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# College Bus Tracking System for Mobile Application Using Cordova

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**ABSTRACT:** Bus Tacking System is a software application for to track the bus location . The system is very user-friendly and the functions of the system can be easily accessed by administrators, faculties, students, and drivers. It is easier and faster to use compared to the regular old-fashioned student fees notebook and students can get accurate time of bus arrival. It's main aim is students can track their bus location and administration can see complete report of check in time all the buses.

**KEYWORDS:** GPS ,qr code ,email , here maps.

## I. INTRODUCTION

The college bus tracking system helps users to know the bus location so that the users don't get delayed or don't arrive at the stop too early. In order to overcome increased waiting for time and uncertainty in arrival, we have come with this project.

In this project we are using an four modules for student, staff , admin , driver . So students can track the location of the bus and staff can also find the location of the bus and also staff can change the fees status of the student and they can whether the student paid the fees or not. Using qr scanner staff can the qr code of student and staff can check the whether the student is belonged to this bus or not and also staff can see the information of the student . Admin can allot bus number for all the drivers and also admin can see the check in time of all the buses . Driver can also use map to see stops on their route and the driver can send mail to admin in the case of bus break down simply by clicking button.

If you look at the Bus Tracking System application in the market today it not complete useful for all the college people . It is a complete module it useful for student , administration , driver , staff .The approximate time for bus arrival at the student location will be displayed to the student . In this we are using qr code for student so staff can check whether the student paid the fees or not or he come in a wrong bus or not so it all make the project as ideal.

In this project we are using an Global Positioning System (GPS) it used for track the location of the bus and all the locations will marked in a map and students , staff see the location of the bus in a map and also they can see all the stops of their bus.

## II. MAPS(HERE MAPS)

Here Technologies (trading as Here) is a Netherlands-based company that provides mapping and location data and related services to individuals and companies. It is majority-owned by a consortium of German automotive companies (namely Audi, BMW, and Daimler), whilst other companies also own minority stakes. Its roots date back to U.S.-based Navteq in 1985, which was acquired by Finland-based Nokia in 2007. Here is currently based in The Netherlands.

Here captures location content such as road networks, buildings, parks and traffic patterns. It then sells or licenses that mapping content, along with map related navigation and location services to other businesses such as Alpine, Garmin, BMW, Oracle and Amazon.com. This third-party licensing constitutes the core of the firm's business. In addition, Here provides platform services to smartphones. It provides location services through its own Here applications, and also for GIS and government clients and other providers, such as Bing, Facebook and Yahoo! Maps. Here has maps of nearly 200 countries, offers voice guided navigation in 94 countries, provides live traffic information in 33 countries and has indoor maps available for about 49,000 unique buildings in 45 countries. The company is also working on self-driving technology.



vehicle tag of the vehicle that is trying to pass through the gate. The RFID personal tag reader reads an ID from an RFID personal tag carried by personnel who are driving in the vehicle. The facial detection and verification system scans and read facial images for the driver. The post-verification system is installed on at least one of an entrance and an exit for post—verification to ensure that the vehicle that enters the entrance or leaves from the exit is the one that has been verified/denied at the control gate. In one embodiment, the post—verification system comprises an RFID personal tag reader and an RFID vehicle tag reader. In another embodiment, the post-verification system also comprises a facial detection and recognition system.

### III. ISSUE WITH EXISTING SOLUTIONS

Currently, in many institutions they keep the students bus fees record in physical format, In our proposed system we have implemented it through online application.

This is not a efficient way to keep track of the students due dates as well as it is not a comfortable way for students and staffs to keep track of the bus. We have simplified this with the help of live gps location of their respective bus.

In the existing system students and staffs have to wait for the their institution transport, but in our model we have simplified the process by calculating the approximate time to reach the pick up point as well as the destination.

In existing system students may depart in wrong route bus but we have QR code for students so the staff verify whether the students are belong to the respective stops and also they can check the bus due of the students.

In existing system there are chances for students to get into a bus without paying fees or those who have fee penalty.

In the proposed system staff can verify whether the students have paid the fee or do they have any bending fee and once the fee is paid the status of payment can be altered.

### IV. PROBLEM STATEMENT

Most of the people are afraid to travel from bus because they do not wait for the bus on stop and therefore they prefer their own vehicle. For example students needs to wait for a bus without knowing what time the bus will arrive actually. Sometimes the student might feel anxious and impatient when they waiting for a bus if they do not know what time the bus will arrive especially when student rushing on time for certain reasons.

### V. PROPOSED SYSTEMS

The objectives for creating this system are:

- Students can track their bus location easily.
- Students can see the approximate time of bus arrival at their location.
- Driver can send the information(break down) to the admin through mail.
- Staff can see the status whether they paid the fees or not and they can change the status.
- Administration can see the check in time of all the buses through the report.

