



## A Mobile based Solution for School Management and Operation

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**Abstract:** Education is a very important of every human. So it is important to provide basic education to the young children's for develop their future. Now a day's advance technology plays vital role in educational related process among students, parents, teacher and other non- teaching staff of an educational system. The uses of smart phones is increasing drastically. In this paper an e-school mobile app is proposed with a comparative analysis of the features available in different school app. List of features and their use cases are also discussed with their technicalities.

**Keywords:** School Management; Mobile App; Mobile Computing; School Operations; School App Features

### I. INTRODUCTION

Education develop every human. It is the most powerful things for decrease poverty and inequality between male and female. It increase economic growth of the nation. Currently, in education sector government has given various schemes, special emphasis and school improvement activity like training and upgrading to teacher, professional development for teachers and this action is performed in both primary and higher secondary school. For fulfilled this activity one of the best tool is SCHOOL MANAGEMENT SYSTEM. School Management system has task like register students, view their attendance, showing result, fees details ,showing timetable, official transcript, showing announcements, generating various types of reports for the teachers , parents and other non-teaching staff. Now a days every persons using new technology and replace with machine that perform more quick action and more continuously. This SMS documents are stores in Cloud on firebase on internet.

For promoting student's success and achievement school have accurate and complete information about students. One of the advantage of School Management System is rendering all required information about student and prove best tool for school. The government schools are using paper based system for storing students data and school administration staff apply their knowledge for that task and miss in classes and course, which is waste of manpower and more time unnecessarily, which does not need for today's technologies. A parents can show their child's result, attendance, exam schedule, fees, timetable and giving feedback to the school. A teacher wants to connect with students or parents for any purpose which need to search of the students' record in record office. It have been very difficult to search record in thousands of records. Due to inefficiency of the current system, the need arises to SCHOOL MANAGEMENT SYSTEM for handling student's attendance, to generate report card which is satisfied to the teachers and parents.

### II. SCHOOL MANAGEMENT SYSTEM

School Management System plays very vital role in administration of the school and fulfilled needs of a parents. This chapter identify concept and related work about school management. 21St century is a Digital age century. (National Academy Of Engineering, 2002) "Available evidence shows that American adults and children have a poor understanding of the essential characteristics of technology, how it influences society, and how people can do affect its development. Neither the educational system nor the policy-making apparatus in the United States has recognized the importance of technological literacy". Technologies are growing at a tremendous rate and U.S. citizens are not equipped to make well-considered decision or not think critically about technology. In short, we are not "TECHNOLOGICALLY LITRATE" (National Academy of Engineering, 2002). "..... The future of educational technology rests to a great degree on us (educator): how we view technology, how we respond to the challenge it presents, and how we see it helping us accomplish our own informed vision of what teaching and learning should be." Roblyer and Edwards states (2002). "The sheer magnitude of human knowledge, world globalization, and the accelerating rate of change due to technology necessitates a shift in our children's education – from plateaus of knowing to continuous cycle of learning" (North Central Regional Educational Laboratory,2003).

As the popularity of these types of mobile and web application generate the text data in large size and high data generation speed, in the form of reviews and feedback given by different users of the application [7]. The knowledge generation

by summarization of these types of text data can be used to improve the school functionaries which will be beneficiary to the students [4] [6].

### III. RELATED WORK

Following are the related research and project work in the area of school management using ICT tools and mobile devices.

Juarez Bento da Silva (2014) [1], presents the use of ICT tools in school management with a pilot project named as RExLab (Remote Experimentation Lab). The project provide a platform for sharing and accessing educational content through mobile devices.

Chia-Tung Wu (2016) [2], proposed a mobile based app for monitoring health issues for school child. Mainly this proposed app is monitoring Asthma disease for school-age children.

Abir Jaafar Hussain (2015) [3], presents an e-learning system for primary school children for learning the concept of computer programming. The system provide an e-learning system with web-based communication structure.

Fatma SADIK (2014) [5], presents the research for classroom management skill of a teacher in school level. This research also demonstrate the mechanism to improve the classroom management skills.

