Design of Bus Tracking and Fuel Monitoring System

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Abstract – **The need for efficient public transportation system such as buses has rapidly increased due to the increase in population, the passengers need to know the accurate arrival time of the particular bus to particular station and then plan their journey fro home. Fuel monitoring have been the major problem that most of the bus companies looking to solve. This paper developed a bus tracking and monitoring the fuel and monitoring the fuel and speed monitoring system to provide a facility for the management requirements by the administrator. The proposed system based on Arduino, GSM/GPS and map suit ASP. MVC which provide the actual arrival time in addition to graphically showing the bus location on google map. The design also enables the owner of the buses to monitor the bus instantaneously because the system administrator can easily maintained database information of buses and its fuel tank at any time of the service.**

I. INTRODUCTION

Public transport, especially the bus transport, has been well developed in many parts of the world. Good public transport services reduce the private vehicle usage and hence fuel consumption, and alleviate traffic congestion. As one of the most comprehensive and affordable means of public transport in 2011, the bus system serves over 3.3 million bus rides every day on average in Singapore with around 5 million residents . When talking about the bus transport, the passengers would like to know the accurate arrival time of the bus. Excessively long waiting time at bus stops may drive away the anxious travellers and make them reluctant to take buses. Nowadays, most bus operating companies have been providing their timetables on the web freely available for the travellers. The bus timetables, however, only provide very limited information (e.g., operating hours, time intervals, etc.), which are typically not timely updated. Other than those official timetables, many public services (e.g., Google Maps) are provided for travellers. Although such services offer useful information, they are far from satisfaction to the bus travellers. For example, the schedule of a bus may be delayed due to many unpredictable factors (e.g., traffic conditions, harsh weather situation, etc.). The accurate arrival time of next bus will allow travellers to take alternative transport choices instead, and thus mitigate their anxiety and improve their experience. Towards this aim, many commercial bus information providers offer the real time bus arrival time to the public
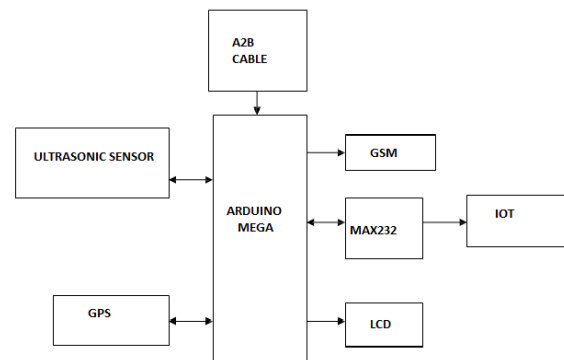
II. BLOCK DIAGRAM

Fig 1. Block diagram of proposed system

III. WORKING PRINICPLE

The bus tracking system is a cost effective and efficient system, at the bus station people have to wait for long time without even knowing when the bus will arrive, the passengers, can't find the time of arrival of particular bus at the particular destination even at their homes and plan their journey accordingly. The proposed system present the bus arrival time prediction and fuel monitoring system that provide the accurate arrival time and bus view to the passengers ,and provide bus monitoring, schedule management and fuel monitoring to the bus company owner . Fuel level detection circuit calculates the fuel level from the fuel gauge which is present in all the vehicles the current position of the vehicle was acquired

by Global Position System (GPS) receiver. The Arduino collect the data from fuel sensor, GPS and speed sensor send it to the server at the base station using GSM.An important feature of the Arduino is that you can create a control program on the host PC, download it to the Arduino and it will run automatically. Remove the USB cable connection to the PC, and the program will still run from the top each time you push the reset button. Remove the battery and put the Arduino board in a closet for six months. When you reconnect the battery, the last program you stored will run. This means that you connect the board to the host PC to develop and debug your program, but once that is done, you no longer need the PC to run the program.

IV. COMMUNICATION

Microcontrollers depend on a host computer for developing and compiling programs. The software used on the host computer is known as an integrated development environment, or IDE. For the Arduino, the development environment is based on the open source Processing platform (www.processing.org) which is described by its creators as a "programming language and environment for people who want to program images, animation, and interactions." The Arduino programming language leverages an open source project known as Wiring (wiring.org.co). The Arduino language is based on good old- fashioned C.
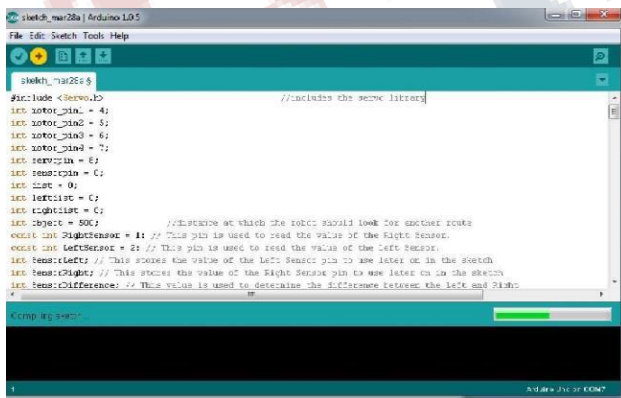

Fig. 2 Simulation using Arduino Programming

V. PROGRAMMING THE ARDUINO

Arduino is a tool for making computers that can sense and control more of the physical world than your desktop computer. It's an open-source physical computing platform based on a simple microcontroller board, and a

development environment for writing software for the board. Arduino can be used to develop interactive objects, taking inputs from a variety of switches or sensors, and controlling a variety of lights, motors, and other physical outputs. Arduino projects can be stand-alone, or they can be communicate with software running on your computer. The boards can be assembled by hand or purchased preassembled; the open-source IDE can be downloaded for free.

VI. CONCLUSION

This project concludes about the bus tracking and fuel monitoring this will help the peoples those who are waiting for the bus and we can monitor the fuel also.Thus a lot of time and frustration is saved for every boarding individual who can effectively plan their journey well in advance.

VII. REFERENCES

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