STUDENTS TRACKING SYSTEM FOR SCHOOL BUS

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Abstract -*Android is one of the most compatible operating system which is used to develop the android application that generally on the Android based devices. Android OS is developed by Google which is Linux based which is designed for touch screen mobiles like tablets and other touchscreen based devices. All user interactions and real time operations are supported by android operating system that will help user to build the complex applications. Android TV and Auto cars, in wrist watches also android has been programmed. The paper mainly focuses on the Student tracking which has been become important concern for the parent and management to track out the location of the bus in which area it is currently passing, to improve the co-ordination between parents and management is the important aspect. The students are sometimes late to school because they does not know where the bus is actually so they keep on waiting and could not take the alternative transportation and they arrive late to school. In busy day today life everything has to be made simple for easy transportation of the vehicles.*

1.INTRODUCTION

Android is one of the most compatible operating system which is used to develop the android application that generally on the Android based devices. Android OS is developed by Google which is Linux based which is designed for touchscreen mobiles like tablets and other touchscreen based devices. All user interactions and real time operations are supported by android operating system that will help user to build the complex applications. Android TV and Auto cars, in wrist watches also android has been programmed. The parents in day today life when they come to drop their children's to school the will keep keep on waiting for bus exact time of the bus is not known to parents sometimes the bus may live the school early or late in the morning so students became victim. So keeping all the aspects in the view the paper will focus on providing information about the stops. In our application QR Code Scanning and analyzing the attendance is used, here QR code of students with some basic information is created and placed on students ID card. It will be scanned when they board the bus both while going to and coming from school. After scanning students data will be updated in database.

2.SYSTEM ASPECTS AND DESIGN DETAILS

The system is bus tracking system that provides the functionality the QR code. QR code is used to scan the details of the students. The each student has the unique QR code generated by school. That will be in the stored database by this the judgment can be done whether the student has boarded the bus. If a school is there then providing Information to students that is important aspect from school   point of view through push-pop notifications.

The system provides the current location of the bus currently which is the stop the bus is currently at by this it reduces the parents time they will get clear idea of the location of the bus. .

The best features to provide a location the bus driver will be displayed the map the shortest path to reach the student has been developed to provide driver to reach the students.

3. SYSTEM OPERATION

The application starts with sign of registered users with proper user name and password. The parent is shown with notifications whether the student is coming to school or not, response is sent back and that is stored in database. If a student is not coming to school the boarding status will be made zero that will be updated in the database. When the driver logs into the system the map is shown. when he requests for get attendance he will be displayed with the map that shows shortest path of all students who are coming. The QR code of the student is scanned which is unique for each student, then it is updated in the database. The notifications for the student that will indicate that next stop is yours. During dropping the QR code of the student will be scanned.

FLOW DIAGRAM

Fig 2.1 shows overall function of the system. It starts with logging on into the system with their username   and password .It has two users parent and driver .Driver has the functions like Get attendance, Pickup, Drop, Scan and can get shortest path based on parents response for popup notifications. The detailed function of parent and driver is as explained below.
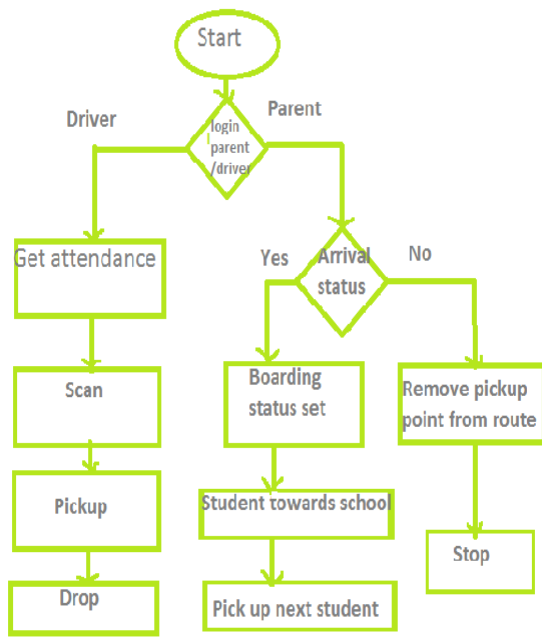
Fig.2.1 Overall function of the application .

PARENT DEVICE

The parent has android device that is generally a android mobile with kit-kat 4.4.2 android OS. The parent device will starts with logging into application. The parent will be asked at the starting that whether the student is arriving to the school or not if he says yes the bus stops will be displayed. The parent should answer the notification everyday otherwise the penalty will be put by observing the negligence of the parent. The penalty will be left for 2-3 times at the starting time. If the parent will be applied penalty if they misses 2-3 times if they fail to answer for the notifications.

DRIVER DEVICE

The driver device is mainly a android built device. The driver process starts with logging into the application. The map of student pick-up
points are shown only when driver logs in, the shortest path to reach the student will be displayed. If the student is not arriving to the school his pick-up point is removed from the map that will make driver to not take that path this save the fuel consumption of the Bus.