### IV. TECHNOLOGY GROWTH

In America, the academic year 1991-92 and 1996-97 invention grew of computers 168% and 1.2 million additional computers added. In 1996-97 there were 6.3 million computers virtually 100% of the American's schools.89% schools had internet connection in 1998. Today every public school has access internet, but the real issue lies in the lack of training and lack of understanding of how computers can be used to improve learning. National Science Foundation found that more students are comfortable with new technology. This Survey includes following:

- A ratio of 99% teenagers used computer their lives
- A ratio of 82% students have great computer knowledge and know how to used new technology
- A ratio of 80% used computers one time in a week
- A ratio of 77% people prefer that the internet is more using than books and magazines
- A ratio of 67% people used personal computer at their home
- Advance technology in medical research would like to more research on school system
- Ratio of 63% people who their electronic equipment or software how to operate rather than need of asking for help of other person
- 59% peoples would prefer to live in a house filled with high-tech equipment and appliance when they are adults rather than a "simpler" house
- A ratio of peoples would prefer to live in houses where high-technology and appliances is 59%
- A ratio of 58% peoples like to expense more time that they currently do using computer
- The internet is used by 55% people

Coordinators of district technology, previous assessment believed that have been tried to equipment measures than technology planning and advancements. The main aim of this survey was to make simple, up-to-date and accurate School Management System. Milken family foundation conduct their 2nd survey in 1999.

### V. COMPREHENSIVE ANALYSIS

Table 1 shows a comprehensive analysis of different school management app and their features. The table also shows the comparison of features available in different apps with the proposed mobile app solution.

**Table1: Comparative Study of Features available in different E-School mobile apps**

Sr.no	Open Source SMS Software	IP Camera Config.	SMS to Parents	Parents Teacher Meeting	Support Free cloud software	Students doubt solving or chatting
1	OpenSIS Open Source	✗	✗	✗	✗	✗
2	Gibbon	✗	✗	✗	✓	✗
3	SchoolTool	✗	✗	✗	✓	✗
4	Ascend SMS	✗	✓	✓	✗	✗
5	Fedena	✗	✗	✗	✗	✗
6	TS School	✗	✗	✗	✗	✗
7	School Time	✗	✗	✗	✓	✗