VI. SIMULATION RESULTS

Administration can add the appropriate bus number for the driver with their route stop .Administration can monitor the whole process.

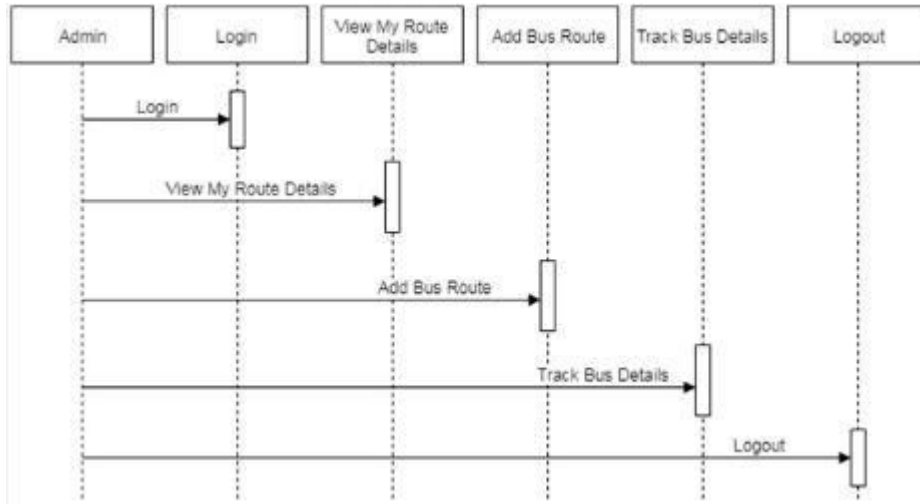


Fig 1.1 Administration

Student can sign up and sign in to see their location .student can view the bus location and also the stops in their route .The student can also see the approximate timing of the bus at their location.

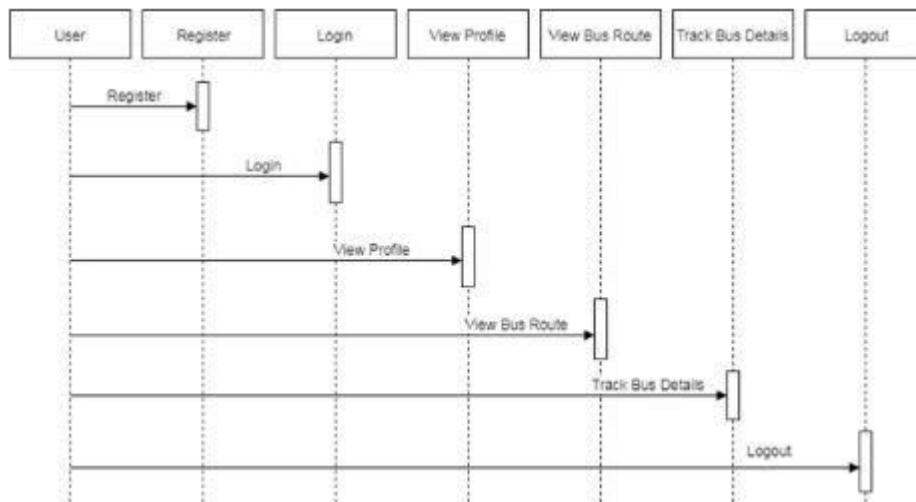


Fig 1.2 Student

Driver can login using mobile number and driver can send the break down information to the administration along with their route name and bus number

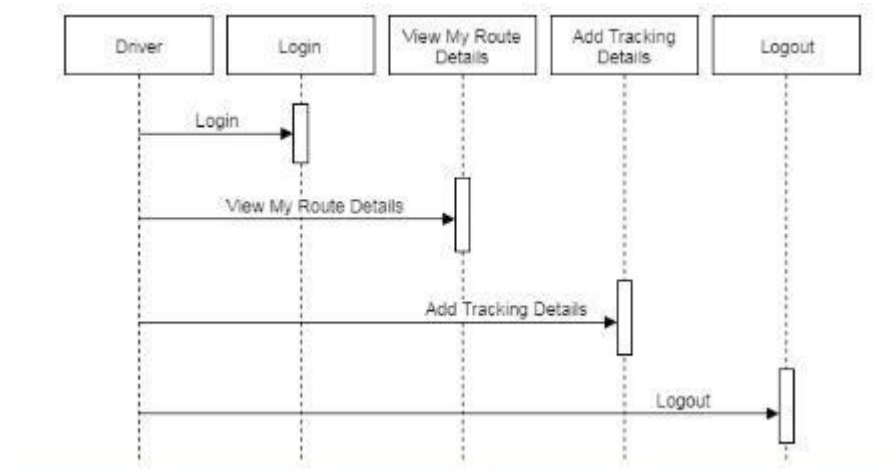


Fig 1.3 Driver

### VII .GOALS

The college can check whether the student paid the fees or not through this application. Bus check in to the college timing will be recorded simultaneously .if the bus check in time is late will send an alert to the administration

If there is any traffic congestion in route or if the bus is breakdown for this situation in the driver can send an information to the college and the students in the particular route.

