ISSN 2395-1621

Implementation of smart ticketing and bus tracking system

#1Abhimanyu Jadhav, #2Akshay Kodre, #3Pankaj Shejul, #4Sachin Awaghad
#5Prof. Mrs. Swati Shirke

1ajadhav.1144@gmail.com

#5Professor, NBN Sinhgad School of Engineering, Pune
#1234Students, NBN Sinhgad School of Engineering, Pune

ABSTRACT

When it comes to taking the public transportation, time and patience are of essence. In other words, many people using public transport buses have experienced time loss because of waiting at the bus stops. We proposed a real-time vehicle tracking system using a global positioning system (GPS) technology module to receive the location of the vehicle. The buses will be tracked live with real time coordinates with this system. There will also be an android application which will give real time schedule of buses. Also it can give quick and real time replay for enquiry, via server. Also in case of bus failure or breakdown, the notification will be sent to system, with Bus location. In Bus Ticketing & Passenger Counting System plays most important role in today's life. User has no time to wait for bus and stand in bus queues. In our system user finds [1] bus location on map and checks passenger count information. This can be achieved using RFID. User can see list of buses on various routes with their arrival times.

ARTICLE INFO

Article History

Received: 31st May 2017

Received in revised form :

31st May 2017

Accepted: 2nd June 2017

Published online :

6th June 2017

I. INTRODUCTION

Public transport has become a part of life. Most people move from home to workplace or school using public transportation. People can loose time in transportation because of unwanted waiting, also people have the right to know where the bus is right now. The public transportation especially buses are ever developing around the world. Such public transports reduce the usage of private vehicles, thus reducing fuel consumption and mollifying traffic congestion [2]. People started avoiding public transports and started using private vehicles because of various factors. Many applications were developed; but these applications were unable to mitigate the problems.

In Bus Ticketing & Passenger Counting System plays most important role in today's life. User has no time to wait for bus and stand in bus queues. In our system user finds bus location on map and checks passenger count information. User can see list of buses on various routes with their arrival times.

This system uses RFID technology for passenger counting and GPS technology for finding current location of Bus [3]. With changing times, the mobile technology has changed a lot and in the last few years we have seen the arrival of various new kinds of gadgets in the form of Smartphones (Android, iOS, etc) and Tablets. Smart ticketing system for bus is an Android based application system.

Main motivation of this system is to provide great assistance for the commuters to plan their journey effectively and thus leading to minimum waiting time for the buses. This system is easy to implement on vehicles, also it will be effective. There are 17,000 location-based travel apps on the market, and 160 million app-compatible devices are owned worldwide [3]. They let you do anything you can do online or with a guidebook, but more quickly and easily and while you're on the move – with maps.

Smart ticketing system for bus, is a leading provider of GPS fleet management services, is an “app” for the Android phone. This GPS tracking Android app offers flexibility and mobility to fleet and operations management enabling them to modify settings, get reports, or monitor vehicle status, all from their smart phone.

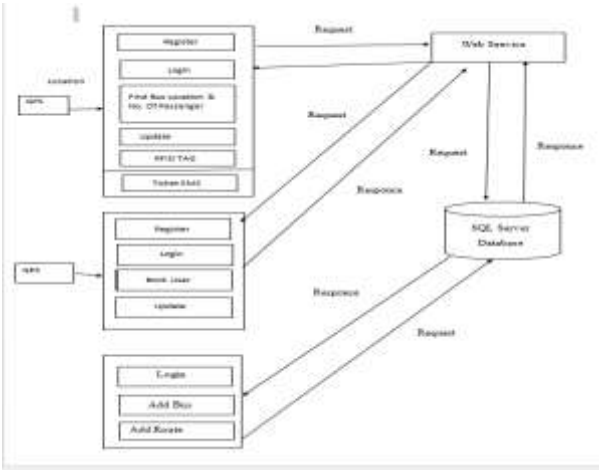
II. OBJECTIVE

The main objective of this application is to track buses and count the passengers using RFID technology. This system uses RFID technology for passenger counting and GPS technology for finding current location of Bus. Bus conductor books users’ ticket by Android app and money gets deducted from users’ bank account. When user enters in Bus then RFID tag is scanned by reader, then passenger count increases and when exits, then passenger count decreases. Bus location is found by using conductor’s mobile location.

