



# To ameliorate school management: a qualitative study to enhance ERP systems in schools

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**Abstract:** Most academic institutions struggle to keep track of student data, attendance, finances, admissions, and other pertinent information since they still rely on paperwork and manual processes. By deploying centralized software incorporated with various loosely coupled services that interact with one another to address the issues mentioned above, as well as improve communication between management and students/guardians via email, SMS, and push messages, a web-based school management system will reduce manual work. Because it is a server-side enterprise application, it can be used with desktop browsers, mobile browsers, and native mobile applications. A smart school is a technology-based learning environment where students are prepared for the Information Age. These teaching and learning ideas should be covered to satisfy the educational aims of smart schools: curricular, pedagogy, assessment, and teaching-learning materials. The second pillar of a smart school is information and communication technology (ICT), which performs a variety of tasks in a smart school, from supporting teaching and learning activities to assisting with school management. Teaching computer labs, a multimedia development centre, and a server room prepared to handle programmes, management databases, and web servers are all examples of technology that can be used to outfit a smart school.

**Keywords:** Smart school, attendance, fees management, Library, Alumni, etc.

## INTRODUCTION

To solve the problem of ongoing school management system, a research that enables schools to use and operate a number of interconnected modules and efficiently manage school administration. Today's educational institution isn't just about delivering knowledge; it's also about using the latest IT trends to improve the quality of education and handle numerous school activities including admissions, student information, fees collection, expenses, income, attendance, examinations, academics, library management, alumni and report generation. According to a recent report by Modor Intelligence, the global Enterprise Resource Planning (ERP) market size for schools was valued at \$8.05 billion in the year 2020 and is anticipated to be valued at \$18.82 billion by 2026 and will grow at a CAGR of 16.2%. There is a need for a platform that allows students, administrators, staff, and teachers to communicate seamlessly. Through notifications, email, SMS, and push messaging, the web-based management system improves communication. Teachers must devote a significant amount of time and effort to monitor and maintain student records such as attendance, leave, punishment, and assignments, among other things. Institutions can retain student records and handle things more efficiently with the help of an automated student management system that provides real-time status updates on student activities. Academic institutions struggle to manage their finances and keep track of fee collections. There is no link between previous alumni and current students to instill skills or gain experience from them. There is no integration to review school expenses and student fees. Section 2 deals with related work.

## RELATED WORK

FeKara School Management software is a cloud-based SAAS application that covers all aspects of school administration for small to medium-sized educational institutions. FeKara is designed to meet the needs of all parties concerned, including the school administration, instructors, students, and parents. FeKara having an edge as a web-based application that is a free school management tool and that is accessible at all times thanks to sophisticated cloud technologies. The primary downside of utilizing Fekara is that it has restricted bandwidth and storage capacity in its free edition. So, if you want to improve, you'll have to spend money to get where you want to go.

Alma is a piece of software that allows educators to communicate with parents and children while also providing a customizable approach that prevents double entry and errors.

The cloud-based school management solution can be used by educational organizations of all sizes. Among the key features are tools to help users manage school administration, create custom reports, and manage enrollment.



The major advantage is that throughout the year, there has been steady progress; there are features for both small and large schools and the customer service is excellent. Drawbacks of it are there are no built-in scheduling tools, the reporting portion may be improved and making adjustments to the course details necessitates a lengthy process.

Schoolbic is the cutting-edge tool was created for schools and educational institutions to collaborate on. It can be used to automate anything. Ideal for engaging students, parents, employees, and school administrators, as well as scheduling and sharing curriculum and lessons. The major advantage is that it is user-friendly, has everything you need for your school and support team is amazing. Drawbacks of it are less known company and not many reviews you can find online.

