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QR Code based Student Monitoring System

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Abstract: A system that takes down student's attendance, marks and assignments using QR code. Every student is provided with a card containing a unique QR code. Teacher just have to scan the student cards in front of webcam and the system notes down their attendance, marks and Assignments as per dates. After note down the attendee student parents will get the SMS. when the children enters the bus, QR code is scanned by the driver, when bus gets started, the GPS in mobile is turned on so that parents can easily track the bus location of their child, thus parents get notification through SMS once child enters/leaves the school. Parents will give the feedback for our application and all feedback are visible to the admin. Such type of application is very useful in school. This system enables us to speed up the process of taking attendance and would save valuable teaching time.

Keywords: QR code, GPS location tracking, SMS notification, Feedback

I. INTRODUCTION

Children are our nations most precious resources and means of progress. Child safety needs a multidimensional approach, which includes educating adults and children about dangers, designing safe environment. School is an important organization that provides structured education as well as plays an important role in child growth and development. A safe and secure environment is necessary for students of all age group. This system provides a safe and secure environment for children by sending the notifications to parents about their child activities in school, students are provided with an identity card which contains a QR code in it. So parents can easily monitor their child in the school as well as live track the school bus to know whether their child is in safe or not. Attendance in school will be taken by scanning QR code of each student and immediate SMS will be sent to parents. Teachers can also send child marks, notices, homework to parents via SMS. Parents can also give feedback to teachers. When child enters into bus the driver will scan QR code of a student, so that parents can get SMS about their child boarding and de-boarding details. Parents can also live track the bus details using GPS.

II. LITERATURE SURVEY

A. School Bus Tracking And Security System

S. Sangeetha, S. Krishnapriya, Ms. S Janani, has developed a system recommends a SMS based application which consists parents to track their children location in real time. Initially the details of the students are collected and stored in the database. The details are converted into QR code and embedded with children's identity card. When the children enters the bus, the QR code is scanned by the mobile application and the timing, stop details will be sent to the parents as notification. Later on, when the bus gets started, the GPS in the mobile phone is turned on and send the location updates to the parents to easily track the bus location.

B. A Students Attendance System Using QR code

Fadi Masalha, Nael Hirzallah have developed a system that is based on a QR code, which is being displayed for students during or beginning of class. The students QR code is scanned to confirm their attendance.

C. GPS Based Bus Tracking System

L. Singla, developed the application to build a vehicle monitoring system for school children. Nowadays, parents are perturbed about children going to school because of the increasing number of cases of missing students. On certain occasions, students need to wait a much longer time for arrival of their school bus. The system consists of an enabled android application which will interact with a server. Authentication, attendance monitoring, vehicle tracking are the other features provided by the system. Driver, faculty/teachers, parents, and administrators are the end users of the application. The application uses wireless technologies like GPS.

D. Survey Of Child Tracking Systems

Yogini Shendkar, Pallavi Shendkar, Sonal Parkhi, Priyanka Pansare have developed the child tracking system widely used over the globe to ensure parents that their child is safe in the school atmosphere. The movement of child can be tracked from home to school. The tracking kit which is embedded in wearable is connected to parents via notification which is sent to the parents mobile phone when child goes beyond safe route. The tracking kit can be installed in all kind of wearables such as shoes, id card, school bag, compass box, etc. Which are used by children.

III. EXISTING SYSTEM

Existing system is a manual entry for the students. Here the attendance will be carried out in the hand written registers. It will be a tedious job to maintain the record for the user. The human effort is more here. The retrieval of the information is not as easy as the records are maintained in the hand written registers. And in cell phone tracking system every child is given one small cell phone with the help of which parents can call their child whenever they want, so they get detailed information about the location and about the happiness of child. there is possibility that child may delete the call log details manually. But children between age of 4-8 may get problem in handling of cellular phone. Such children have huge tendency of playing, so they may miss cellular phone or they may not carry the cellular phone during play. In this case tracking of child activities will not be possible.