MANAGEMENT SYSTEM

The management will have the system that will be shown with the current process of pick-up   and drop will be displayed. This allows driver to not take the different paths. So that students will be not caused with any damage because school should provide the security aspect to students in order to reduce the student related crimes like

gang rapes. The management can track out and monitor the school safely.

4.ADVANTAGES AND DISADVANTAGES

Advantages

- Parents get the pop-up notification 500mts away before the bus arrives to your stop.
- Tracking students on board the bus.
- To reduce the waiting time.
- To provide students with proper bus schedules.
- Providing Updates of the students are received.
- This application helps the students and staff to track their buses and also college authorities to manage efficiently .

Disadvantages

- It is observed that the ability of the reader field decreases quickly with increasing distance, which defines the area of reading to 4-5 kilometer distance.
- In case of any incidents, urgent communication on the server by the driver using a mobile through 2G/3G network, but if network fails system fails.

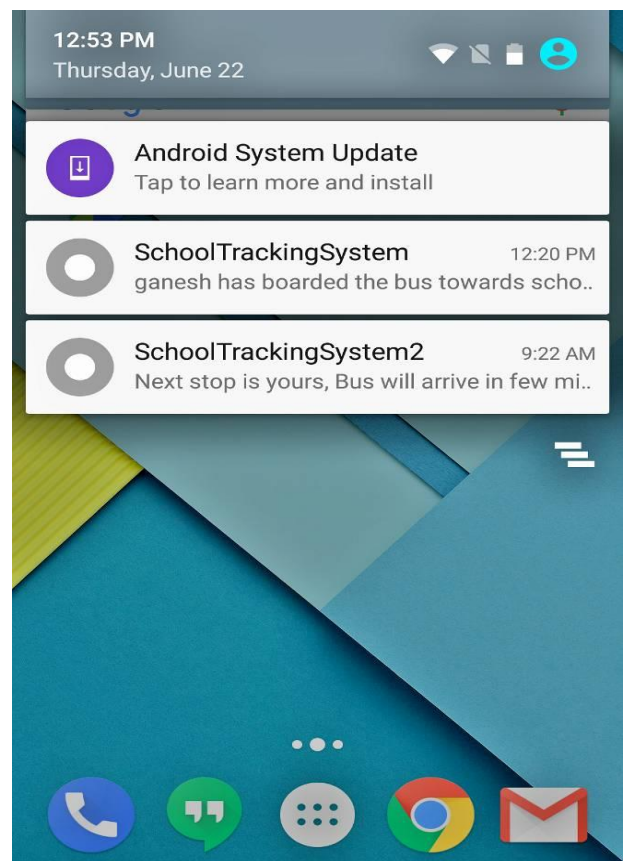## 5. RESULTS AND DISCUSSIONS

Fig 5.1 Shows Popup notifications

The figure shows the notifications that indicate that student has boarded the bus, next stop is yours, and the will arrive in few minutes.

Fig 5.2 shows the QR code scanned details of the student.

The figure gives the description of the QR code scanned details of the student which is unique code generated for each student. The QR code is scanned, it contains the information of student. Figure also indicates navigation drawer along with four options 'Get attendance' used in beginning to get shortest path by getting number of students coming, 'Scan' used after pressing pickup option while boarding into bus ,'Pickup' used while going to school before scan option, 'Drop' used while departing from school before scanning.
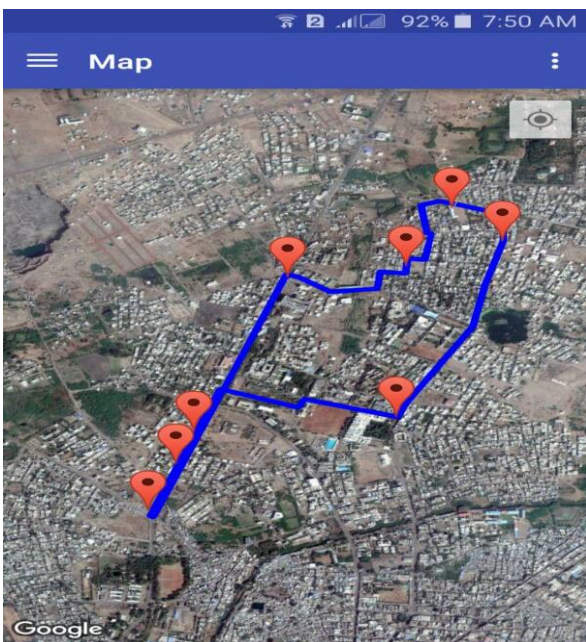

Fig 5.3 shows the shortest path

The above figure shows the shortest path obtained after getting response from parents through popup notifications.

6. CONCLUSION

Now a days people are so busy that they do not have time for their children pickup and drop to school. So the school buses have been introduced but one more problem here is parents do not know that when the bus is arriving to their bus stop and even about the security of their child. So we have developed an application which provides parents about the intimation of bus to their stop and chooses the shortest path based on the respective day's attendance provided by parents. It provides security for students by sending notifications to the parents about their children's boarding into the bus. The QR code is used which is generated and has unique features which is unique to each students which will store the information about the students who enter the bus and QR code is scanned while departing the bus.

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