

# Real Time Application for College Bus Tracking System

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## Abstract:

This paper proposes a smart application for College Bus Tracking System, which runs on Android smart phones and web. This enables students to find out the location of the bus so that they will not get late or will not arrive at the stop too early. The main purpose of this application is to provide exact location of the student's respective buses in Google Maps besides providing information like bus details, driver details, stops, contact number, routes, etc. and to provide location of student to their parents. This application may be widely used by the college students since Android smart phones have become common and affordable for all. It is a real time system as the current location of the bus is updated every moment in the form of latitude and longitude, which is received by the students through their application on Google maps.

**Keywords:** GPS, Google Maps, Tracking system.

## I. INTRODUCTION

In today's world, the time is more important for students. Being a product of high technology, mobile phones are more widely used and are becoming more and more popular. A vehicle tracking system is a commonly used application for tracking vehicles. Due to traffic congestion most of the buses are delayed. People have to wait for their bus at the bus stops for a long time without even knowing when the bus will arrive. Thus, the arrival time of the bus cannot be guaranteed. The main focus of the project is to save the waiting time of students and provide them the details of bus.

Real time application for College bus tracking system, which can run in android, and in the form of web portal also. This application gives the information regarding college bus so that student can easily track college bus. Most of the times student will cheat their parents by saying that they will go for college but rather than reaching to college they are busy in long drive or parties and so on with their friends. But with this application parents can track their child and so that students will stop their college bunk and attend college regularly.

Real time application for college bus tracking system uses GPS (Global Positioning System) technology to fetch data and displays the data using a software allowing a user to monitor a particular bus on a particular route. When this information is presented to the students by android phone or online web media, they can manage their time efficiently and reach the bus stop just before the bus arrives, or take an alternate means of transport if the bus is delayed. They can even plan their

journeys long before they actually initiate them. The given application for tracking of the bus can be done by our proposed system and this information is then given to a remote user who wants to know the real-time bus information. The system also provides web-based application, which gives the real-time location of a bus on user interface screen to the remote user. This will make the college transport system smooth and user friendly.

## **II. RELATED WORK**

[1]. Real Time Bus Position and Time Monitoring System” IJSTE-International Journal of Science Technology Engineering, Volume 1, Issue 10, April 2015. Many passengers are usually late to work, students are late for classes as a result of they decide to anticipate the bus rather than simply merely using another alternate transportation. A variable message shown on the web which will be real time info regarding the bus showing the time of arrival at a particular bus stop might scale back the anxiety of passengers expecting the bus. With the advent of GPS and also the ubiquitous cellular network, real time vehicle tracking for higher transport management has become attainable. These technologies can be applied to conveyance systems particularly buses, which are not ready to adhere to predefined timetables owing to reasons like traffic jams, breakdowns etc. The increased waiting time and the uncertainty in bus arrival build conveyance system unattractive for passengers.

[2]: M. B. M. Kamel, "Real-time GPS/GPRS based vehicle tracking system," International Journal Of Engineering And Computer Science, Aug. 2015 The Real Time Bus Monitoring and Passenger Information bus tracking device will serve as a viable notification system that will effectively assist pedestrians in making the decision of whether to wait for the bus or walk. In this system a transmitter module installed on the buses, receiver boards installed on the bus stops, LED embedded map of the BEST bus transportation routes at the centralized controller. In addition, the device will be portable and sustainable; it will not require an external power source, which will eliminate long-term energy costs.

[3]: "Real Time Availability System" International Journal of Advanced Research in Computer Engineering Technology (IJARCET) Volume 4 Issue 3, March 2015, This Paper is a survey to implement a method that makes transport much convenient for individuals who commute daily using the public bus transport of the city, for effective time management and making it trouble-free, not just for the commuters but the Transport Department to create an efficient public transport system. There are applications available in the market today which specifies the route and the timings, predict arrival times of different buses But the survey presented here aims to build an application that takes it to the next step by making information about the vacant seats and the current location of any bus in Real-Time, accessible to the daily commuters with a novel and economical wireless system. These methodologies offer incremental improvements in bus system to meet the capacity requirements of different size cities and present a review of strategies which can be employed to satisfy public transport demands of different city sizes.

