# School ERP System

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## ABSTRACT

In a school there are various sections and each section handles all student information and school database. These sections are linked with each other. Current System of school is having problems of interlinking and data repetition. To overcome these problems we present School ERP System which is automated and centralized. This system have easy user interface and have powerful data management system which makes this system very useful.

**Keywords:** ERP System, Case Study, ERP Survey, Enterprise Resource Planning, modules, Management System.

## I. INTRODUCTION

The main objective of the existing system is to provide a user-friendly interface. The School ERP system now computerizes all the details that are maintained manually. Once the details are fed into the system or computer there is no need for various persons to deal with separate sections. Only a person is enough to maintain all the reports and records. The security can also be given as per the user requirement.

1. High volumes of data can be stored with case.
2. Maintenance of file is efficient and flexible.
3. Records are always updated.
4. Edition of Stored data and procedures can be easy.
5. Reports can be generated with cases.
6. Accurate and perfect calculations are made.
7. Manpower is reduced.

## II. LITERATURE SURVEY

ERP is stands for Enterprise Resource Planning. Enterprise resource planning (ERP) is business management software or a system which is typically used to manage core departmental data of respective business. ERP provides an integrated view of business processes, often in real-time, using common databases maintained by database management systems. ERP system track business resources— raw materials, cash, production capacity and the status of business commitments like: payroll, purchase orders, and orders. The application that make up the system share data across the various departments (purchasing, accounting, sales, manufacturing etc.)That provides the core data. ERP facilitates information flow between business function, and manages connections to outside stakeholders.

Every school has to maintain a management system for various sections which may include performance analysis, attendance system, test wise result, student information, fee structure, academic information, transport facility, staff information and many more. Managing all these sections manually on paper becomes very time consuming and complex tasks. In such system there is high possibility of misplacement of collected data and data redundancy in the form of paper records in order to overcome these drawbacks there is a need to design and implement School ERP system where a school staff can track a student profile in all aspects of academic course.

School ERP system is an online web based system which implements an user friendly and attractive

interface for school. The aim for deployment and implementation of this system is to replace manual system of schools with an automated web based system. This School ERP system also manages data accurately and efficiently which is stored over a long period of time. School ERP system provides single access point to all principalistrative system of schools. In previous systems all the departments are worked independently and separately. If anyone want to access that data collectively then it is not possible with such systems.

System study of such system shows that all the booking was done manually on registers, which was very complicated job. Report generation of all records was also not possible in the existing system. Also the work of school was manually maintained and stored. All this data is maintain through register or file system in the school.

Current mode of working is based on manual system in which the all the data is first received from respective personnel and then entered in the registers or files. It is very complex job and time consuming also. The existing system is also dependent on students, if the students are absent. Then performance of student will be affected. Due to huge volume of data, a lot of problems are involved in maintaining, updating and retrieving selected information. Since previous system is totally maintained manually, some of the difficulties involved in existing system are as follows:-

1. Redundancy of data.
2. Difficulty in updating the data.
3. Non-centralized data.
4. Delay in retrieving information.
5. Problem for keeping the data.
6. Not proper retrieval of information.

## III. SYSTEM DESIGN

### A.Deatailed Problem Statement

The School ERP software solution will include the following primary modules/components: student,

financial aid, finance, human resources, and advancement, collage data warehouse, reporting and analytics, workflow, document management, and student, faculty, and staff portal. Implementation services will include: technical services, data migration and conversion services, integration services, database management services, and system/end-user training.

