COLLEGE BUS MANAGEMENT SYSTEM

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Abstract -The modern world is guided by the change in the technology day by day. Mostly the relevant changes in technologies are enhancing the modern business techniques. Different technologies have been developed in the world for making people's life easier and better day by day. Android is the latest and a rapid growing technology available for all the users or users in today's market. An enormous increase in the end user acceptance has been experienced in the past few years. The project is based on the latest GPS technology which enables college management team a better way to keep eye on the activity of the college buses and manage schedule as well as provide real time bus location for the students using bus service. The College Bus Management System is Web &Android system aimed at students, college administration to maintain bus facility. The system takes student information as input source and attempts to maintain the bus services. It allows flexibility during these processes. The system generates exhaustive reports related to the Bus Management i.e. Fees paid, dues, rout no. & bus stop.To overcome the problems of manual bus management system, We have developed Web &Android Based college bus management System. College bus management System is based on Android& Web, which can be implemented on any Android Phone.

Keywords:*College bus tracking; GPS Location tracker Android, Web Application*, *Real Time Tracking,*

1.INTRODUCTION

The market sector and the ever-growing and demanding consumers always want to have more, and they want it better than ever. Having a mobile phone for us makes life easier. Communication is always a part of daily life, and we cannot avoid it. The invention of mobile phone has gone tremendous leaps in innovation and new applications. Originally, it was intended to be a telephone that can be carried wirelessly at greater distances. Advances in communications, upgrades in radio frequency and developments on the internet had given mobile phones more sophisticated but easy to use in applications

Nowadays, buses are used rapidly as a transportation system in the different organization, e.g., school, college, university, business firm, banks, etc. In almost every college, they provide their bus transportation facility. Under this, updating & maintaining daily bus records such as Route, bus no. ,bus name, bus timing, driver contact, drive name and bus details. So, they need to keep a record of their vehicle or bus running /driving and the driver of that bus or vehicle. This record contains bus and the bus driver's details and they need to keep bus departure, arrival and delay time. They need to keep track of that record in a notebook or register manually. This process is so time-consuming and it needs extra manpower. There is another problem related to students and staff is that they don't know the real-time location of the bus for which they are waiting for and the time it will take to reach their bus stop. And parents also don't know the location of the bus so, they need to wait.

College Bus Management System Application is a Web and Android application to help campus members detect the current location of the bus in real-time. It is

based on client-server technology along with the use of database. One Android user (College Bus Driver) sends real time location of the bus with additional date and time information to the server. The information provided by that user is stored in the database of the server. And other android users can get the information through the server. The login page is available on the user app for the college administrator. The administrator can keep the record of the bus such as bus no., bus schedule, route info, driver contact, etc. on the database. The administrator also has the permission to manipulate the bus record as per the needs. Student need to login. Student can search for the bus present on the particular stop. Students get updated on the bus location at certain time interval so that they don't have to wait for the bus being unknown whether the bus is coming or has gone. our system handles all the data about current location of bus and by using this data the real time tracking of bus can be done and this information is then given to remote user who want to know the real time bus information. For development purpose some technologies like GPS (Global Positioning System) and Google maps are used. The system includes server-client based application, which gives real time location of bus on Google Maps.In this proposed system through GPS we will get the bus running distance, distance will be getting from the map API. We can track the bus from where it is coming and where is its next stop so student, staff, parents do not need to wait they can track the bus in the mobile application. Security head needs to give the daily report of transportation to the concerned authority, this report is generated through this system it will be sent to the concerned authority. After some distance for maintains of the vehicle this system will notify to maintain department that particular bus needs maintenance. And using the QR Code, we will get the attendance of students and staff on time so that if the bus was late then the staff cannot get late remark and if a student is not in the bus after a certain stop parent will get notified that their child was not in the bus .Information about the bus acquired by integrating the GPS device and biometric device in the bus. This will help to reduce man power and time for this work. There are many systems are available to bus tracking and monitoring student in bus. This system will be easy to access because there is no any manual work needs to do, making system smart which works automatically. This system also monitors student who are traveling through the bus, View students details. We fix QR Code scanner for monitoring. This report will send to the central system. From this all collected information we are generating report for higher authority so they will check transport status. If there is any mistake or error, they will take action. It also improves data security no one will be change data.