[4]:Real Time Web Based Bus Tracking System: In this application of tracking system will provides the relevant information regarding all the bus going from user's source to destination. The system is operated by GPS which is attached with every bus. It uses external hardware set-up for its implementation.

[5]:Smart college bus tracking management system and its application is fully android application based, it will display the location of bus to student but it is costly.

[6]:Real Time Bus Monitoring System using GPS displays the real time locations of the bus in mumbai city. In This system a transmitter is installed on the buses, receiver boards are installed on the bus stops. It provides the relevant bus routes and bus number from source to destination. This system transmits the bus routes and bus numbers continuously as soon as bus comes within range of the receiver.

### III. PROPOSED SYSTEM

The proposed system provides the exact location of the bus to the students and staffs from their location.

The bellow figure illustrate data flow diagram from college to checkpoint.

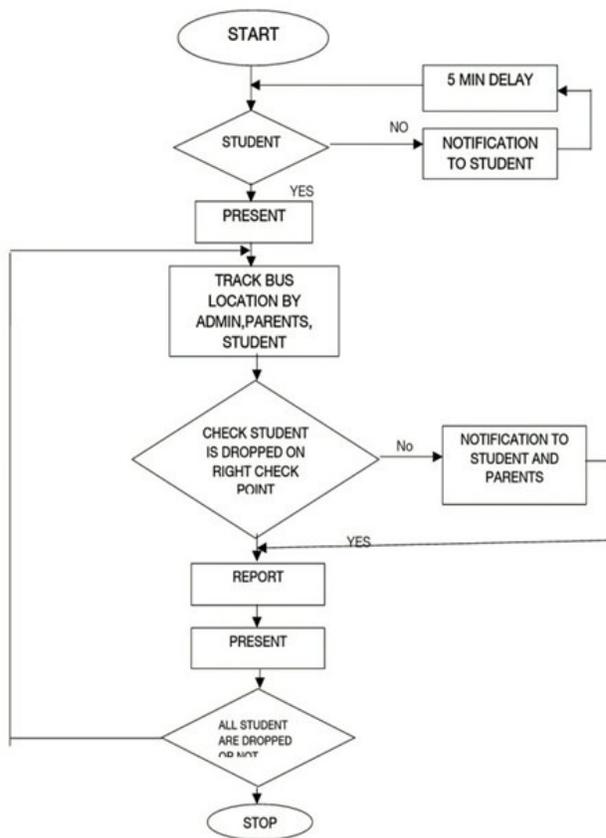


Fig a:-Data flow diagram for college to checkpoint

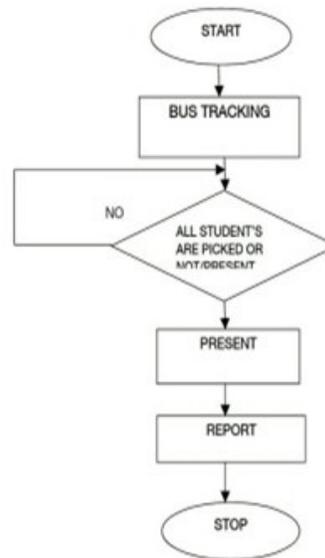


FIG b: - DATA FLOW DIAGRAM CHECKPOINT TO COLLEGE

#### IV. MODULE DISCRPTION

1. Registration & Authentication Module -Registration of Admin, Students, Parents & bus drivers, with Authentication via email, Google plus and Facebook.
2. Tracking Module - Tracking of bus & students  
in this module when student have to know location of bus then he/she can track college bus. and if parent want to track student he can also track\
3. Attendance Module – Attendance of students  
if location of student when student entered into the bus and when he out from the bus is matched then the attendance will considered by the application.
4. Monitoring Module -display location of student and bus to parents & bus driver  
In this module location of the bus will send to students and parents and location of student send to the driver.
5. Report & Statistics Module - reports of students attendance, list of drivers & route reports with date & name sorting. In this module at the end of the month report is generated by the system automatically.
6. Feedback Module - feedback of bus driver by students & parents. In this module if any suggestion for bus driver and administration can be given by students and parents.