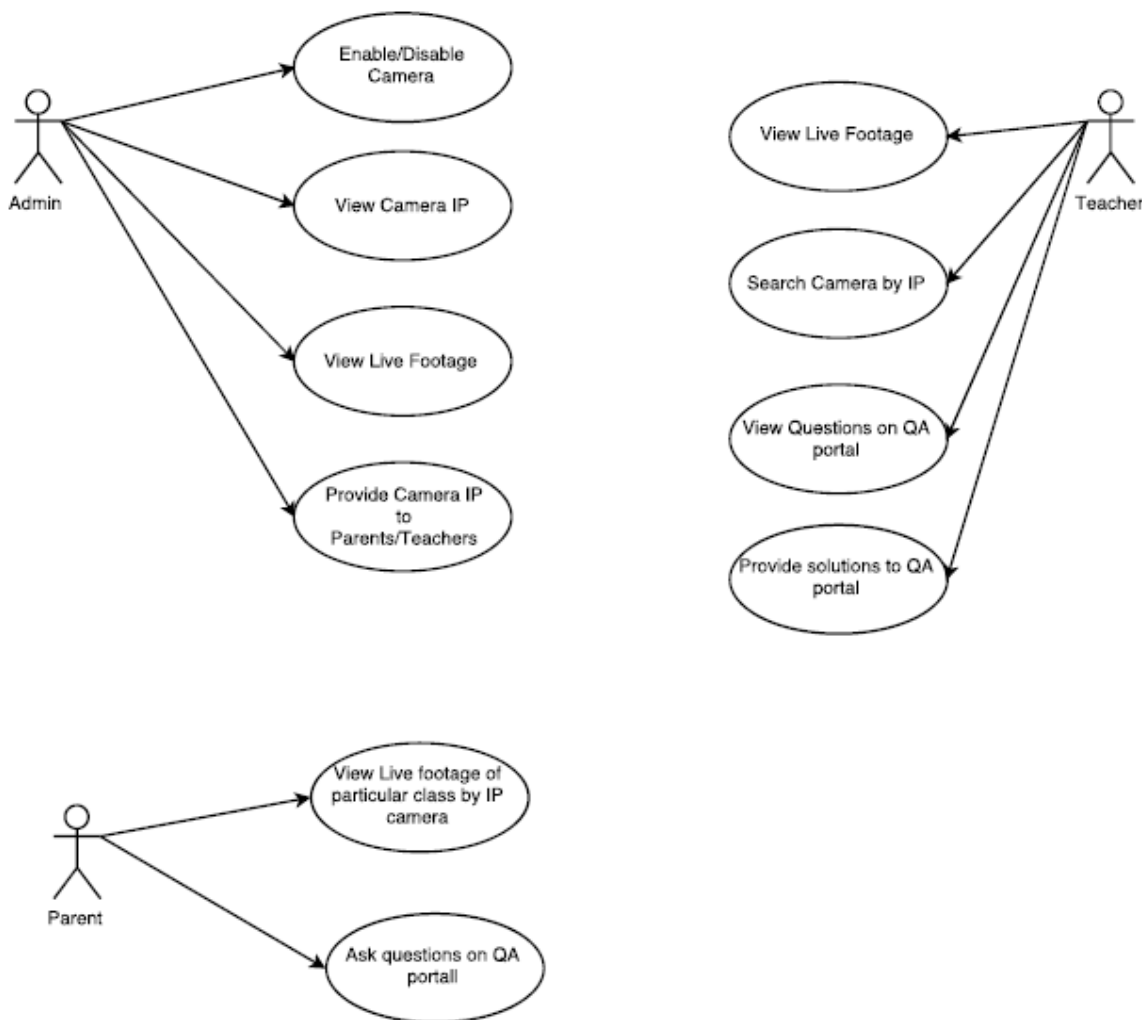
8	FeKara	x	✓	x	x	x
9	E-School App (proposed app)	✓	✓	✓	✓	✓

**VI. PROPOSED E-SCHOOL APP**

The proposed E-School mobile application connects Specific School and Parents of Students. This application allows to communicate parents and Teachers by using Smart Phone application. Parents can view attendance, Exam report, Schedule, Notices etc. by using Smart Phone. They can also give feedback or Suggestions to School from application. The scope of E-school APP is very vast. It includes everything regarding to the school. It interprets and clarifies the functions and the activities of the school program in fruitful relationships and harmonizes their mutual action. It ensures

planning, good direction and efficient and systematic execution. Based on the comprehensive analysis done presented in table -1 following features are selected for proposed e-school app.

- The scope of E-School App covers the following:
- Intellectual development of the child.
- Moral development of the child.
- Social development of the child.
- Physical development of the child.
- National and emotional integration of the child.
- Vocational development of the child.



**Figure 1: Use case diagram for IP camera configure and Question answer portal.**

Proposed application provides two additional and important features which can be needed in today’s era (figure -1). Those two features are following: a) IP based CCTV Camera: In this feature, application allows parents to see activates of their child during his/her time of lecture in a class. They can track real-time activities of their children. By this feature Teachers

can also view the real-time activities of students in recess or break time and during other teachers’ lecture. Admin can give IP of camera to Teachers and parents and can also view the footage of any camera. b) Question-Answer portal: In this feature, application allows students to ask questions or doubt

related to syllabus on this portal and teacher can view all questions and provide solution for those questions on the portal. This portal is limited between students and Teachers.

## VII. CONCLUSION AND FUTURE WORK

Enhancement of digitalization and uses of smart phone in India raise the requirement of a robust and effective mobile app for management and controlling the operations for a school. The proposed app in this paper provides an effective solution for school management and operations as well as a communication structure between different stakeholders of the school. A comparative analysis of features available in different mobile applications. The list of selected features and their use cases are also discussed with their technicalities. The implementation and troubleshooting with different scenarios is proposed as future work.

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