School Management Software

DETAILED SOP

**1. INTRODUCTION & OBJECTIVES**

* **Purpose**: Develop a school management software that is easy to use, removes unnecessary complexities, facilitates a streamlined interaction between school staff, parents, and students, and includes the development of a mobile app (iOS and Android), a web portal for admin usage, and a 4-5 page website for application internet visibility. The team will handle everything, including publishing the apps. The only responsibility of the client will be to set up iOS and Android developer accounts.
* **Primary Objectives**:
  + Ensure smooth interaction between the school and parents through a one-way chat system.
  + Provide clear student performance analytics for both a micro (individual) and macro (group) level.
  + Facilitate timely payments and efficient fee tracking through a well-integrated payment gateway.

**2. KEY FUNCTIONAL MODULES**

**2.1 Admin Module**

* **Super Admin**: Full control over all modules, including user management, role assignments, and access permissions.
* **Admin Level**: Manage school operations, create announcements, oversee communication, and monitor overall student progress.
* **Create School**: Ability to create a new school within the system (Super Admin only).

**2.2 Back Office Module**

* Handle student admissions, class schedules, exam timetables, and other administrative tasks.
* Create and manage the students master database. An Excel sheet will be provided for the fields for the master database (subject to changes upon development).
* Manage the Notice Board tab to provide school updates similar to social media status updates (with a like button and the number of interactions, but no comments or sharing).
* Create and manage timetables for all classes, including assigning teachers to classes and managing substitute assignments for classes with the same or different subjects.
* **Student Upgrade Management**: At the end of the financial year, the principal and/or the back office department can upgrade students (only if they have passed the examinations) to the next grade and division. The system will display the student's name, overall marks in previous exams, and teachers' notes. Module owners can select single or multiple students and classify them into the next grade and division in a user-friendly way. Unclassified or pending students should be clearly visible.

**2.3 Chat Module**

The chat module is the core of the system, integrating across all modules to facilitate communication. Modeled after WhatsApp but with strict restrictions, it will include the following functionalities:

* **Class Chat**: A one-way communication channel for messages sent to all students in a specific class.
* **Teacher Chat**: A private one-to-one communication channel between parents and class teachers.
* **Social Updates**: A global section displaying school-wide updates with the ability for users to like the posts. No comments or shares are allowed.

**Access Table**

| **Module** | **Super Admin** | **Admin (School Level)** | **Back Office** | **Principal** | **Teacher** | **Parent** |
| --- | --- | --- | --- | --- | --- | --- |
| Create School | ✅ (Full Access) | ❌ | ❌ | ❌ | ❌ | ❌ |
| Manage Users | ✅ (All Schools) | ✅ (School Level) | ❌ | ❌ | ❌ | ❌ |
| Create Announcements | ✅ (All Schools) | ✅ (School Level) | ✅ | ✅ | ✅ | ❌ |
| View Performance Reports | ✅ (All Schools) | ✅ (School Level) | ✅ | ✅ | ✅ | ✅ |
| Upgrade Students | ✅ (All Schools) | ❌ | ✅ | ✅ | ❌ | ❌ |
| View Payment Status | ✅ (All Schools) | ✅ (School Level) | ✅ | ✅ | ✅ (View Only) | ✅ (View Only for their child) |
| Chat Monitoring | ✅ (All Schools - Monitor / Write / Delete) | ✅ (School Level - Monitor / Write / Delete) | ✅ (Monitor / Read Only) | ✅ (Monitor / Read Only) | ✅ (Assigned Class - Monitor / Write / Read Only) | ✅ (Assigned Class - Read Only / Write Private) |
| Fee Management | ✅ (All Schools) | ✅ (School Level) | ✅ | ❌ | ❌ | ✅ (View Only) |
| Attendance Management | ❌ | ❌ | ❌ | ❌ | ✅ (Manage Attendance) | ❌ |
| Library Management | ✅ (All Schools) | ❌ | ✅ | ❌ | ❌ | ❌ |
| Payment Integration | ✅ (All Schools) | ❌ | ✅ | ❌ | ❌ | ✅ |

**2.4 Parent Module**

* **Communication**: Receive notifications and important updates through the one-way chat system (e.g., event reminders, announcements).
* **Performance Tracking**: View detailed reports of their child's progress, attendance, grades, and teacher feedback.
* **Payment System**: Enable seamless fee payment and track upcoming dues or pending payments.
* **Private Chat**: Ability to privately chat with teachers. These chats will be visible to the principal for monitoring purposes.