#### V. IMPLEMENTATION

##### 5.1Android application:

###### 1) Initial UI

In this screen of cbts app shows a complete tutorial is provided to handle cbts application



###### Welcome to CBTS

The **College Bus Tracking System** is real-time college bus location tracking and student management system.



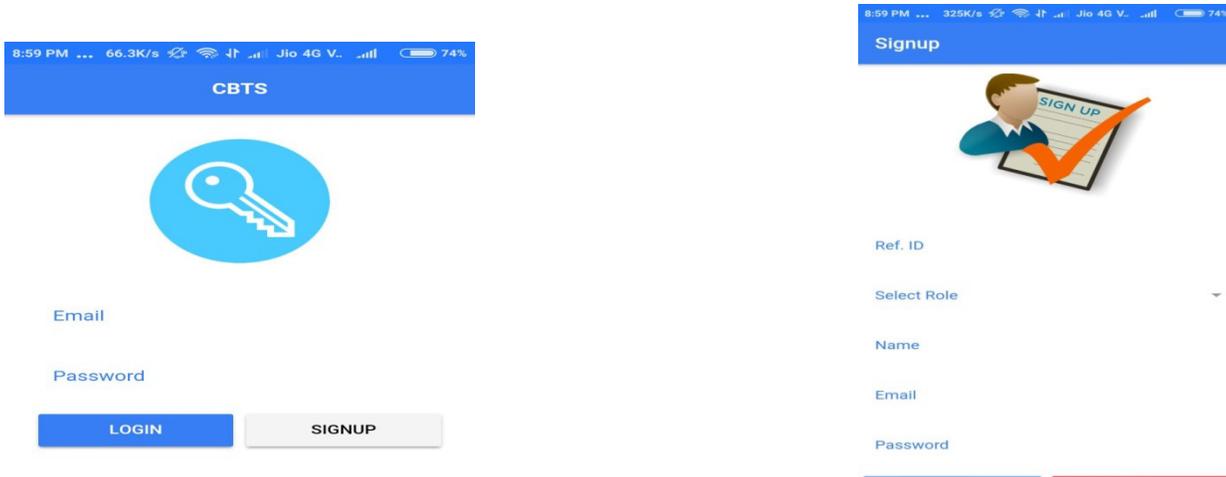
###### Ready to Locate Bus?