**Table 1 deals with existing work:**

Year	Name of paper	Author	Technology used	Drawbacks
2019	Implementing ERP in Higher Educational Institutions	Dr. G. Vincent	Php, My Sql, Php Myadmin	This model does not display the front office that is the details regarding how to add student admission inquiry. It also a separate module regarding alumni is not present.
2019	E-college an ERP for educational institute	Avinash gutte, Nikhil kate, Ajayraj hulikere and Shrikant kokate	Php, My Sql, Apache Server For Connecting Database	In this paper the authors have not included an important module of report generation.
2020	SIS-A framework for distributed information management system for school branches	Ahmad waqas, Zeeshan Bhatti, Gul Muhammad	Html, Css, Javascript, Php, My Sql, Apache Server	This paper covers modules of the administrative front only, it does not cover the sections regarding students and staff.
2020	School management system (school ERP)	Ebricks Infotech	Php, My Sql, Apache Server For Connecting Database	This system has a very complex user interface, it does not include homework module.
2019	ERP for academic architecture framework	Mrs Suvarna L. kattimani, Miss Wangi Kanchan Mallinath	Php, My Sql, Apache Server For Connecting Database	This paper has all the general information about Erp but it is more inclined towards assessments and studies. Also no front office present.
2021	Education ERP system	Akash giri, Ashutosh Kumar Pandey	Php, My Sql, Ajax	The GUI is not user friendly, there is no resources for reference such as library
2019	ERP system software for education	Swapnil Yadav, Triveni Girhepunje, Yogini Nakhate, Purva Budhe	Php, My Sql, Apache Server For Connecting Database	This model only modules related to students and teachers are present it does not include the administrative section.
2020	Delivering school management system for secondary schools	Nchitonet Dot com ltd, WIWO Enterprises	React And Node.js, MongoDB	The model does not have expenses module that is the expenses related to school services cannot be showcased.

Table 1: Existing Work



PROPOSED METHODOLOGY

This proposed methodology deals with smart school modules such as Admin, Parents, Student & Teachers, etc. Admin is in charge of the entire school administration system, as well as its personnel and any other person or item linked with the school. In other words, the admin is the system's most powerful entity. In the system, there will be just one administrator: He or she has the authority to create, alter, or delete any system record. He or she will have access to any other user's profile in the system. The administrator will have access to all facts, whether they are linked to personnel or examinations. When a student enrolls in school, the administrator assigns the student to a class and the section to which it belongs. The admin will be in charge of assigning the schedule to teachers and students. The school's administration will designate who will be the professor and who will be the assistant professor, among other things. He or she will be able to promote any member of the school's personnel. Teachers' and students' leave requests will be approved by the administration. Before I get into detail about other users of this system, I'll go over several aspects that will be common to all types of users.

Take Attendance:

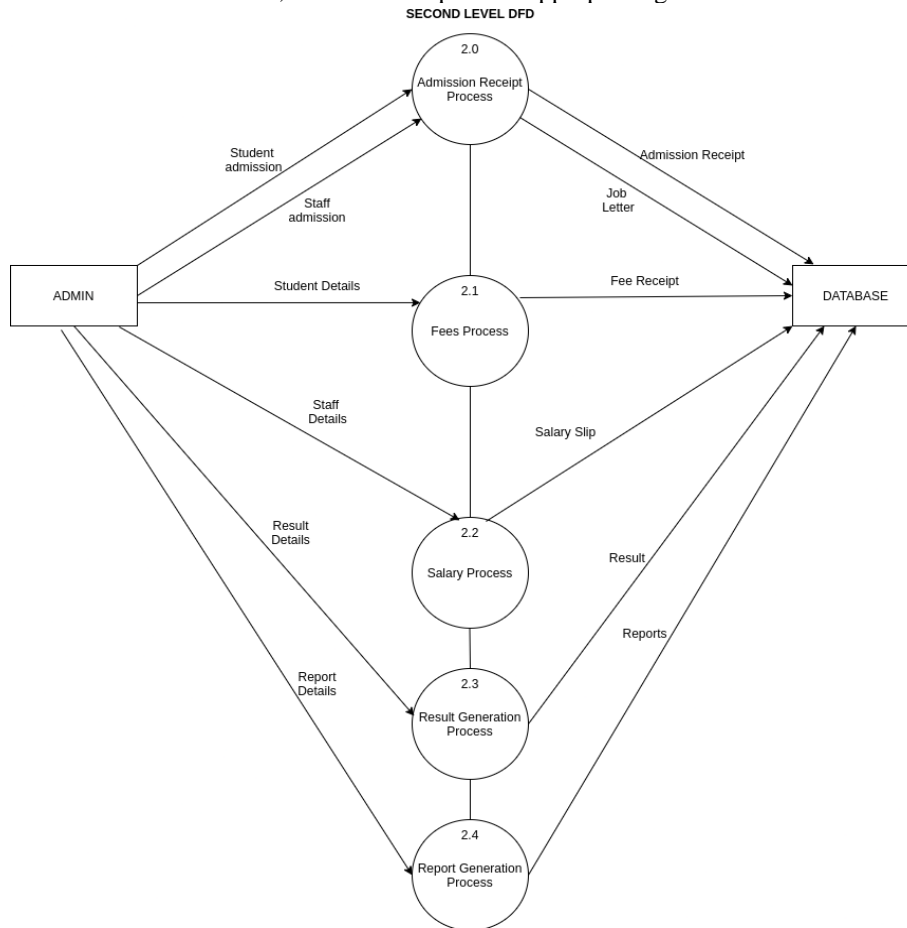
The teacher can take the students' attendance. He or she only needs to enter the class and section names into the portal, and the portal will display the entire list of the section's enrolled pupils. The teacher can then mark the students as present or absent and keep the data. This information will be reflected right away.