**2.5 Teachers Module**

* **Student Performance**: Record grades, attendance, and comments. Easily generate student progress reports.
* **Daily Update Reminders**: Teachers will receive reminders at the end of each school day to update all information on topics covered in class, ensuring up-to-date records for parents and administrators.
* **Attendance Management**: Take attendance for their respective classes with an easy-to-use system, including a "select all" option for present students and the ability to unselect those who are absent. Automatically notify parents when their child has been marked as absent.
* **Payment View**: View the payment status of their students, without any ability to make edits.
* **Communication**: Publish announcements and send important information to parents through the chat system.
* **Timetable Management**: View assigned classes and substitute duties.
* **Private Chat**: Ability to privately chat with parents. These chats will be visible to the principal for monitoring purposes.

**2.6 Principal Module**

* **School-Level Overview**: View detailed performance insights for classes, teachers, and students.
* **Reports**: Generate performance and attendance reports at the macro and micro levels for the entire school.
* **Chat Monitoring**: Access to view private chats between teachers and parents for oversight purposes.

**2.7 Finance Module**

* **Fee Management**: Track fees, manage fee schedules, and generate financial reports.
* **Payment Tracking**: Receive alerts for overdue payments and notify parents for outstanding dues starting 10 days prior to the due date. Primary notifications will be sent within the app, followed by reminders via WhatsApp, SMS, and email in that order of importance.
* **Late Payment Charges**: Automatically apply a late payment charge per month for delayed fee payments.
* **Restricted Mode**: Automatically put the system in restricted mode with no access to chats or other features if the fees are unpaid for 25 days.

**2.8 Library Module**

* Manage library inventory, track issued/returned books, and enable digital search for books by students and teachers.
* Send automated updates and reminders to users when books are nearing their return date or are overdue.
* For overdue books, send reminders via WhatsApp messages directly to the students.

**2.9 Q&A Session with Students Module**

* **Randomized Testing**: Allow parents to test their children using randomized questions based on the syllabus to gauge their understanding.
* **Custom Tests**: Provide an option for parents to create custom tests aligned with specific topics.
* **Performance Insights**: Deliver performance insights to parents based on their child’s answers.

**2.10 Report Card Module**

* **Report Generation**: Allow teachers to create and manage report cards, comments, and feedback.
* **Template Designs**: Include four distinct templates for report cards tailored to the following grades:
  1. Nursery to Senior KG
  2. 1st & 2nd Grades
  3. 3rd to 5th Grades
  4. 6th to 8th Grades
  5. 9th Grade
* **Template Structure**: Maintain the current template structure but apply updated designs, which will be created by the development team. The existing PDFs will be provided by the client for reference.
* **Parent Access**: Parents can view the report cards but cannot download them.

**2.11 Leaving Certificate Module**

* This will be a request-based feature within the app, allowing parents or students to request a leaving certificate.
* The certificate can only be generated by the admin team at the school.
* An existing template will be provided by the client, but it will need to be redesigned to fit a single-page print format for consistency and ease of use.

**2.12 Payment Gateway Integration Module**

* Integrate a secure payment gateway (Zoho Pay) to facilitate timely payments for fees and other school-related expenses.
* Support multi-company functionality in Zoho, enabling separate payment flows for subscription fees for the app and school-specific payments.