CONTINUE →



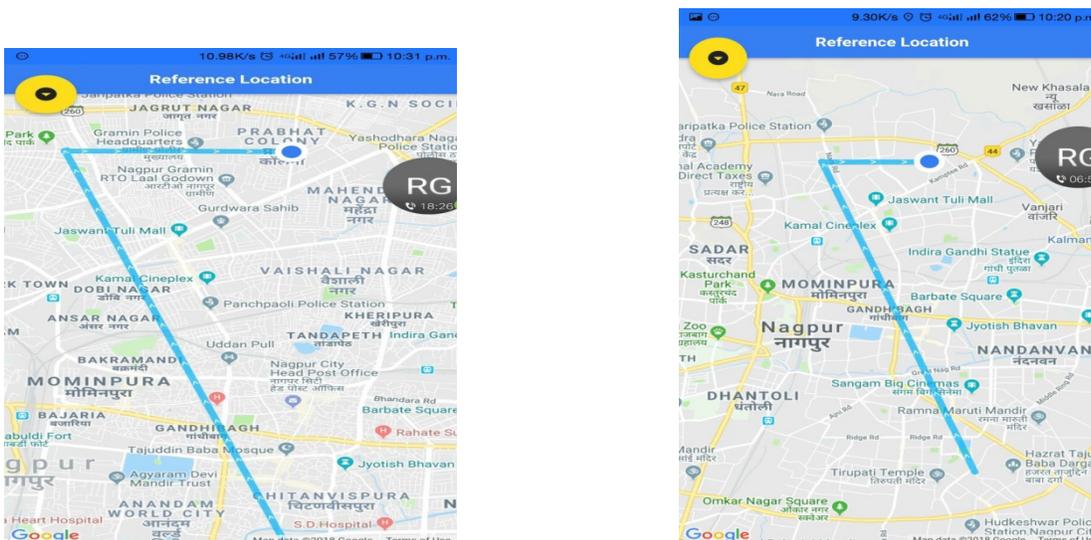
## 2) Login and signup page

The login and signup screen of CBTS APP will look like this. Here, Parents, Students and Driver have to registered for the first time after the installation of the APP. The bellow screen is the sign up page where user has to enter all the necessary details. The fields in the sign up page should not be empty as they are mandatory to be filled.



## 3) Tracking location of bus by the students

The bellow screen shows a location of bus is track by the students and location of student is track by there parents.



## 5.2 Web application:

**1.login page:** The login page of CBTS web portal will look like this. Here, admin there user name and password and will manage bus driver and Students.

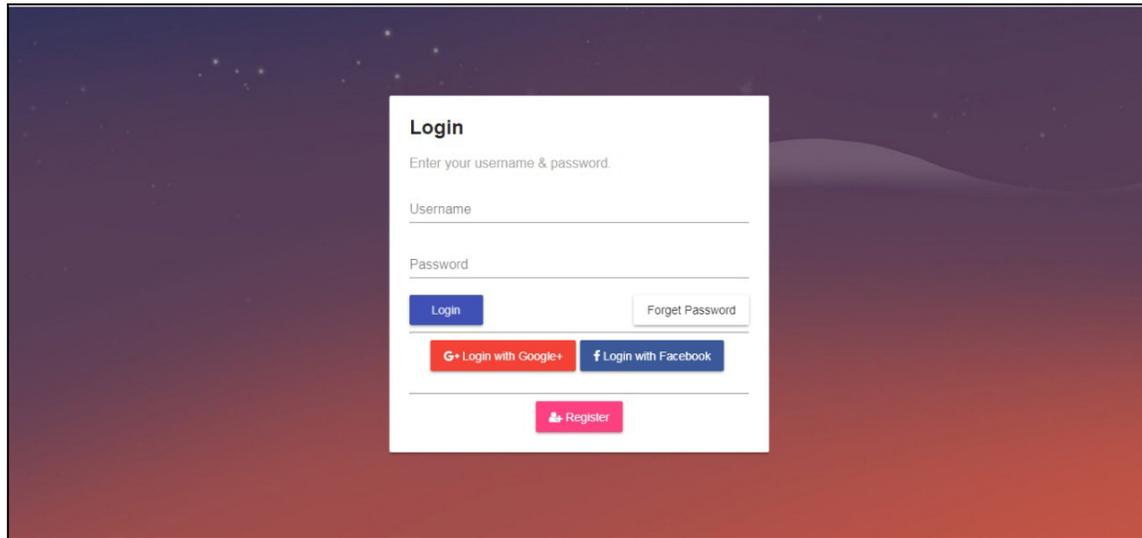


Figure : Login page of Web Portal

**2.Register page:** The register page of CBTS web portal will look like this. Here, we need to add all the necessary information of bus driver and Students.

