

# SUMS Tool: Smart School Management System

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## ABSTRACT

*The SUMS Smart School Management System is a business Optimization of school or Educational Institute and its Processes. Project will cover usually all areas related to an Educational Institution especially School. In this paper, the reader will also understand in the first part of the review of school management system. The aim of the review is to clarify you the real part of admin, student, teachers and parents of the school variables impact student achievement and description with details and daily to daily updates.*

*The paper concludes that the synthesis of all findings, and the implicate students background variables which is the most important to the students achievements, also same instructions are relates to the teachers related variables. A system security is the part of given options for the allocated works with respect to their allocated rights and privileges to each and all users, along with this sub module with backup is automated in the system.*

**KEYWORDS:** SUMS, SVM, Apriori, EM, Dashboard .

## 1. INTRODUCTION

SUMS: SMART SCHOOL MANAGEMENT SYSTEM provides facility to create, administer, manage, track and report all of the instructions and information of development activities carried for students. It mainly focused on the task of teachers to monitor student progress, administer homework and assignments and generate the reports according to the student academic performance.

Parents can oversee their child's academic performance and receive regular updates from school. It is the system which gives anytime, anywhere access to school management and administration. This system empowers the teachers and administrators with tools which can be helpful to students in achieving their success. The existing system have some drawback such low processing speed, low capability of data handling, less storage space, greater response time, etc. The proposed system overcome all the drawbacks of the existing system and is very easy to use for common people.

It is designed for better interaction between student, teacher and parents. This management software gracefully handles all the requirements of easy school management system. The school management system being web based can be accessed from anywhere so it enables students, teachers and parents be in touch with each other all the time.

## 2. LITERATURE SURVEY

First various organizations and students have come up with many functionalities for keeping a track of student attendance and academic progress. It helps the parent/guardian to keep a track of its pupil progress. The parent/guardian get alerted whenever his pupil gets less attendance or get less marks in the exam without sending any paper notice to the parent/guardian via pupil.

This makes the communication between teacher and parent easy and but sometime the system may fail or if this process is manually done there might be a chance that notice to parent might not reach. Also online exams have started, we is boon for students as they can give the exams at their home. Enormous increase of students has led to increase in the storage functionality of the current system which cannot be possible for some schools as it is expensive and takes time to implement.

Attendance, pupil performance, course availability and other faculty data storage is the main functionality of the school management system which has to be improved in the existing system. The existing model provides navigation and ease of access for the system but can also crash if there is a load on the system.

Course availability has to be implemented in the current system and various other functionality such as online fees payment, scholarship notices and events notices should also be implemented in the existing system. Since the system in a web-based application which can be accessible from anywhere, new technologies should be implemented like IOT (for biometric attendance), etc. This can rapidly develop the environment of the system in the student domain.

### 3. PROBLEM DEFINATION

Nowadays, many schools are facing a problem with the management of students. The increasing number in workload and documentation of each student has put a burden on the teachers. Also, teacher's work and the course's schedule are not properly managed. Sometimes, the students don't know its exact marks he/she gets in the exam and also the teachers are not ensured that student's performance and data is known by its Parent or Guardian and they have to come to school to get the information of its Pupil. The management of the school has to do all the handwritten paperwork which is troublesome and occupies a lot of space which is the problem for the school and to adopt technologies is expensive for some schools, so some of them don't accept new system for management.

### 4. PROPOSED SYSTEM

This project is developed to maintain communication between teachers, students, and their parents. In this system, staff can access all the student-related information from their login at any place. It includes perfect documentation and storage of assignments, class notes and lesson plans.

The parent can directly go to the school website and check up-to-date attendance and progress report. Admin can monitor all student details, fee, attendance, and academic, staff, payroll, manage and track transport system, manage and facilitate library management system, keep track of exam schedules and marks, convey required information via virtual notice boards, leave application and status monitoring. The main thing is this service will be made available 24/7 and can be accessed from any place with a web connection.



Fig 4.0: FLOW CHART OF THE SYSTEM

## 5. METHODOLOGY

In the proposed system, we have implemented various data analytics algorithms as per which it is easier for any user to search the desired data. In our system we have implemented various Data Mining Techniques like SVM, Apriori and EM algorithms for clustering data. Data mining is used for sorting huge database easily which can be used by admin to search teacher's/student's data and teacher to sort/search student's information and also to store multiple students data.

### 5.1 SVM

SVM (Supply Vector Machines) is method which is used to analyze data for classification and regression analysis. This method uses a hyper plane which performs simple classification using simple factors of data. It divides the data into two simple classification factors for building a data model for analysis training. In our system, the SVM acts a non-linear binary classifier.

### 5.2 Apriori

Apriori uses association rules and it is implemented where the data query are more in number. The association rules understand the relations and co-relations between datasets and cluster them accordingly. It is a type of breadth-first search and a Hash tree that concludes the data in k length or k-1 length means which creates indefinite pattern in the data. It scans the database frequently, which points out the most frequently common data and then gives the output accordingly.

### 5.3 EM

The expectation-maximization techniques uses the likelihood of the statistical data item-sets after analyzing the datasets which has many latent variables which can't be solved using equations and that has non-latent variables are solver directly using this technique. It is a iterative method that performs an expectation state and a log-expectation state that evaluates the exact state of the datasets that has the expected result.

## 6. CONCLUSION

The whole project is web-based project. Its have multiple roles and Access to all pages are based on roles. Admin, Teachers, Student, Library admin and Account will be major roles. Dashboards of all above users will be as per respective their roles. Based on roles one or another Part of Dashboard will be available. Automated student attendance and the computerized management of marks and grades Adding users and assigning them roles which will be check or guidance of Admin will be provided.

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