### B. System Architecture

A System Diagram (SD) in software engineering and systems engineering is a diagram that represents the actors outside a system that could interact with that system. This diagram is the high level view of a system. SDs shows a system, often software-based, as a whole and its inputs and outputs from/to external factors. System Diagrams are diagrams used in systems design to represent the more important external factors that interact with the system at hand. This type of diagram according to Kossiakoff (2003) usually "pictures the system at the center, with no details of its internal detail structure, surrounded by all other interacting systems, environment and activities. The objective of a System Diagram is to focus attention on external factors and events that should be considered in developing a complete set of system requirements and constraints".
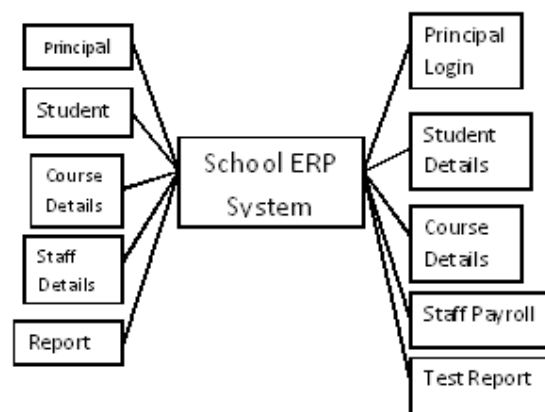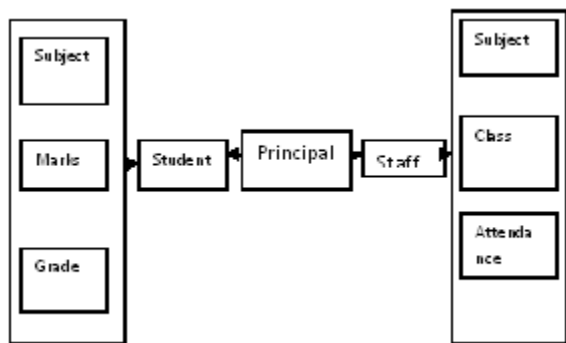
**Figure 2.** System Design

a.Core Module

✓ Principal
✓ Staff
✓ Student
✓ Management

### b. Principal Module

Principal has all the access rights to the system. Principal is able to manage the student Admission, Staff Registration, Academics, Class Routines. First he adds all the staff members of respective departments. Then the classes are added and the respective staff members allocated to the class as a class coordinator. After adding class and subjects the student admission process starts. This all tasks are managed by principal only. This access is forbidden for the rest of users. Principal can manage the accounts of the all the students' and staff and parents also. He is responsible to create and send student reports to their respective children. All the logs of student information can be view and manage by Principal itself.

All the manual working of Principal is skipping through this system.

### Workflow:
1. 1.Start
2. Login
3. Add/Delete Staff
4. Add/ Delete / Edit Course
5. Add/delete/Edit Class
6. Add/delete/Edit Student
7. Add/Edit Class Routine
8. Manage Dormitory
9. Logout
10. Stop.

### c. Student Module

Students are admitted by admin only to the system. When he got admitted the username and passwords are generated by admin and can be managed by student afterwards. Student has access to personal profile, current attendance record, Class Tests records, Daily Class Routines and all the notifications and upcoming events which are managed by admin. Students also view his respective bus route and bus number through the transportation module. Another important facility provided for students is to view the notification of his/her respective department.

### Workflow:
1. Start
2. Login
3. View personal information
4. View subjects
5. View teachers
6. View marks
7. View class routines
8. View transport
9. View notice board
10. Logout

### d. Staff Module

Staff members are registered by admin and login details are generated by admin which can be managed by staff afterwards. Staff has access rights to manage all the data of their subjects of respective class. They can manage daily attendance of all students of respective subjects and classes. Staff members are able to give notifications and can upload some documents related to their respective subjects. Staff can generate the daily, monthly or yearly report of individual student as well as class.
Mark sheet generation and time table generation facility is also available for staff. Instead of manual work this application gives automatic work.