### VIII. ADVANTAGES

- Real-time monitoring of vehicles with exact location and time.
- Timely alerts on buses approaching pick up or drop off points, delay or early arrival and departure.
- Information of students readily available for staff. Staff can see the bus number and the information of all the student by scanning qr code.

### XI. LITERATURE SURVEY

A vehicle tracking system is very useful for tracking the movement of a vehicle from any location at any time. In this work, real time Google map and GPS based vehicle tracking system is implemented. These are some of the technical literature in engineering and technology where people have tried to implement similar kind of Systems which are mentioned below with their shortcomings with respect to our Application

1. Authors ManiniKumbhar, MeghanaSurvase, PratibhaMAvdhutSalunk have implemented Real Time Web Based Bus Tracking System The proposed system reduces the waiting time of remote users for bus. A system is used to track

the bus at any location at any time. All the current information is stored to the server and it is retrieved to remote users via web based application. This System is a web based system but nowadays people mostly tends to use Android apps since they are more portable and smart phones are used more widely in todays world. Also a web based system is inconvenient for a user to use on a regular basis while waiting for a bus at the bus stop.

2. Authors M. A. Hannan, A. M.Mustapha,A.Hussain and H. Basri have implemented the system Intelligent Bus Monitoring and Management System The proposed system uses Artificial intelligence with the help of RFID module which is used in-order to reduce the manual work carried out in the Bus-Management & Monitoring System. In this a RFID is used to track a bus when it crosses the bus stop. Hence the exact location of the bus



is not shown, only an approximate location is shown based on the bus stops. In today's world, accuracy is very important and hence this was the limitation of this project.

3. Authors S. Aleyman Eken, Ahmet Sayar have implemented the system A smart Bus Tracking System based on location-aware service and QR code. In this paper, Bus tracking system, any passenger with Smartphone can scan QR code placed at bus stop to view estimated bus arrival times, current location of the bus. The drawback in this project was that the user had to be physically present at the bus stop to scan the QR code.
4. Authors R. Maruthi, C. Jayakumari implemented the system SMS based Bus Tracking System using Open Source Technologies. A bus tracker application to track a bus using GPS transceiver has been proposed in this paper. The objective of this work is to develop a system that manages and controls the transport using a tracking device to know the scheduled vehicle and the current location of the vehicle via SMS using a GPS tracking device.
5. Author Yusuf Abdullahi Badamasi have implemented the system RFID bus ticketing system with the help of RFID card which discard the manual or traditional ticketing system (Conductor).
6. Authors Md. Marufi Rahman, Jannatul Robaiat Mou, Kusum Tara, Md. Ismail Sarkar have implemented the system Real Time Google Map and Arduino Based Vehicle Tracking System using GSM and Arduino coordinates sent by Arduino is shown on Google Maps.
7. Authors Manish Chandwani, Bhoomika Batheja, Lokesh Jeswani, Praveen Devnani, Prof. Richard Joseph have implemented the system Real Time Bus Tracking System.

## X. QR CODES

QR (or Quick Response) codes are matrix-style barcodes frequently printed on various media — like billboards and flyers. They are an intermediary communication tool that uses data from a printed medium to retrieve data in a digital medium.

Marketers love QR codes because they're a convenient method to optimize campaigns. Instead of having customers enter a web address manually, QR codes eliminate potential typos by sending users directly to a company's website, signup form, or app.

## XI. FUTURE ENHANCEMENTS

- In near future, we are adding bus route line to see the better view of the location.
- We are planning to add new feature i.e., staff can add the attendance of the student to their appropriate department.
- We are working to give more experience for driver they can send high traffic information.

## XII. CONCLUSION

By using Bus Tracking System administration have the report of buses check in time. It is useful all clients in the institution. Fast and easy maps.

- Computerized records give better management and manipulation of data through searching and report generation.
- Its installation is easy and hence does not require professionals for the same.
- The GPS system is easy to maintain and use.
- HERE MAPS are reliable and easy to use.
- Using HERE MAPS client can see their location with the clear way and higher accuracy.



### XIII. RESULT

The project has been implemented on android platform using cordova. Also different attributes have been added to the project which will prove to be advantageous to the system. Using GPS system application will automatically displays the maps and routes to the different locations and track the bus location using client server technology.

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