View Student Profile:

A teacher has access to any student's profile and can obtain information about it.

View Student's Grades:

This is another add-on available to teachers. He or she has access to the student's performance in class components, mid-term, and end-term exams. As a result, he or she can provide appropriate guidance to the weak kids.



Student

The student is also an important component of the system. The students can access their student accounts at any time.



Payment:

This is one of the system's most appealing aspects. The student will be able to see if he or she has any outstanding debts. It could be a library fine, a semester fee, a sports fee, or something else entirely. If this is the case, he or she can make a payment through online banking or another way.

Timetable:

Without a schedule, nothing will fall into place. The student can view the schedule for the class he or she must attend, as well as some information such as the class number, class hour, and which teacher will be teaching that class, among other things.

Exam Seating Plan and Exam Result:

Students must determine their exam seating plan prior to the start of the exam. It may be easily accessed, and they can also retrieve their examination results or class assessments.

Parents

It is critical for parents to be aware of their child's position and how they are performing in the academy. There is also an option for the parents to make this less of a headache.

They can keep track of their child's everyday activities at school. They can perform the following:

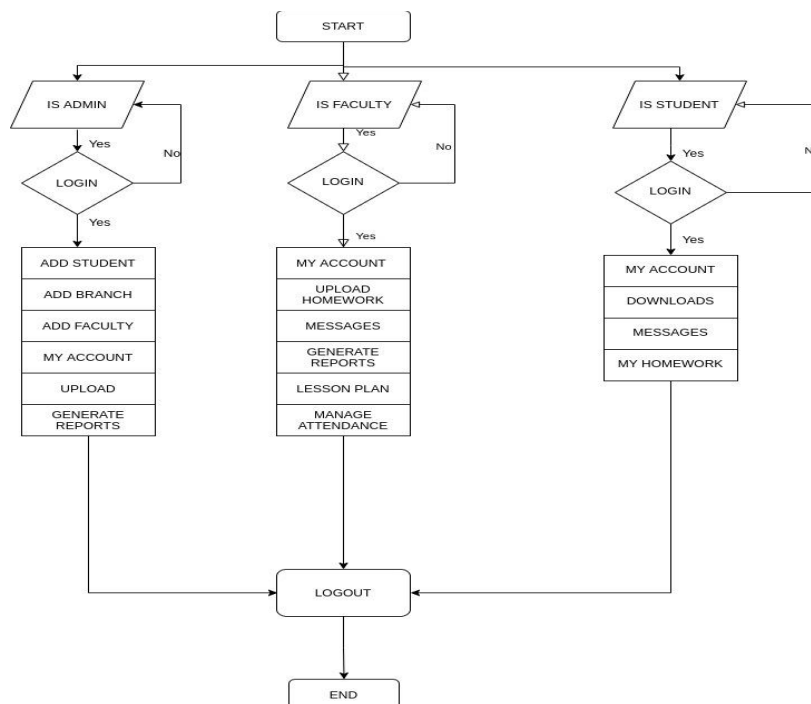
- View the child's report card.
- View the Attendance
- View the Marks
- Check out the timetable

Librarian

The information regarding the books will be kept on file by the librarian. He or she will be able to distribute any book to students or teachers. He'll know which books are in the system and when they'll be available, but not when they'll be available.