IV. PROPOSED SYSTEM

In proposed system a student is provided with QR code embedded ID card . when student enters the bus the QR code is scanned by driver. These details are stored into the database . The notifications will be sent to parents through SMS once child enters and leaves the school, enabling parents to trace the bus, helping safer ride to the school. And to provide a secure and safe environment for primary students and update their parents about their attendance, progress, and other activities of student with help of QR code scanning .

V. SCOPE OF THE PROJECT

To build safe environment for primary students, teachers and parents where all of them are seamlessly connected to build an integrating learning environment. Parents are updated with student's homework, attendance, progress and student security. Teachers can handle student professionally well in imparting education.

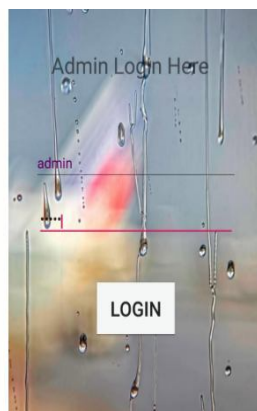
VI. OBJECTIVES

- A. To provide proper way of security by which parents can ensure the security of student.
- B. To provide feedback from parents to teacher.
- C. To provide an updated daily routines of the student to their parents from teacher.

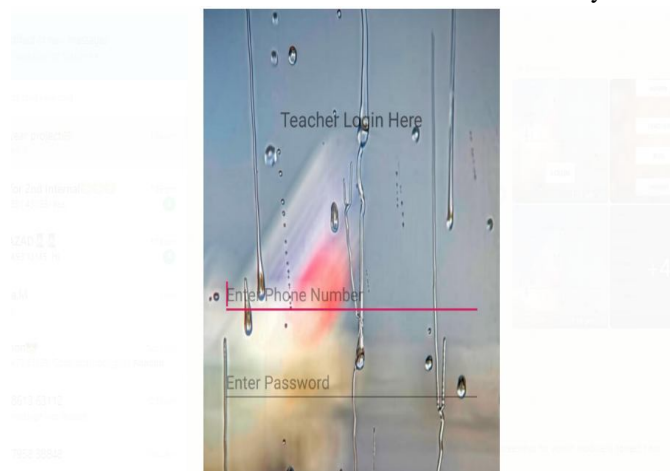
VII. DESCRIPTION OF THE MODULES

There are four modules in this project, they are:

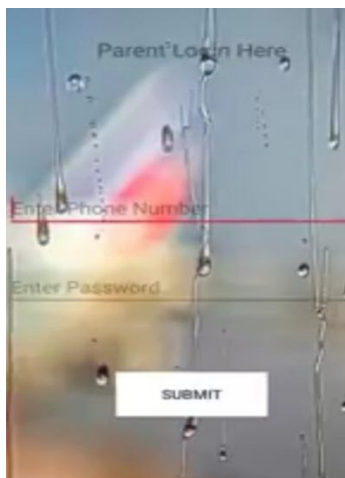
- 1) *Admin*: Admin gives the approval for all registered parents and teachers and can view all students progress, attendance, homework, and feedback details.



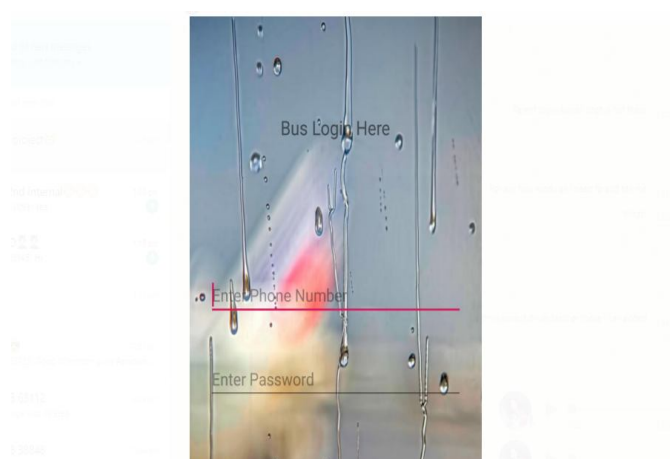
- 2) **Teacher:** Teacher will scan QR code at that time student attendance is automatically stored in database and SMS is send to the parents. At the end students attendance will be calculated and sent to teacher for analysis.



