Bus Transport Management System

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Abstract – The main goal of the proposed work is Improve the bus system by adding necessary additional features into the application like accurate bus timings, correct bus imformation and more over adding a gps tracker into it. This study accepts input in the form of selection of the source and the destination and selection of bus travelling the distance to display entire details of the route and also track the location of the respective bus

Index Terms : Android Application, Enhancing, Interfacing, Bus tracking, IOT.

1. INTRODUCTION

There are buses made available for passengers travelling distances, but not many passengers have complete information about these buses. Complete information namely the number of buses that go to the required destination, bus numbers, bus timings. the routes through which the bus would pass, time taken for the bus to reach, maps that would guide the passengers with there route and most importantly, track the current location of the bus and give the correct time for the bus to reach its bus stop. The proposed system deals with overcoming the problems stated above. The system is an Android application that gives necessary information about all the buses travelling. This information overcomes all the problems faced in the previously built application. The platform chosen for this kind of system is android and the reason is being Android Operating System it has come up on a very large scale and it is owned by almost every second person. Also. Android is a user friendly platform, thereby it enabling ease of access for all the users. A number of applications made for the Android Operating System is increasing on a large scale ever since its advent. Android is an open source for mobile software environment.

2. EXISTING SYSTEM

Real time bus tracking systems are a group of modules that display the bus timings on the LCD screen of the bus Stop. The system comprises of the power source, battery, LEDs, RF transceiver microprocessor. RF transceiver is installed over every bus that polls a signal that contains its GPS coordinates. The data will then be processed by the microprocessor. RF transceivers are installed at every bus stop to receive information regarding bus coordinates. These will be passive circuits and will get active only when transmitter enters the range of reception. Bus location will displayed on the LCD screen along with the bus number .Also the Existing System is not giving the density in bus so that people cannot wait for Bus instead of that people take alternative transport system

3. PORPOSED MODELLING

Generally our system uses the GPS module which is attached to the arduino system in the bus. Firstly, the satellite signals are received by it and then the position coordinates like latitude and longitude are determined by it. Proposed system uses GSM module to communicate & update data on the server. By using GPS, the geographic location of a vehicle can be determined and the related information can be transmitted to a remotely located Server.

The Location here is determined with the help of GPS and transmission mechanism. This location data after being received from nearby satellite and cellular towers, the tracked data can be fetched by the android application on the consumer's device. Here the commuters can not only fetch the bus location but also know estimate time taken by bus to reach its destination. Here our Android application also provides the estimated count of people in the bus. So, with the help of available information the commuters can decide whether to wait for the bus or to proceed with an alternate route.

3.1 METHODOLOGY

a. Location Information

The Location information is fetched from the online database which recieves the data regarding the location from the arduino

module in the bus. This helps in maintaining the uniqueness of the bus while displaying its location in the map.

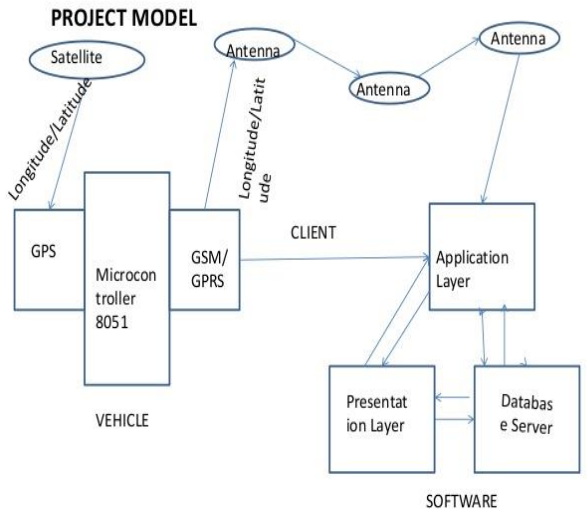
b. Maps

The application is developed using android API which has the very simple User Interface to use it. Google maps API is the core component used in it, which is very easy to use and explore maps with simple gestures such as pinch to zoom tap to point etc.

c. Bus/Route Information

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

4. SYSTEM ARCHITECTURE



5. RESULTS AND DISCUSSIONS

The main goal of the proposed work is to improve the Bus Tracking system by adding the necessary 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 concept accepts input in the form of text/Bus No, destination and selection of the bus travelling to the Location to display entire details about the routes/Stops and also track the location of the bus and display it on the map for the same. The last two decades have seen growing interest in the development of Android based platform. Our analysis on this Project shows that there have been very few vendors that provide automated tools for functioning of the Application. Also we can estimate count of people with the help of proximity sensor at the entrance point and exit point. Normally, proximity sensors are used in devices like in phone,etc. Here, it is used to Increment count of the people entering the bus and decrement the count of people exiting the bus. We are setting the timer on the proximity sensor using arduino software. So that we can get the approximate count of people. Let other passengers know the count of people in the bus and can decide whether to wait for bus or take alternate transport route.

5.1 FUTURE SCOPE

For future enhancement, we can develop a vehicle monitoring system using GPS & GSM module with high speed processor. The system will have the latest technology and optimized algorithm with moderate cost. The system may focus on the accurate arrival time prediction and real time position of vehicle. The system can be installed in buses, cars and trucks this project is having a wide scope. A web based application which can be further modified using cloud. Use of video camera to this system would take this system to the next level in the field of security. It will help to monitor the crimes that happen nowadays which is witnessed by common people every day. This would prove a major breakthrough in reducing crime rates. Also, with use of motion sensors the speed of the bus can be calculated presently only SMS feature is available and we can include the Call feature for ease of operation. Microphone can be induced in the GSM module so that during theft activity, voice can be recorded in the bus for evidence purpose.

6. CONCLUSION

The conclusion of this study suggests that knowledge of specific domain improves the results. Also, different attributes have been added to the project which will prove to be advantageous to the system. Requirements and the specifications have been listed above. This project is implemented by using Android and the SQL domain. Using GPS system, the application will automatically display the buses on map and its routes to the different locations and also track the bus location using client-server technology and forward it to 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 any other conveyance possible on the specified route. Specific location details are provided to the user along with the bus location so that the person can identify the bus correctly. It uses the 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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