2. LITERATURE SURVEY

R.Varalakshmi et.al. [1] This paper proposed A Real-Time College Bus Tracking Application which runs on Android smart phones. This enables students to find out the location of the bus so that they won't get late or won't 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.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.

K.Premkumar et.al. [2] The paper Proposed work is to develop the bus tracking and monitoring method through the android application. Knowing the consequence of the time in the report to travel to and from college wants to make the college journey completely transparent and responsible. The proposed model imagines a complete monitoring scheme that would trace the college bus continuously in current and involves notification to the driver when the users miss the bus. The student login with his/her roll no in the firebase correlated to the android application and this acts on the android operating method. The application can contain three types, administration, users, and drivers. After sign up, the user has to use the identical password with their roll number to login.

Mohammad Nazmul Hasan et.al.[3] This Paper proposeddeveloped android based system provides the students to find out the exact location of the buses from anywhere. The bus routes are shown on the user interface displaying the position of the buses using google map. Accordingly, user can plan and start.The system consists of a client and a server interface. The developed android application is used on both driver and user module. The user can track the location of buses controlled by a driver on Google map from the server using GPS. Admin maintains and updates all relevant information like bus routes, driver number, number of buses, etc. on the server.

Parteek Bhatia et.al.[4] This paper proposed GPS based bus tracking systems is to get real time location coordinates of the bus and the bus arrival time so that

passengers can make better travel decisions and also to make user friendly system to track location and get approximate bus arrival time. Such a system could also be used by parents to track the location of the bus of their children. Main effects of such a bus tracking system are reduced wait time, reduced uncertainty time, ease of use, greater feel of security, increased willingness to pay and customer satisfaction.

3. EXISTING SYSTEM

In the Existing system Colleges have to manually maintain information regarding College busses and routes. Information relating to student details and bus passes have to be maintained separately.Provide a simpler method to store and access information related to buses and students.Provide a simple interface which will be easily used without much training. Reduce paperwork and make all related information accessible easily.

4. DRAWBACKS OF EXISTIND SYSTEM

1. The exact position of the vehicle cannot be retrieved.
2. This application mainly used only by owners and administrator.
3. The bus location cannot be retrieved from anywhere.
4. The movement of the bus is also not visible in the Google map

5.AIMS & OBJECTIVES

1. To make the college transportation system more efficient.
2. To eliminate paper work and increase the level of accuracy.
3. To increase speed of service with the use of technology.
4. Administrator can track the activity of the college bus by sitting at any location using internet.
5. Students can know the current location of the college bus online.
6. Provides the list of the schedule of the bus stops with its time on the user's phone.

6. PROPOSED SYSTEM

We tried to implement a system which overcomes the limitations of the existing approach.The Bus Management System is a desktop system aimed at students, college administration to maintain bus facility.The system takes student information as input source and attempts to maintain the bus services. It allows flexibility during these processes.The system

generates exhaustive reports related to the Bus Management i.e. Fees paid, dues, rout no. & bus stop. The reports highlight various bus services and features of the bus, which can be subjected to improvements especially for the college administration to improve bus transport system.The system requires comparatively small amount of resources such as memory, input/output devices and disk space.We are expecting to find the location of the bus and let the users know the location.so that one can manage their time efficiently and reach their stop just before the bus arrives or take an alternate means of transport if they miss the bus or they are running late.

7. MODULES

This Web & Android Based College bus management Systemcan be implemented in colleges.The system is divided into following modules:

1)   Admin (Web)
2)   Student &Teacher (Android)
3)   Driver (Android)

8. SYSTEM ARCHITECTURE

The system architecture diagram shows that when the user opens the application, they will need to log in or register if they do not have an account. Once they successfully log in, they will see the home page which will display their current location on a map as well as the current location of their assigned bus. The current location of their assigned bus will be obtained by getting the longitude and latitude values of the bus from the database with is updated from the global positioning system and the location of the bus is displayed on the user's map. The driver's details such as their name and number will also be retrieved and displayed to the user, in case they need to contact the driver. Once the location is displayed on the map, the estimated time for the bus to reach the user's location will also be displayed. This will record the time it took the bus previously to reach the user's stop from its current location.
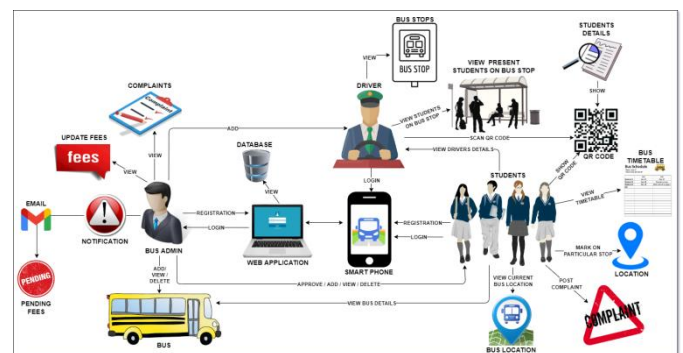