- 3) **Parents:** Parents get SMS from school about their children progress, attendance, homework and check-in and check-out details. Parents can give feedback to school.



- 4) **BUS:** When student enters into the school bus the driver will scan the QR code, automatically stored in database and SMS is sent to the parents after reaching the school. Again driver need to scan the student Id card so that parents receive SMS that your child has left the school.



- 5) **QR Code Generation:** A QR code uses four standardized encoding modes(numeric, alphanumeric, byte/binarykanaji) to efficiently stored data. The student details are stored in database and embedded into student ID card.



VIII. DESIGN

Architecture Diagram

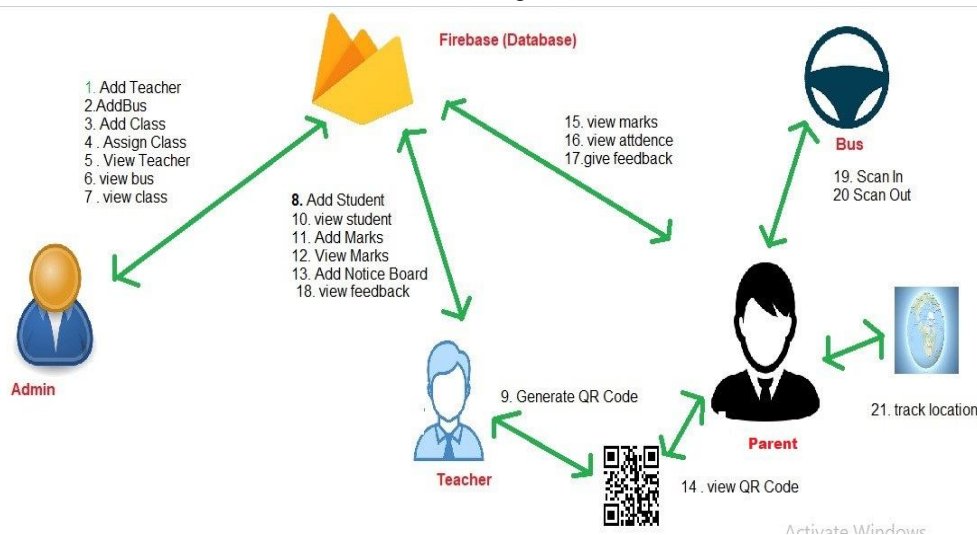


Figure: System Architecture

The above figure shows the system,

- where the admin of the system can able to add the teachers, students, he can assign a particular class to a student, view total number of teachers and the number of classes. All these details will be stored in database.
- Teacher can add a students to the class, view number of students to a particular class, teacher scans the student ID card and all details of students like attendance, marks, notice board are sent has a notification to a parents through SMS.
- Parents of this system can view the SMS sent from teachers, and they can live track the bus through GPS so that they can see whether their child has reached school safely or not. They can also give feedback to the teachers.
- Bus driver need to scan the students ID card while entering and leaving the school bus and these notifications will be sent to parents when child enters and leaves the school.

IX. CONCLUSION

The main application of this system is child safety and security; where crime rates are increasing towards students., many accidents and deaths are also caused by falls, inside and outside home and schools. There is a lack of security to child in this environment. The proposed project provides a safe and secure environment for students to avoid the crimes. In this system child is provided with an ID card embedded with QR code. By using this application parents will get SMS about their child details, parents can live track their child. They can also give feedback to teachers.



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