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REAL TIME TRACKING SYSTEM AND GENERATE QR CODE BASED TICKET FOR PUBLIC TRANSPORT

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Abstract *- In this fast life, everyone is in hurry to reach the destinations. In this case waiting for the buses is inconvenient. People who are rely on the public transport their major concern is to know the real time locations of the bus for which they were waiting for and the time to reach their bus stop. This information helps people to making better travelling decisions. This paper gives the major challenges in the public transport systems. Current position of the bus is attained by integrating GPS device on the bus and coordinate points of the bus are sent by either GPRS service provided by GSM networks or SMS or RFID. GPS device is assisted on the tracking device and this information is sent to centralized control unit or directly at the bus stops using RF receivers. This is done to improve the exactness by including the factors like volume of traffic, crossings in each segment, day and time of day. People can track information using LEDs at the bus stops, SMS, web application. GPS coordinate points of the bus were sent to the centralized server and prediction algorithms are applied based on historical speed patterns for arrival time*

KEY WORDS : GPS, ESP, ARDUINO UNO, QR CODE.

1. INTRODUCTION

Effective transportation system has effective movement of goods and people which lead to better quality of life and better social and economic growth of the society. Transportation system forms the heart of the system. With the population boom vehicle population is additionally rapidly increasing which is further resulting in heavy traffic. Optimal solution to the present problem is that the use of conveyance. However conveyance schedules are unreliable and expecting bus for long results is waste of your time. But a system that gives complete information namely the amount of buses that attend the specified stop, bus numbers, bus timings, time taken for the bus to succeed in, the routes through which the bus goes, maps that guides the passengers and most importantly tracking the real time bus location coordinates and finding correct time the bus will take to reach its bus stop.

1.1 NEED FOR THE BUS TRACKING SYSTEM

Main objective of 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 form user friendly system to trace location and obtain approximate bus time of arrival . Such a system could even be employed by parents to trace the situation of the bus of their children. Main effects of such a bus tracking system are reduced wait time, reduced uncertainty time, simple use, greater feel of security, increased willingness to pay and customer satisfaction.

1.2 LITERATURE SURVEY

Real time bus tracking systems are standalone systems that displays the time of arrival of the buses on LCD screens on every stop. The system comprises of the facility source, battery, LEDs, RF transceiver, microprocessor. RF transceiver is installed over every bus that polls a sign that contains its GPS coordinates. The data will then be processed by the microprocessor. RF transceivers are installed at every stop to receive information regarding bus coordinates. These are going to be passive circuits and can get active only transmitter enters the range of reception. Bus location is displayed on the LCD screen alongside the bus number.

1.3 EXISTING SYSTEM AND DRAWBACKS

Real time bus tracking systems are a gaggle of modules that display the bus timings on the LCD screen of the stop. The system comprises of the facility source, battery, LEDs, RF transceiver microprocessor. RF transceiver is installed over every bus that polls a sign that contains its GPS coordinates. The data will then be processed by the microprocessor. RF transceivers are installed at every stop to receive information regarding bus coordinates. These are going