### Workflow:
1. 1.Start
2. Login
3. View student information
4. View/Edit student's marks
5. Manage daily attendance of students
6. Add notes
7. View subjects

8. View personal class routine
9. View transport
10. View noticeboard
11. Logout
12. Stop

## C. Database Model

Database has many modules such as:

1. Student Data Management
2. Staff Management(Teaching and Non-teaching)
3. Courses &Subject management
4. Student Attendance & Leave tracking
5. Staff Attendance & Leave tracking
6. Exam and Result management
7. Staff payroll (Salary slip generation)
8. Student Fees payment & Balance Tracking
9. Historical Data Management

### 1. Student Data Management

Student data management contain student_main table. This table has following columns :
stud_id, stud_name, stud_address, stud_contact_no, stud_standard_id, stud_div, parent_name, p_contact_no, p_office_add, p_mobile_no, p_email_id.

### 2. Staff Data Management

Staff data management contain staff_main table. This table has following columns:
emp_id, emp_name, emp_addres, emp_contact_no, emp_email,emp_designation, emp_basic_sal, emp_type, emp_qualification, emp_mgr_id.

### 3. Courses and Subject Management

Courses and Subject management contain three tables course_tbl, subject_tbl, course_sub_tbl.
Course_tbl contain following columns:
course_id, course_name, course_type, course_div, course_fees.
Subject_tbl contain following columns:
subject_id, sub_name, sub_max_marks, sub_passing_marks, pract_marks, pract_pass_marks.
course_sub_tbl contain following columns(Many to Many relation):
course_id, subject_id, eff_start_date, eff_end_date.

### 4. Student Attendance & Leave Tracking

Student Attendance & Leave Tracking contain two tables stud_attendance_details, stud_leave_details.
stud_attendance_details contain following columns:
stud_id, stud_standard, stud_div, stud_attendance, attendance_date.
Stud_leave_details contain following columns:
stud_id, stud_standard_id, stud_div, leave_st_details, leave_end_date, no_of_days, reason.

### 5. Staff Attendance & Leave Tracking

Staff Attendance & Leave Tracking contains four tables emp_attendance_details, emp_leave_master, emp_leave_allotment, emp_leave_detail.
emp_attendance_details contain following columns:
emp_id, emp_attend, attend_date, entry_time, exit_time.
emp_leave_master contain following columns:
leave_id, leave_type.
emp_leave_allotment contain following column:
emp_id, leave_id, leave_balance, total_leaves.
emp_leave_details contain following column:
emp_id, leave_id, start_date, end_date, no_of_days, leave_app_date, approve_flag.

### 6. Exam & Result Management

Exam & Result Management contain two table exam_master, stud_exam_details.
exam_master contain following columns:
exam_id, exam_type.
stud_exam_details contain following columns:
stud_id, stud_course_id, stud_div, stud_sub_id, stud_sub_marks, stud_total_marks, exam_id, exam_year, exam_date.

### 7. Student Fees Payment & Balance Tracking

Student Fees Payment & Balance Tracking contains stud_fess_details.
stud_fees_details contain following columns:
stud_id, fees_paid, fees_balance, total_fees, payment_date, due_date.

### 8. EMP Payroll

Employee Payroll contains emp_salary_details.
emp_salary_details contains following columns:
emp_id, gross_sal, net_sal, pf_deduct_amt, tax_deduct_amt, extra_deduct_amt, sal_date

## D. Security Module

To keep availability, consistency, integrity, durability there are several generic frameworks implemented in database.

i. Audit Log Framework

ii. Error Logging Framework
iii. Conditional Security Frame
iv. Dynamic code
v. Data Mirroring
vi. Data hiding

## IV. CONCLUSION

The fundamental problem in maintaining and managing the work by the administrator is hence overcome. Prior to this it was a bit cumbersome for maintaining the time table and also keeping track of the daily schedule. But by developing this web-based application the administrator can enjoy the task, doing it ease and also by saving the valuable time. The amount of time consumption is reduced and also the manual calculations are omitted, the reports can be obtained regularly and also whenever on demand by the user. The effective utilization of the work, by proper sharing it and by providing the accurate results. The storage facility will ease the job of the operator. Thus the system developed will be helpful to the administrator by easing his/her task.

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