III. PRODUCT PERSPECTIVE

In Smart ticketing system for buses we use three android apps such as user app, bus conductor app and web portal app. In user app user, user registers on application with basic information and logs in on application. User searches bus(es) by providing Source and destination then sees bus location on map, with time, stop and no. of passenger. User Location update on server. User has RFID Tag [4] ,when user enters bus then reader scans tag then increases counter of passenger and when exits from bus then tag and counter will decrease.

In bus conductor app conductor registers on application and logs in. For ticket, conductor enters source and destination then gets fare between location and money gets deducted from bank account and sends message on user register mobile number. User Location update on server. In web portal app, admin logs in by user name, password and adds bus's Route and bus info. A web service is a standard used for exchanging information between applications or systems of heterogeneous type [4]. Software applications written in various programming languages and running on various platforms can use web services to exchange information over Internet using http protocol.



IV. IMPLEMENTATION

Following screenshots shows the implementation and user interfaces of android application.

Fig.1 shows the registration window. Fig.2 shows login page. Fig.3 shows the interface where we can choose options like search bus, find fare live track. Fig.4 shows the details of bus like time to stop, bus number, next stop, time to next stop, time to reach destination.

Fig.1

Fig.2

Fig.3

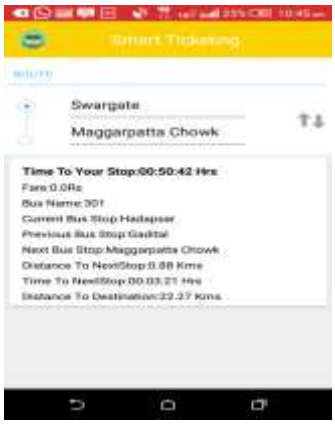


Fig.4

V. CONCLUSION

This smart ticketing system is used for Bus Tracking and to see the count of how many passenger are in the bus [1]. In this system user searches bus, by providing Source and Destination and sees list of buses on Route with arrival times. This system shows bus location on map, with time, stop and no. of passengers. Conductor enters source and destination then gets fare between location and money gets deducted from bank account and a message is sent on user registered mobile number.

VI. FUTURE SCOPE

There has been a lot of research carried out in bus tracking system using RFID and GPS technology. Also lot of countries have employed display system for expected time of arrival and would also show if there is any delay in the arrival. With mobile technology it would be useful to commuters to know the expected time of arrival and if there is any delay so that they can plan their travel accordingly [5]. But there can be dissent in people about sharing their location data with the system. This can be dealt with taking their location data anonymously. Also we can reduce the loose change crunch by putting a card system for payment. We can also eliminate the need for conductor by using just a device for card payment i.e. commuters can just use a special card to swipe on the device which will debit the ticket money directly from the commuter's bank account. This can be our contribution to this research.

REFERENCES

[1] R. K. R. S. Shiv.H.Sutar, "Integration of smart phone and IOT for development of smart public transportation system," 2016 International conference of Internet of Things and applications(IOTA), pp. 73-78, 2016.

[2] A. P. N. C. P. D. Ajay Shingare, "GPS supported city bus tracking and smart ticketing system," International conference on green computing and internet of things, pp. 93-98, 2015.

[3] P. H. Suresh Shankar Narayan, "Mobile unable bus tracking and ticketing system," Seconfd international conference on information and communication technology, pp. 475-480, 2014.

[4] N. Z. N. Manali, "Smart public transport system using mobile phone based sensing," IEEE Indicon 2015 1507187213, pp. 1-5, 2015.

[5] M. K. R. M. M. P. M. M. P. Mr. A. Kamraj, "Intelligent transport sytem using integrated GPS optimised reader," 2016 Second international conference on science technology engineering and management, pp. 323-336, 2016.