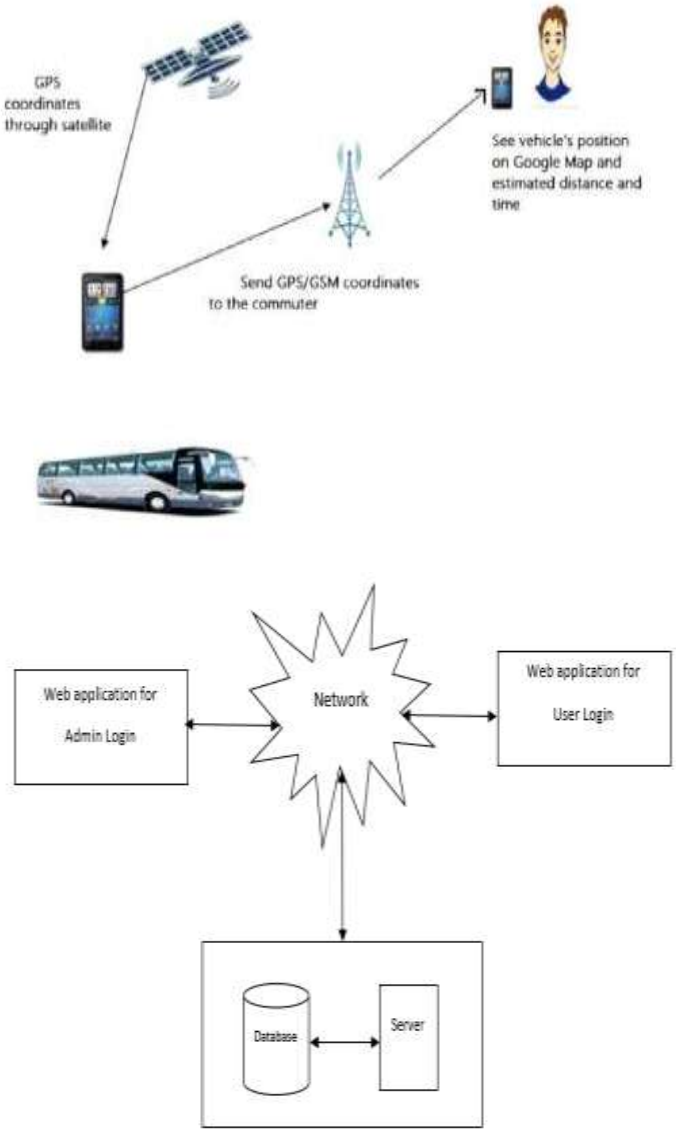
to be passive circuits and can get active only transmitter enters the range of reception. Bus location is displayed on the LCD screen alongside the bus number .Also the prevailing System isn't giving the density in bus in order that people cannot wait for Bus rather than that folks take alternative transport system.

2. PROPOSED SYSTEM

Generally our system uses GPS module which is attached to the arduino system within the bus. Firstly, the satellite signals are received by it then the position coordinates like latitude and longitude are determined by it. Proposed system uses GSM module to speak & update data on the server. By using GPS, the geographic location of a vehicle are often determined and therefore the related information are often transmitted to a remotely located Server. SMS (Short message service) is employed over the GSM networks to transfer the bus location coordinates. The GPS receiver at the buses computes the longitude and latitude of the vehicle coordinates. This information is shipped to the central server over the GSM networks using SMS and this information is stored within the database. Users can retrieve the knowledge by sending the route number and therefore the bus number. SMS is shipped to user that contains the time of arrival of the bus.

2.1 SYSTEM ARCHITECTURE

Application starts with instantiating Location Manager. This is often needed to trace user location. Detailed description regarding Location Manager is provided to look for a bus, client has got to enter the Source and therefore the Destination within the search bar of the appliance this section. Then the map is displays the present location of the bus. If the client selects "Live" then the situation details of the bus from that route is fetched. If the client clicks on "Show Route" then path on the map are going to be displayed.



3. FEATURES OF THE SYSYTEM

3.1 Location Information:

The Location information is fetched from the web database which receives the info regarding the situation from the arduino module within the bus. This helps in maintaining the individuality of the bus while displaying its location within the map.

3.2 Bus/Route Information:

The Routes of all Buses are recorded by Bus In-charge. For this reason we've used php-server side scripting. Therefore the management can login the web site and update/modify the bus details and details regarding its routes. Now, the request made by the client for the bus information are going to be fetched from the database and delivered to client through server.

3.3 Bus Route Module:

The appliance is developed using android API which features a very simple interface to use it. Google maps API is that the core component utilized in it, which is extremely easy to use and explore maps with simple gestures like pinch to zoom tap to point etc.

3.4 Registration Module:

New user can create an account with their credentials such as Name, Email address, Passwords for login.

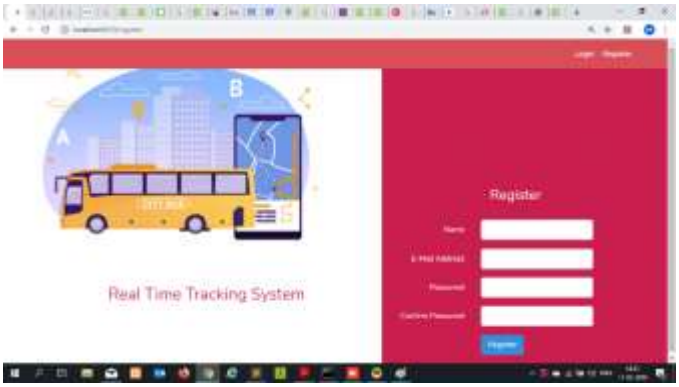


Fig.1: User Registration

3.5 Login Module:

User login is a set of credentials used to authenticate a user. Most often, these consist of a username and password. By using this login user can view their traveling route, Bus live status.