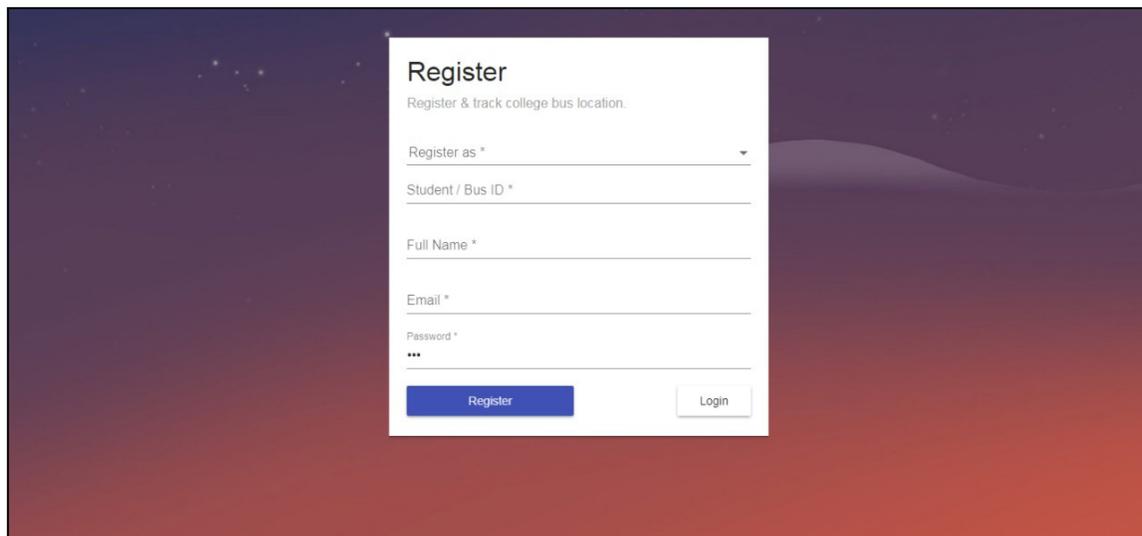


Figure :Web Portal Register page of CBTS

**3. Database of CBTS Web Portal:** The Database of CBTS web portal will look like this. Here, all the registered person information is shown including their name, type of role and there IDs.

#	Name	Role	ID	Action
#	admin	Admin	admin	Delete
#	test1 busdriver	BusDriver	001	Delete
#	Test1 Student	Student	12345	Delete
#	test1 parent	Parent	12345	Delete

Figure :Database of CBTS Web Portal

**4. Background Geo location Console of CBTS Web Portal:** The Database Background Geo location Console of CBTS web portal will look like this. Here, admin can trace the location of bus driver and students

