# Software Requirements Specification (SRS) for School Management System

## 1. Introduction

### 1.1 Purpose

The purpose of this document is to outline the requirements for the development of a School Management System. This application will allow school administrators, teachers, students, and parents to manage and access information related to school operations, academic progress, and other relevant activities.

### 1.2 Scope

This SRS document covers the functionalities of the School Management System, including user management, academic management, timetable scheduling, attendance tracking, examination management, and communication modules. It is intended for developers, project managers, and stakeholders.

### 1.3 Definitions, Acronyms, and Abbreviations

**SRS:** Software Requirements Specification

**Admin:** Administrator

**SMS:** School Management System

**User:** Any individual using the system (admin, teacher, student, parent)

### 1.4 References

IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications

Education Management Standards and Regulations

Data Protection and Privacy Regulations

### 1.5 Overview

The document is organized into several sections detailing system features, external interface requirements, system features, and other non-functional requirements.

## 2. Overall Description

### 2.1 Product Perspective

The School Management System is a standalone system designed to be accessible via web browsers and mobile applications. It interfaces with external communication tools (e.g., email, SMS), and a backend database.

2.2 Product Functions

User Management

Academic Management

Timetable Scheduling

Attendance Tracking

Examination Management

Communication Module

Reporting and Analytics

### 2.3 User Classes and Characteristics

**Admins:** Manage the overall system and users.

**Teachers:** Manage classes, attendance, and grades.

**Students:** Access their academic information and resources.

**Parents:** View their children's academic progress and communicate with teachers.

### 2.4 Operating Environment

The application will be hosted on a web server and accessible via modern web browsers (Chrome, Firefox, Safari, Edge) and mobile devices (iOS, Android).

### 2.5 Design and Implementation Constraints

Must comply with data protection regulations (e.g., GDPR).

Must support mobile and desktop platforms.

Must ensure data integrity and security.

### 2.6 User Documentation

User Manual

Admin Guide

FAQs and Online Help

### 2.7 Assumptions and Dependencies

Reliable internet connection for users.

Availability of external communication tools.

Users have basic knowledge of using web and mobile applications.

## 3. External Interface Requirements

### 3.1 User Interfaces

**Login/Registration Page:** Forms for user login and registration.

**Dashboard:** Overview of key information for users.

**Student Portal:** Access to academic information and resources.

**Teacher Portal:** Management of classes, attendance, and grades.

**Parent Portal:** View children's academic progress.

**Admin Dashboard:** Interface for managing the system backend.

### 3.2 Hardware Interfaces

Web server

Database server

### 3.3 Software Interfaces

Email Service API (e.g., SendGrid)

SMS Gateway API

Database Management System (MySQL, PostgreSQL)

### 3.4 Communications Interfaces

HTTPS for secure communication

## 4. System Features

### 4.1 User Management

#### 4.1.1 Description and Priority

Allows admins to manage users (students, teachers, parents). Priority: High

#### 4.1.2 Stimulus/Response Sequences

Admin adds a new user.

Admin updates user details.

Admin deletes a user.

#### 4.1.3 Functional Requirements

**FR1:** The system shall provide a registration form for new users.

**FR2:** The system shall allow admins to update user information.

**FR3:** The system shall allow admins to deactivate or delete users.

### 4.2 Academic Management

#### 4.2.1 Description and Priority

Allows teachers to manage academic activities such as assignments, grades, and resources. Priority: High

#### 4.2.2 Stimulus/Response Sequences

Teacher creates an assignment.

Teacher grades student submissions.

Teacher uploads study materials.

### 4.2.3 Functional Requirements

**FR4:** The system shall allow teachers to create and manage assignments.

**FR5:** The system shall allow teachers to grade student submissions.

**FR6:** The system shall allow teachers to upload and share study materials.

## 4.3 Timetable Scheduling

### 4.3.1 Description and Priority

Manages the scheduling of classes and events. Priority: High

### 4.3.2 Stimulus/Response Sequences

Admin or teacher creates a timetable.

Students and teachers view their timetables.

### 4.3.3 Functional Requirements

**FR7:** The system shall allow admins and teachers to create and manage timetables.

**FR8:** The system shall display timetables for students and teachers.

## 4.4 Attendance Tracking

### 4.4.1 Description and Priority

Tracks student attendance in classes. Priority: High

### 4.4.2 Stimulus/Response Sequences

Teacher marks attendance.

Admin views attendance reports.

### 4.4.3 Functional Requirements

**FR9:** The system shall allow teachers to mark attendance.

**FR10:** The system shall generate attendance reports for admins.

## 4.5 Examination Management

### 4.5.1 Description and Priority

Manages the scheduling and grading of examinations. Priority: High

### 4.5.2 Stimulus/Response Sequences

Admin schedules exams.

Teacher enters exam grades.

Students view their exam results.

### 4.5.3 Functional Requirements

**FR11:** The system shall allow admins to schedule exams.

**FR12:** The system shall allow teachers to enter and manage exam grades.

**FR13:** The system shall display exam results for students.

## 4.6 Communication Module

### 4.6.1 Description and Priority

Facilitates communication between users (admins, teachers, students, parents). Priority: Medium

### 4.6.2 Stimulus/Response Sequences

User sends a message.

Recipient receives and views the message.

### 4.6.3 Functional Requirements

**FR14:** The system shall allow users to send and receive messages.

**FR15:** The system shall integrate with email and SMS services for notifications.

## 4.7 Reporting and Analytics

### 4.7.1 Description and Priority

Generates reports and provides analytics on various aspects of the school management system. Priority: Medium

### 4.7.2 Stimulus/Response Sequences

Admin generates a report on student performance.

Admin views analytics on attendance trends.

### 4.7.3 Functional Requirements

**FR16:** The system shall generate customizable reports on academic performance, attendance, and other metrics.

**FR17:** The system shall provide analytics dashboards for admins.

## 5. Non-Functional Requirements

### 5.1 Performance Requirements

The system should handle up to 5,000 concurrent users.

Page load times should not exceed 3 seconds under normal load.

### 5.2 Security Requirements

The system must use HTTPS for all communications.

User passwords must be stored using strong encryption.

### 5.3 Usability Requirements

The user interface should be intuitive and easy to navigate.

The system should be accessible to users with disabilities, complying with WCAG 2.1 guidelines.

### 5.4 Reliability Requirements

The system should have an uptime of 99.9%.

The system should handle failures gracefully and provide clear error messages to users.

### 5.5 Maintainability Requirements

The system should be modular to facilitate easy updates and maintenance.

The codebase should be well-documented.

5.6 Portability Requirements

The application should be accessible on various devices (desktops, tablets, smartphones).

## 6. Other Requirements

### 6.1 Legal and Regulatory Requirements

The system must comply with data protection laws (e.g., GDPR).

The system must adhere to educational standards and regulations.

### 6.2 Environmental Requirements

The application should be optimized for low power consumption on mobile devices.