

QR Scan Based Intelligence System for School Bus Tracking

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Abstract: *The secured bus tracking system is useful to avoid the existing traffic jam of private vehicles and majority of the parents consider school buses to be largely unsafe for their kids. However, the school buses which are safe and user-friendly can reduce the use of private vehicles and will eventually reduce the traffic jam in cities especially in the school hours. Using the proposed intelligent and secured bus tracking system the parents can track the school buses. This tracking system includes an Android application that can be employed to send notifications during entry and exit of the students using Barcode scanner, ensuring arrival confirmation of the student by dual authentication duration while reviewing bids and also to spend the necessary amount of time during The focus of the system is to display the feasibility of a safe and intelligent school bus using secured tracking system based on authentication procedures. It is expected that this research will regain the confidence and reliability of parents in school bus and reduce the use of private vehicles. A smart school bus will ease the tension of the parents by notifying them about their child's entry and exit in the bus and will keep the students safe also the city will not face the situations like traffic jam.*

Keywords: School Bus, GPS, QR Scan, Smartphone Application, Android Google Maps

I. INTRODUCTION

The use of private vehicles causes unbearable traffic jam and majority of the parents consider school buses to be unsafe for their kids. However, safe and user-friendly school buses can decrease the use of private vehicles and will also eventually cut back the traffic jam in cities especially in school hours. All buses can be tracked by their parents using this proposed intelligent and secured tracking system for all school buses.

This proposed system contains an Android application that can be worked as to send notifications during entry and exit of the students using Barcode scanner, ensuring arrival confirmation of the student by entry and exit authentication.

The motto of research is to display the safe and intelligent school bus using secured tracking system based on entry and exit authentication procedures. It is expected that this research initiative will regain the confidence and reliability of parents in school bus and decrease the use of individual transport. A smart school bus will keep the student safe and ease the tension for parents and the city will have a smooth traffic system.

II. LITERATURE SURVEY

This paper is specially made for the student safety purpose. Nowadays, millions of children are going to school for their educational purpose. So, we need to develop a different type of system for the student safety. These systems used to track the location of bus or near by any taxi. This system helps to find the exact or current location of students by using Google Map. Child safety is most important for their parents as well as schools authorities. This application works as a personal digital assistant. This paper presents the working flow of the project. Smart bus tracking system project is an Android-based. Modern bus tracking systems generally use GPS technology for the tracking route and location of the bus via Google Maps. These applications are easy to handle and user-friendly. By using the internet we can view bus information. The paper also purposes of security system and driver prevention system. It is totally based on Google Maps.

and API's. It is more accurate to check or track the current location of students. This application gives brief idea about the routes, bus locations with online attendance features.

III. SYSTEM ARCHITECTURE

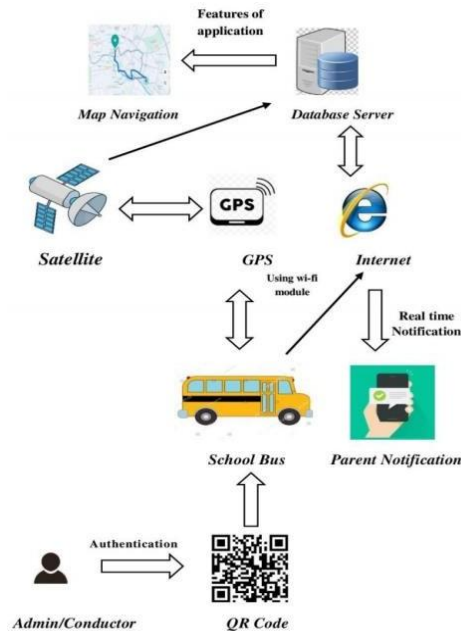


Fig 1. System Architecture

IV. PROPOSED SYSTEM

- Step 1: first student cqr code will be scanned for verification
- step2: Barcode doesn't match then it will be considered as invalid attempt.
- Step3: verification is done.
- Step 4: postive match occurs data will be sent to database and parents will be notified about student arrival in the bus through sms
- Step 5: student is about to be dropped off to his or her destination point code is checked again.
- Step 6: Notification will be sent to parents so that student can't get out of bus. Else or can't be late to get out of the bus they reach at school

