**School Management System**

**Problem Statement:**

Develop a School Management System to facilitate efficient management of school operations, including student enrolment, course scheduling, attendance tracking and grading. To be used by School, Colleges and Academic Institutes.

**Roles:**

1. Admin
2. Teacher
3. Student

**Functional Requirements:**

User Management

1. User Authentication and Authorization: [Admin]
   * Secure login for administrators, teachers, students, parents and accountant.
   * Role-based access control and different home pages.
2. User Profiles: [Admin]
   * Create and manage user profiles for students, teachers, and parents by admin.
   * Update personal details and contact information by admin.

Student Management

1. Student Enrolment [Admin]
   * Register new students with personal and academic details.
2. Attendance Tracking: [Teacher]
   * Record daily attendance for students.

Academic Management

1. Course Management: [Admin]
   * Create and manage courses and subjects.
   * Assign teachers to courses and subjects.
2. Timetable Management: [Admin]
   * Create timetables for teachers and students.
3. Grade Management: [Teacher]
   * Record and manage student grades and performance.
   * Generate and distribute report cards.

Fee Management

1. Fee Collection:
   * Collect fees and based on that can implement fines for dues after an certain deadline.

Marksheets

1. Marksheets Generation:
   * Generate various reports (attendance, performance, fee status). [ Faculty]
   * View Marksheets. [Students]
   * Implement pass fail and overall percentage logic in marksheets.
   * Subject wise marks will be shown.

Admin:

|  |
| --- |
| Manage Student |
| Manage Faculty |
| Assign Faculty |
| Manage Courses |
| Modify Attendance |
| Login/Logout |
| Faculty / Student leave approval |
| Notification / Announcement |
| Collect Fees |
| View Class Details with Mentor (class wise) |
| Register Faculty, Student |

Faculty:

|  |
| --- |
| Add Attendance |
| Add Marks |
| Add Timetable |
| Apply Leaves |
| Student Leave approval |
| Generate Marksheets |
| Feedback |
| Login/Logout |

Student:

|  |
| --- |
| Apply Leaves |
| View Marksheets |
| Raise Issue / Feedback |
| Pay Fees |
| View Timetable |
| Login / Logout |

Login Page:

A single login page will be used for all users, but access will be granted on the basis of roles.

Select role from Login As – Student, Teacher, Accountant and Parent.

Dashboard:

Different dashboard for each user based on the authorization of user.

Implement logic in fees :

Fine, dues, deadline.

Logic in marksheet:

Calculate subject wise marks and then calculate the pass or fail.

**User Management**

1. **User Authentication and Authorization**
   * **Entity: User**
     + **Functionality**:
       - Implement secure login mechanisms for different user types including administrators, teachers and students.
       - Implement role-based access control (RBAC) to provide different home pages and access permissions based on user roles.
2. **User Profiles**
   * **Entity: User Profile (by Admin)**
     + **Functionality**:
       - Admin creates and manages user profiles for students and teachers.
       - Admin updates personal details and contact information in user profiles.

**Student Management**

1. **Student Enrollment (by Admin)**
   * **Entity: Student**
     + **Functionality**:
       - Register new students by capturing personal and academic details.
       - Manage and update student records.
2. **Attendance Tracking (by Teacher)**
   * **Entity: Attendance**
     + **Functionality**:
       - Record daily attendance for students.
       - Manage attendance records over time.

**Academic Management**

1. **Course Management ( By Admin)**
   * **Entity: Course**
     + **Functionality**:
       - Create and manage courses and subjects.
       - Associate teachers with specific courses and subjects.
2. **Timetable Management ( By Teacher)**
   * **Entity: Timetable**
     + **Functionality**:
       - Create and manage timetables for students.

**Fee Management**

1. **Fee Collection ( By Admin)**
   * **Entity: Fee**
     + **Functionality**:
       - Manage the collection of fees from students and parents.
       - Track fee payments and outstanding balances.
2. **Edges cases**: Maintain deadlines, Dues and fines over time.

**Marksheets**

1. **Marksheets Generation (Teacher)**
   * **Entity: Marksheets**

**Functionality**:

* + - * Generate and manage various reports including attendance, performance, and fee status.
      * Provide functionality for students to view marksheets

1. **Edge case in Marksheet**: Check whether the student is Pass or fail after calculating the percentage and the individual subject.

1. **Class Details (Admin and Teacher)**
   * **Entity: Class**
     + **Functionality**:
       - Admin able to view all list of all students in a specific class along with the class teacher
       - Parents can also view student’s details filtering on basis of class.