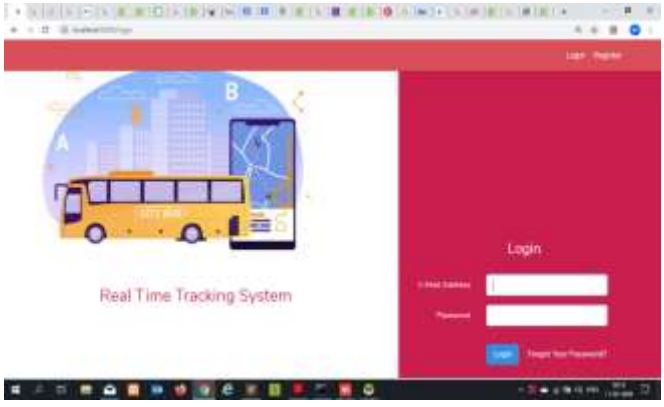


Fig.2: User Login

4. WORKING OF THE SYSTEM

In this system we use three techniques the GPS, GSM and RFID .Using the GPS technology real time bus tracking system is produce the will have latest technology and optimized algorithm with moderate cost. The system may specialize in accurate time of arrival prediction and real time position of auto.

The system are higher results. During this proposed system we use the GPS, The installed tracker is sending the coordinates to server to accessing this location on using these coordinates. The proposed system is usually utilized in the transport systems to supply the services to finish users.

4.1 Booking:

In this system we using booking module for users convenient. Users can book their seats in the selected bus and travel on their time.

4.2 QR Code:

After completed booking seats and payments, passenger ticket will be generate as QR Code. Users can save QR code and if necessary for checking passenger can show QR Code to the checking officer.

5. RESULT

The main goal of the proposed work is to enhance the Bus Tracking system by adding the required features to our project, like projecting accurate bus timings, presenting correct bus numbers and by adding a GPS tracker into it for accurate locations.

This idea accepts input within the sort of text/Bus No, destination and selection of the bus travelling to the situation to display the whole details about the routes/Stops and also track the situation of the bus and display it on the map for an equivalent. This system save the time and increase the work efficiency of end users because it reduces the user's efforts to travelling for work and avoid the wastage of waiting time for bus. It also consider the points that's Robust, Reliable and efficient for traveling in city. This proposed system removes the wastage of some time for reaching destination on works. During this proposed system we use GPS for location tracking it's less accurate with minimum satellite but using multiple satellite the GPS is more accurate about location.