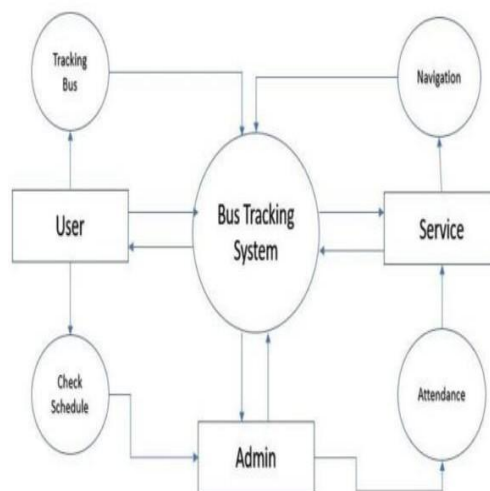


Fig 2. Proposed System DFD

Student Registration:

system admin can accessed to all authority. It interact means registration of student. Admin can add and update the student information to database.

Driver Registration:

Aadmin can add update the driver. if the information to database

QR code scan:

Bus driver getting student ID card of back side QR code scan automatically generated the student attendance and send sms to parents via notifications in there phone.

Notification generation:

Driver scanning their QR and will be generate the notification send.

Location:

Location of user is traced. location is sent sms in URL form form.URL is directed to G-Map.exact location is detected easily

V. RESULT

The application is designed and implemented in Android using SQite database, allowing easy reading and editing of student, conductor and bus data.

It is a cost-effective solution with no additional hardware and associated purchase and maintenance costs, and is user friendly and simple. It also provides added security by integrating the facility to optimise routes and tracking off route behaviour.

The conductor is alerted if any student is missed and the boarding status of all students parents as per the activity of the child which helps them notify about their ward's status.

Once the ID of each student is scanned, the application marks the attendance and sends a notification to the parent regarding

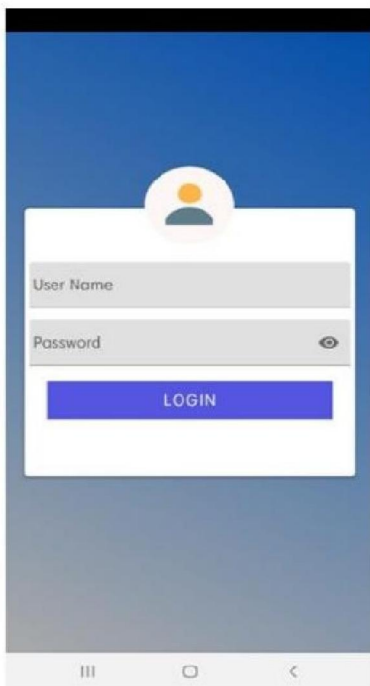


Fig3. Admin/Conductor home page



Fig 4. Admin Dashboard

Fig 5. Conductors Registration

Fig 6. Students Registration

Roll Number	Student Name	Email	Contact Number	Address	Mother Name
78	788	sm@gmail.com	8554882255	67 nsk	677
48	Rishant Patil	rishantp23@gmail.com	7588499748	Plot No. 12, Near Nimani Bus Stand Nimani	Namrata
40	Harshada	harshu@gmail.com	5704852358	Nashik	Surekha
23	Rushabh Kolhe				

Fig 7. Students Registration

Conductor ID	Conductor Name	Contact Number	Vehicle Number
28	xyz	8906350210	mh234
24	Pankaj	8554883610	MH15PB2316
22	kalyani	9139698988	124lhj
21	pallavi	7507141112	hggjj
20	demo	7845963258	