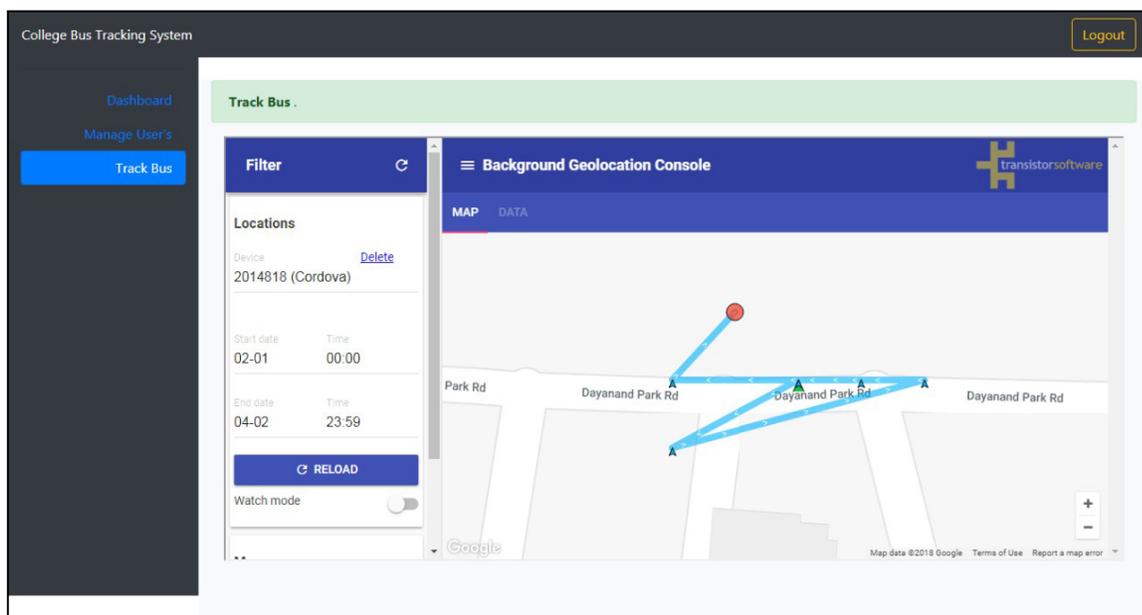


Figure :Background Geolocation Console of CBTS Web Portal

**5. Attendance of CBTS Web Portal:** The Attendance of CBTS web portal will look like this. Here, admin will take three attendance of student, first will take while boarding to bus second will take when he entered into bus and third will take when student reached to college

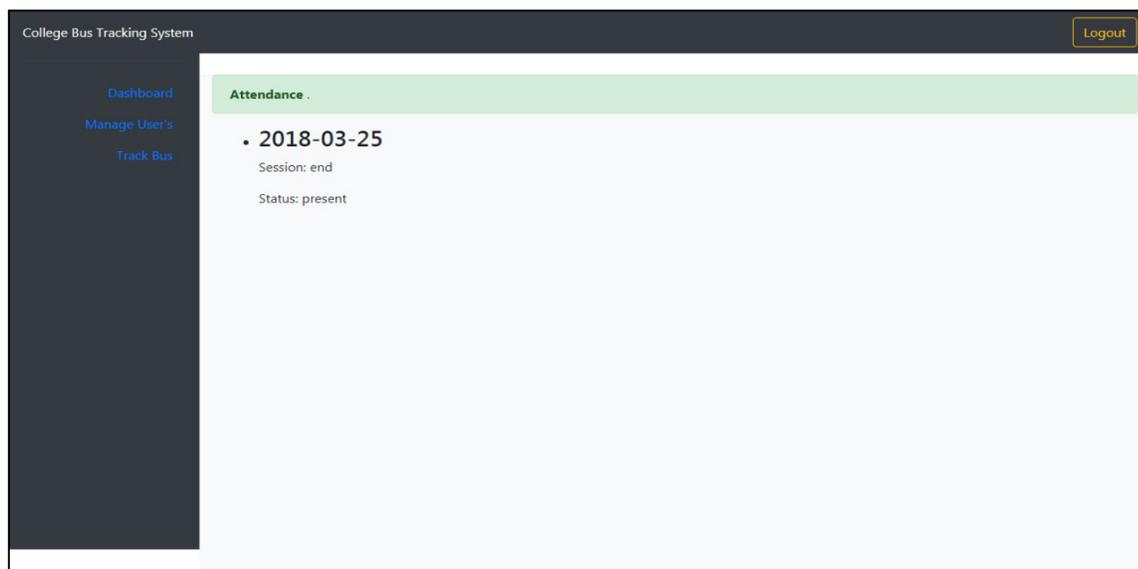


Figure: Attendance of CBTS Web Portal

## VI. RESULT AND CONCLUSION

This project has described the design and architecture of our college bus tracking system. Our system is composed of smart phones and a server. The system is able to demonstrate its performance to track college bus from any area. And for students' parents are very helpful application to access their activity Furthermore, our system is Low-cost. a complete track can be kept of the buses of the college and display at the user's end acts as a time saver. Due to this, we establish an ideal system of bus transport for college purposes. By implementing our system, a student can plan their journey more efficiently before time as the waiting time at the bus stops is reduced. Thus in this system, we have shown that transit information collected in real time can be shown on the server for tracking and monitoring. Internet-enabled mobile phones can receive real-time transit information and will help the students to manage their time more effectively.

## VII. REFERENCES

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