**3. USER INTERACTION & INTERFACE GUIDELINES**

* **Clean User Interface**: Develop a simple and intuitive interface for a mobile app (iOS and Android), a web portal for admin usage, and a 4-5 page website for internet visibility.
* **Toggle Between Student Profiles**: Parents with multiple children in the same school, grades, or classes should be able to toggle between their children's profiles easily. This feature will allow parents to click on a student's profile, triggering all features and data to update dynamically based on the selected student. This ensures streamlined access to each child's academic, attendance, and payment details without unnecessary navigation.
* **One-Way Communication System**: Implement a one-way chat feature for school-to-parent communication to maintain clarity and reduce unnecessary interactions.
* **Dashboards**:
  + **Admin Dashboard**: Provide high-level data visualization for student performance and school operations.
  + **Parent Dashboard**: Showcase essential information such as upcoming events, payments, and student progress.

**4. PERFORMANCE ANALYTICS**

* **Micro-Level Analysis**: Individual student analysis for parents and teachers, including grades, attendance, and overall performance.
* **Macro-Level Analysis**: Aggregated insights at the classroom or school level for the principal and admin.
* **Dashboard Suggestions**:
  + **Look and Feel**: Clean, intuitive, and customizable dashboards for different roles (Admin, Principal, Teachers, Parents).
  + **Reports**: Suggested reports include:
    - Academic performance trends for individual students and groups.
    - Attendance summaries and patterns.
    - Fee collection status and overdue tracking.
    - Engagement metrics for the chat module and social updates.
  + **Visualizations**:
    - Graphs and charts for performance trends.
    - Heatmaps for attendance.
    - Tables for detailed student or financial records.
    - Summary cards with key metrics for quick insights.

**5. SECURITY & PRIVACY GUIDELINES**

* Ensure all student and parent data is encrypted using 128-bit or 256-bit encryption.
* Implement role-based access control (RBAC) to prevent unauthorized access.
* Organizations or schools cannot access data from other organizations or schools; ensure this is technologically enforced.
* Password reset must be secured with two-factor authentication (2FA) and not just through email.
* Data should not be shared with any first or third-party vendors.
* No third-party signups (e.g., Google, Microsoft, Apple); data cannot be shared with anyone.
* The app should restrict any parent from taking screenshots of the application to ensure data privacy and prevent unauthorized sharing.
* Comply with local and international data protection regulations.

**6. TECHNOLOGY STACK**

* **Frontend**: React Native for mobile app (iOS and Android).
* **Backend**: Node.js for API development.
* **Database**: MongoDB for efficient data storage.
* **Payment Integration**: PhonePe or Zoho Pay for payment processing.

**7. DEVELOPMENT WORKFLOW**

* The system must be designed with extensibility in mind, allowing the addition of new features in the future without significant overhauls.
* **Phases**:
  1. **Requirement Gathering & Analysis**: Finalize detailed requirements with stakeholders.
  2. **UI/UX Design**: Develop mockups and get approvals.
  3. **Module-Wise Development**: Develop each module iteratively.
  4. **Testing**: Conduct module testing, integration testing, and user acceptance testing.
  5. **Deployment & Launch**: Roll out apps for iOS and Android.
  6. **Maintenance**: Regular updates, feedback incorporation, and security patching.

**8. COMMUNICATION PROTOCOLS**

* **Team Communication**: Regular meetings (stand-ups, sprint planning) to align progress.
* **Parent-School Interaction**: Implement a straightforward one-way messaging system for announcements, avoiding overwhelming communication channels.
* **Private Chat Feature**: Allow private chats between parents and teachers, with visibility granted to the principal for oversight.

**9. PROJECT TIMELINE**

* **Non-Negotiable Requirements**:
  + Payment Gateway and Chat Systems must be live before March 2025.
  + All remaining features must be live before May 2025.
  + The project timeline must be frozen and strictly adhered to before the start of the academic year.
  + Week 1-2: Requirement Gathering & UI/UX Mockups
  + Week 3-6: Core Module Development (Admin, Parent, Teacher, Principal)
  + Week 7-8: Finance & Payment Integration
  + Week 9-10: Testing & Debugging
  + Week 11: Deployment & Go Live
  + Week 12: Post-Launch Support & Feedback Collection

**10. EXPECTED OUTCOMES**

* A user-friendly school management system that simplifies communication, streamlines school operations, and facilitates fee management.
* **Key Differentiator**: The one-way chat functionality, ensuring effective communication without overwhelming parents or school staff.