Fig 8. Conductor List



Fig 8. Generated QR Code

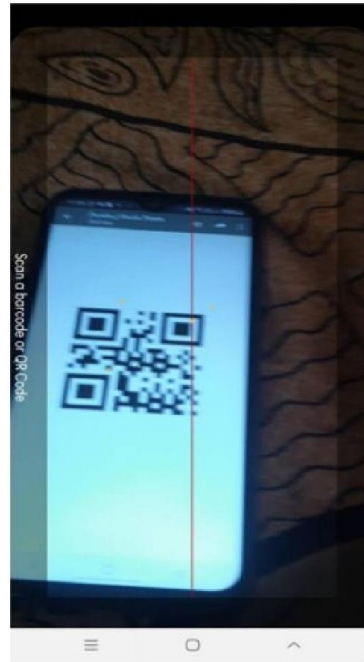
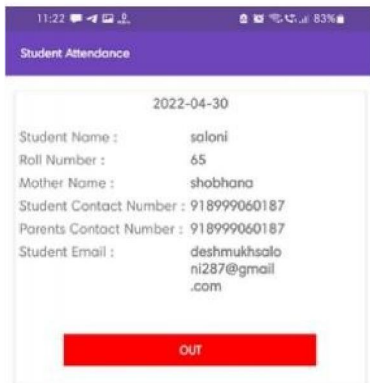
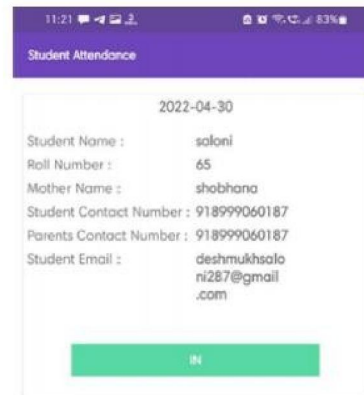


Fig 9. Scanner



Drop-out (option OUT)



Pick-up (option IN)

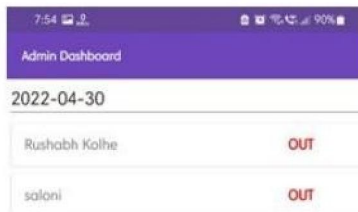


Fig 10. Scanner

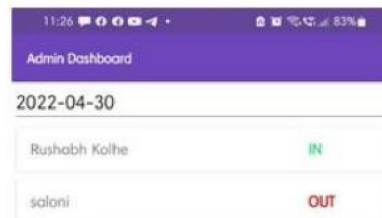


Fig .Pick-up

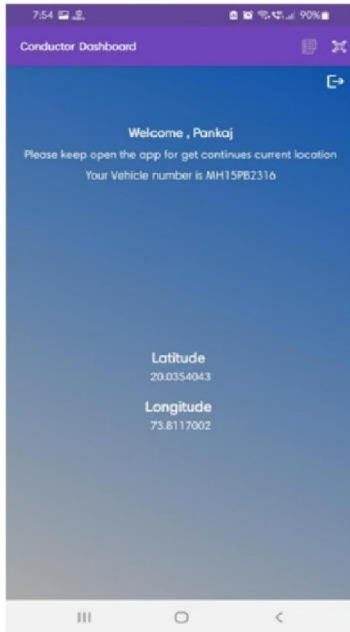


Fig 11 conductor dashboard



Fig 12 Conductor list



Fig 13 Location of conductor



Fig 14 msg notification

VI. CONCLUSION

In this Project study, a secure school bus system has been proposed for the city. This system will ensure safety and ease tension and tension of parents and will without doubt, improve the road conditions. It will also provide an easy pick up system by providing notifications to the parents .

Parents will get notifications through an Android application and also this app can be used to see the current status of the bus through the google map thus, this will be easy for the parents to track the movement and the location of the bus and

get notified at the appropriate time through the msg. Hence, they will have a highly reliable, secure and intelligent system to depend on for the children's

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