
- Students can change special labs once a year.

Interview Process:

- Staff can create interview slots.
- Conduct interviews.
- Make final selections.
- Students can participate in interviews.

- Wildcard round available for students who fail the first round.

Slot Booking:

- Students can book interview slots.
- Option for rescheduling interviews.

Administrative Control:

- Admins can manage all aspects of the system.
- Evaluate documents submitted by students.

Help Materials:

- Admin or staff can add help materials for students.
- Help materials include norms, conditions, and instructions.

3.2. Non-Functional Requirements

Performance:

- System should respond within 2 seconds.
- Concurrent user load of at least 100 users.

Security:

- User data encryption during transmission and storage.
- Secure authentication mechanisms.

Usability:

- Intuitive and user-friendly interface.
- Clear error messages.

Reliability:

- 24/7 availability.
- Backup and recovery mechanism.

Scalability:

- System should accommodate increasing users and data volume.
- Scalable for additional features.

4. Technology Stack

Backend:

- MongoDB
- Express.js
- Node.js

Frontend:

- React.js
- Tailwind CSS

Deployment:

- MERN stack setup.

5. Workflow