Fees & Expenses

The accountant is the person in charge of the school's financial transactions, such as collecting fees from students, paying instructors' salaries, determining how much money is spent on school ceremonies, and overseeing school renovations.





### Student Information System

The student can use this service to check their attendance, progress report, and results, as well as send requests for any required documents, view notifications, examine timetables, and view and submit assignments. Students have the opportunity to provide comments on the teacher's performance in class.

### Academic Management Service

The administrator will be able to add, amend, and delete courses using this service. The administrator will also be able to add, alter, and delete the course's subjects. Only the administrator's courses are visible to the teacher, guardian, and students.

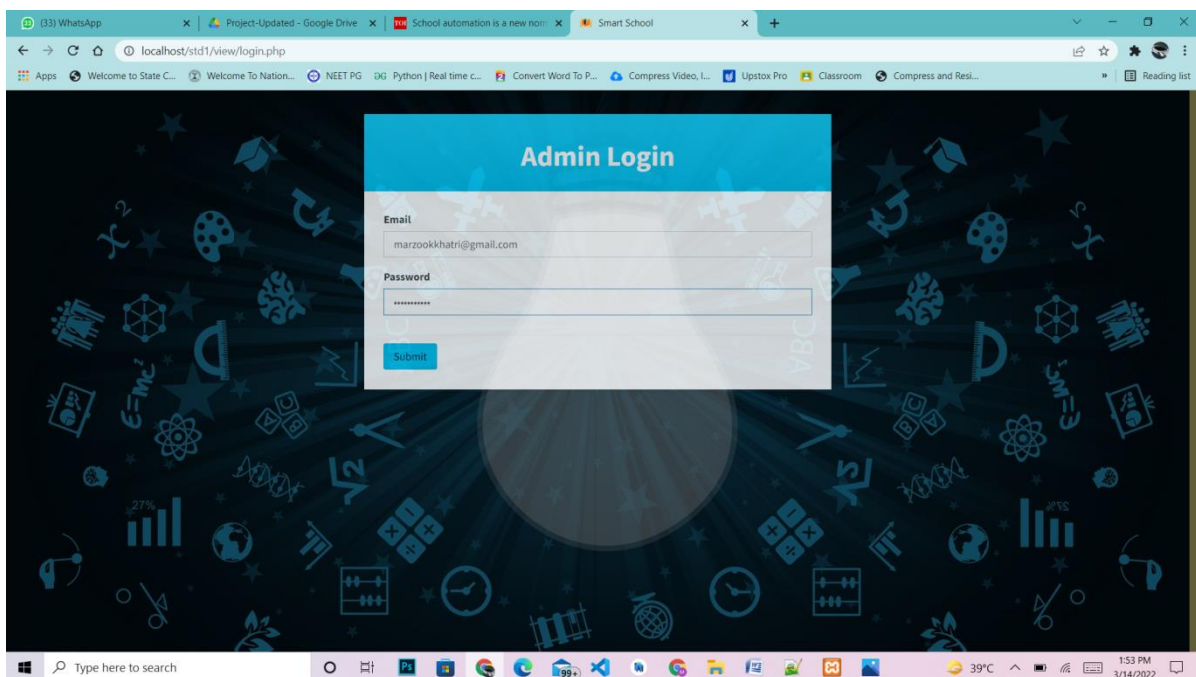
### Attendance Management Service

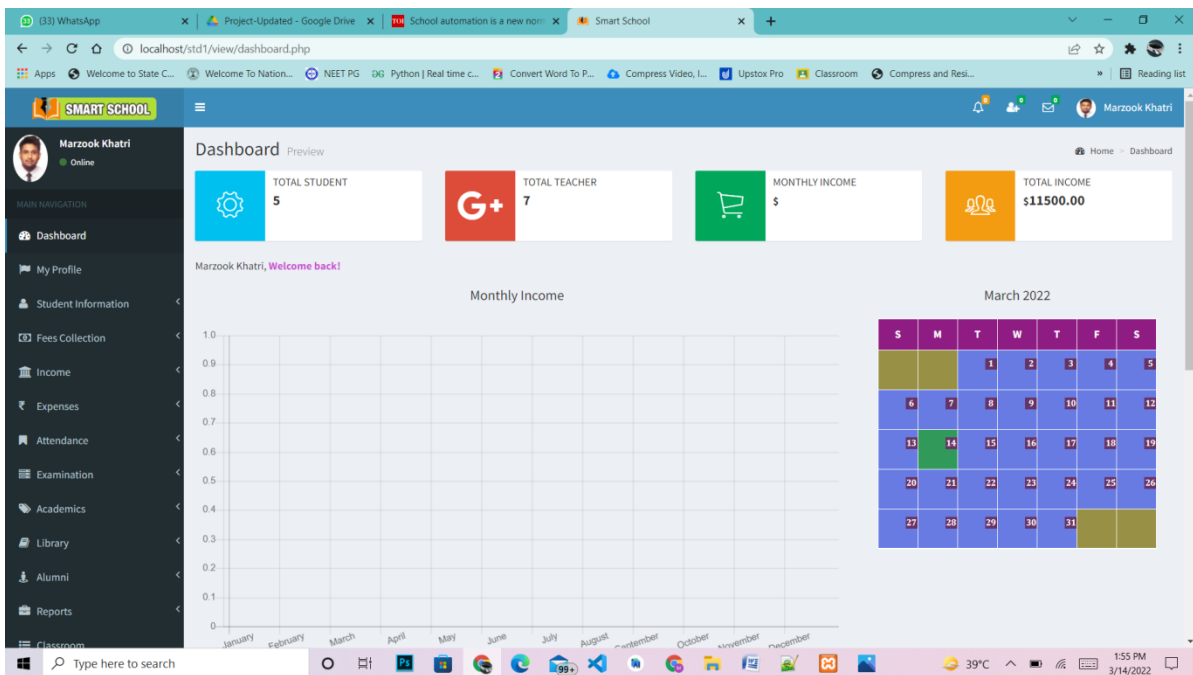
Using this service, administrators will be able to submit, edit, and delete student attendance based on the course and class they are enrolled in. The attendance is only visible to the teacher, guardian, and pupils.

### Administration Management Service

The administrator will have full access to all resources in this service. The administrator can send out notifications by email, SMS, and push notifications. The administrator has the ability to add, update, and delete student, guardian, and employee information.

## RESULTS:





The 'Add Student' form includes the following fields:

- Student Details:** Admission No., Full Name, Roll No., Class, Section, Gender, Date of Birth (mm/dd/yyyy), Category, Religion, Caste, Address.
- Parent/Guardian Details:** Index Number, If guardian is (dropdown), Full Name, Enter guardian relation, Enter Guardian Occupation, Address, Email, Phone, Photo.

### Technologies used:-

Web browsers can read HTML files and turn them into visual or audio web pages. All websites are built on the foundation of HTML components. When the definitions of any style element clash, CSS is used to create a Web page drawn from many sources with a determined order of priority. PHP is a server-side scripting language that is used to create effective & dynamic web pages. It's possible to embed it in HTML. MySQL is the most widely used open-source database on the planet.

### CONCLUSION

Based on the results of the experiments and tests, the proposed method is efficient and user-friendly. In comparison to current methods of managing academic institutions, this project, which produces centralized software, makes administration work and management easier and gives full information about the issue of users' interest with just one mouse click. An easy-to-use user interface can be offered to the educational institution, allowing all services linked to



the university to interact with one another and share data. Because the web application is built with PHP, MySQL, and an agile approach, new services can be introduced in the future without requiring changes to the present code.

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