Software Requirement Specification for Bus Registration Portal

Name	MIDHUN KUMAR K S
Roll no	7376221EC221
Seat no	335
Project ID	25
Problem Statement	GRIEVANCE PORTAL FOR ANONYMOUS AND PERSONAL GRIEVANCES
Stack	MERN STACK

Technical Components:

Components	Tech Stack
Backend	NODE.JS WITH EXPRESS.JS
Frontend	REACT
Database	MONGODB
API	OPEN API

1. Introduction

1.1 Purpose

The purpose of this document is to specify the requirements for the Grievance Portal, designed for teachers and administrators to manage grievances effectively. The document is intended for developers, project managers, and stakeholders involved in the project.

1.2 Scope

The Grievance Portal will provide functionalities for teachers to submit grievances (anonymously or personally) and for administrators to manage and resolve these grievances. The system will support user authentication, dashboard functionalities for both user types, and notification systems.

1.3 Definitions, Acronyms, and Abbreviations

- **MERN Stack**: MongoDB, Express.js, React.js, Node.js
- **Admin**: User with administrative privileges
- **Teacher**: User submitting grievances
- **Grievance**: A formal complaint or issue raised by a teacher

2. Overall Description

2.1 Product Perspective

The Grievance Portal is a standalone web application built using the MERN stack. It will interface with a MongoDB database to store and manage data.

2.2 Product Functions

- User Authentication
- Grievance Submission
- Dashboard for Teachers and Admins
- Grievance Management
- Notifications

2.3 User Classes and Characteristics

- **Teachers**: Users who submit grievances.
- **Admins**: Users who manage and resolve grievances.

2.4 Operating Environment

- **Client-side**: Web browsers (Chrome, Firefox, Safari, Edge)
- **Server-side**: Node.js environment, MongoDB database

2.5 Design and Implementation Constraints

- Must use the MERN stack.
- Must support modern web browsers.
- Data privacy and security must be maintained.

2.6 Assumptions and Dependencies

- Users will have internet access.
- Users will have basic knowledge of using web applications.

3. System Features

3.1 User Authentication

Description: The system will allow users to register and log in.

- **Input**: User credentials (username, password).
- **Output**: Access to respective dashboards.

3.2 Teacher Dashboard

Description: The dashboard will provide teachers with options to submit and track grievances.

- **Input**: Grievance details.
- **Output**: Status updates on submitted grievances.

3.3 Admin Dashboard

Description: The dashboard will provide admins with options to view, categorize, and manage grievances.

- **Input**: Grievance status updates, categorization details.
- **Output**: Resolved grievances, reports.

3.4 Grievance Submission

Description: Teachers can submit grievances with details like category, summary, and description.

- **Input**: Grievance form details.
- **Output**: Grievance record in the database.

3.5 Grievance Management

Description: Admins can view, categorize, and manage the resolution of grievances.

- **Input**: Grievance details from the database.
- **Output**: Updated grievance status, resolution details.

3.6 Notifications

Description: The system will notify users about grievance status updates.

- **Input**: Grievance status change.
- **Output**: Notification to the relevant user.

4. External Interface Requirements

4.1 User Interfaces

- **Login Page**: For user authentication.
- **Teacher Dashboard**: For submitting and tracking grievances.
- **Admin Dashboard**: For managing grievances.

4.2 Hardware Interfaces

- No specific hardware interfaces required beyond standard web servers and client devices.

4.3 Software Interfaces

- **MongoDB**: Database for storing grievance records and user data.
- **Express.js**: Server-side framework.
- **React.js**: Client-side framework.
- **Node.js**: Server-side runtime environment.

4.4 Communications Interfaces

- HTTP/HTTPS for client-server communication.

5. Nonfunctional Requirements

5.1 Performance Requirements

- The system should handle concurrent access by multiple users without performance degradation.
- Average response time for user actions should be less than 2 seconds.

5.2 Safety Requirements

- The system should handle and log errors without crashing.
- Regular backups of the database should be maintained.

5.3 Security Requirements

- User data must be encrypted.
- Implement role-based access control.

5.4 Software Quality Attributes

- **Usability**: The interface should be user-friendly and intuitive.
- **Reliability**: The system should be available 99.9% of the time.
- **Maintainability**: The codebase should be modular and well-documented.

6. Other Requirements

6.1 Database Requirements

- The database should store user data, grievance records, and status updates.
- Regular backups and data encryption must be implemented.

6.2 Legal and Regulatory Requirements

- The system must comply with data protection regulations such as GDPR.

This SRS provides a comprehensive overview of the requirements for developing the Grievance Portal, ensuring clarity and alignment among developers, project managers, and stakeholders.