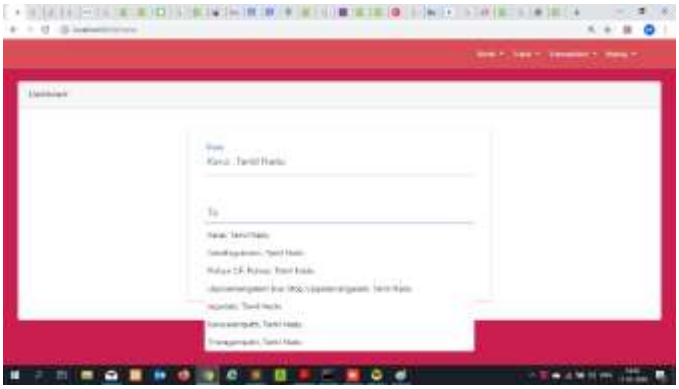


Fig.3: Dash board

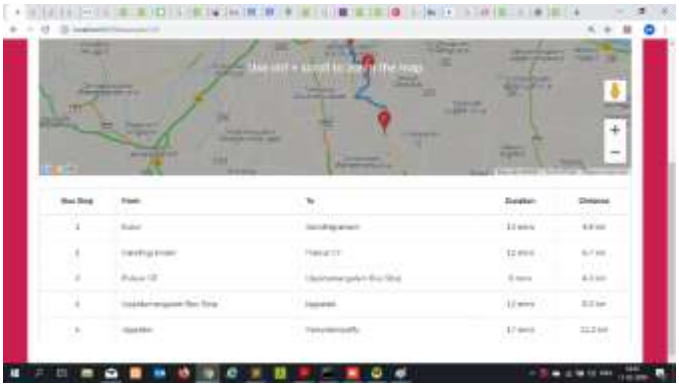


Fig.4: Bus Route Information

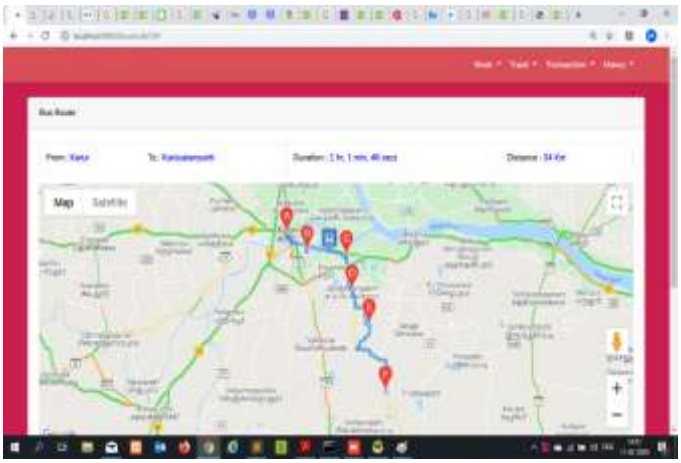


Fig.5: Bus live tracking

This system save the time and increase the work efficiency of end users because it reduces the user's efforts to travelling for work and avoid the wastage of waiting time for bus.

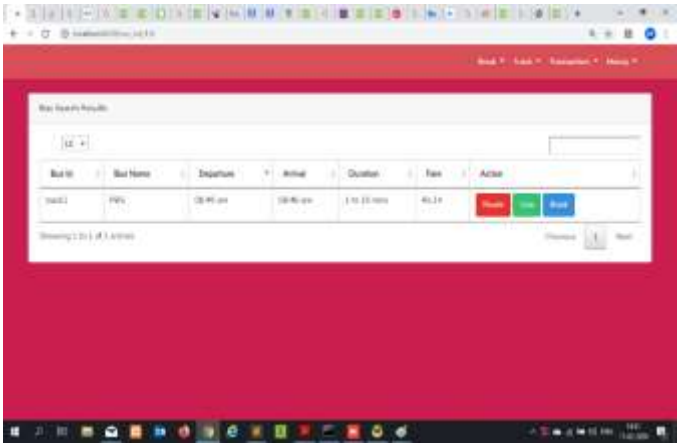


Fig.6: Bus Search Results

6. FUTURE SCOPE

For future enhancement, we will develop a vehicle monitoring system using GPS & GSM module with high speed processor. The system will have latest technology and optimized algorithm with moderate cost. The system may specialize in accurate time of arrival prediction and real time position of auto. The system are often installed in buses, cars and trucks this project has a good scope. an internet based application which may be further modified using cloud. Use of video camera to the present system would take this technique to subsequent level within the field of security.

It'll help to watch the crimes that happen nowadays which is witnessed by folk a day this is able to prove a serious breakthrough in reducing the crime rates. Also, with use of motion sensors the speed of the bus are often calculated presently only SMS feature is out there, we will include the decision feature for simple operation. Microphone are often induced within the GSM module in order that during theft activity, voice are often recorded within the bus for evidence purpose.

7. CONCLUSION

The conclusion of this study suggests that knowledge of specific domain improves the results. Also, different attributes are added to the project which can convince be advantageous to the system. The requirements and specifications have been listed above. This project is implemented using Android and therefore the SQL domain. Using the GPS system, the appliance will automatically display the buses on map and its routes to the various locations and also track

the bus location using client-server technology and forward it to the client device.

It uses latitude & longitude as measurement to calculate distance between two locations and provides necessary details of each and every route for people to easily catch-up with the buses or the other conveyance possible on the required route. Specific location details are provided to the user alongside the bus location in order that the person can identify the bus correctly. It uses remote server as its database. Due to this, the records can be easily presented on the client's device itself so that the server burden get reduced.

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