Fig 1. Architecture Diagram of Smart Bus Management System

The user can also set an alarm if they want to be notified when the bus is at a specific stop or a certain amount of time before the bus reaches their stop.

9.ADVANTAGES

- It is easy to use and fast to implement.
- User Friendly GUI
- Reduction of paper work
- The system eliminates the use of paperwork needed for attendance marking and monitoring.
- There is no need for laptop or computer in every class to run the system as the system is run on mobile so no need of extra efforts and resources.
- The same system can be used for many applications with minute changes.

10. APPLICATION

- School
- College
- Companies
- Big Organizations.
- used in bus monitoring and controlling systems
- used as library login system.
- used as student attendance monitoring system.
- used in Electronic transportation system

CONCLUSION

The proposed system is implemented practically in the bus and the working is monitored and observed that it has maximum functional capability. This application will make it easier for users to students to track the real-time location of their buses. This ensures that the user arrives on time to the university and does not get delayed trying to find a bus or wondering if they missed their bus. It is useful to first-year students who might not know the bus might arrive that their stop and lets them know if they have missed their bus in which case they can find other buses that might pass by their stop. This system only gives the latitude and longitude of the place, in future we are trying to implement the system which gives the name of the place.

REFERENCES

[1]Jindan Zhu,1 Kyu-Han Kim,2 Prasant Mohapatra,1 and Paul Congdon2 "An Adaptive Privacy-Preserving Scheme for Location Tracking of a Mobile User" IEEE International Conference on sensing, Communication and networking. Volume 6 Issue 2 Feb 2013

[2]RobiGrgurina, Goran Brestovac and TihanaGalinacGrbac, "Development Environment for Android Application Development: an Experience Report", MIPRO 2011, May 23-27, 2011.

[3]Supriya Sinha, Pooja Sahu, Monika Zade, Roshni Jambhulkar and Prof. Shrikant V. Sonekar. Real Time College Bus Tracking Application for Android Smartphone. In: International Journal Of Engineering And Computer Science, ISSN: 2319-7242, Volume 6 Issue 2 Feb. 2017

[4]G.Kiran Kumar, C.B.Aishwarya, A. Sai Mounika. College Bus Tracking Android Application using GPS. In: International Journal of New Innovations in Engineering and Technology, Volume 4 Issue 4 – April 2016

[5]Komal Satish Agarwal, Kranthi Drive "RFID Based Intelligent Bus Management and Monitoring System". International Journal of Engineering & Technology, ISSN: 2278-0181, Vol.3 Issue 7, July-2014.

[6]M.A. Hannan, A.M.Mustapha, A. Hussain, H.Basri "Intelligent Bus Monitoring and Management System". World Congress on Engineering and Computer Science 2012 Vol II, October 24-26.

[7]Anuradha Vishwakarma, Agarja Jaiswal, Ashwini Neware, Shruthi Ghime, Antara Marathe, Reshmi Deshmukh " GPS and RFID Based Intelligent Bus Tracking and Management System ". International Research journal of Engineering and Technolgy,Vol. 03, Issue: 03, March-2016.

[8]Shital M. Dharro, Vijay d. Choudary, Kantilal P. Rane "International Bus Stand Monitoring and Control Using Combinnation of GSM, GPS&Ir Sensor". International Journal of Innovative Research in Science, Engineering and technology,Vol. 4,Issue 7, july 2015

[9] P. Zhou, Y. Zheng, and M. Li, "How Long to Wait? Predicting Bus Arrival Time with Mobile Phone Based Participatory Sensing," Transactions on Mobile Computing, IEEE, vol. 13, no. 6, June 2014

[10]Abid Khan, Ravi Mishra, "GPS-GSM based tracking system," International Journal of Engineering Trends and Technology, Vol. 3, Issue 2, 2012