Outline of Innovative Transportation Management System for BRT Junction

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Abstract

Today we are facing the problem of fuel crisis because conventional buses which runs on fuel, results in release of the harmful gases like co2 which leads to increase in environmental pollution such as global warming, This fuel which is used in buses is non-renewable source of energy and goes on decreasing day by day. For controlling the situation we are proposing a method in which instead of using fuel in buses we are developing an electric bus. Electric vehicle offers higher efficiency than existing technology & also helps in reducing co2 emissions. This system aims at extending the wireless power transfer to charging of moving electric vehicles. We have also introduced BRT bus indication unit On the other hand, the APC (Automatic Passenger Counting) systems, highly accurate value while has limit of seat which can carry limited passengers.

Keywords- LPC 2148, RFID Module,Wi-Fi Module,IR Sensor, Wireless Charger with Coil

I. INTRODUCTION

In the daily operation of a bus management systemthe movement of vehicles is affected by uncertain conditions as the day progresses, such as traffic congestion, unexpected delays, and randomness in passenger demand, irregularvehicle dispatching times, and incidents. In a real-time setting, researchers have devoted significant effort to developing flexible control strategies, depending on the specific features of public transport systems. This project focuses on the implementation of a Real Time bus monitoring system inside the bus station, by installing GPS devices on city buses.The Real-Time Bus Monitoring system is a standalone system designed to display the real-time locations of the buses in the city. This research will enable the tracking devices to obtain GPS data of the bus locations, which it will then transfer it to the centralized control unit and depict it by activating the symbolic representation of buses in the approximate geographic positions on the Google map. Specific software's will be used to interface the data received to the map. The internet of things (IOT) is a internetworking of physical components. The interconnection via the Internet of computing devices embedded in everyday objects, enabling them to send and receive data. IoT is a community of sensors where information is exchanged, using extraordinary connectivity protocols, with systems. The exchange of the data can be bi-directional between sensors and structures.

II. LITERATURE REVIEW

In past works given in SeokJuLee, they have actualize transport vehicle tracking for UCSI University, kuala Lumpur, Malaysia. It is developed for settled course, giving the candidates with status of bus after determined time period utilizing LED panel smart phone application. Technique used is Ardunio microcontroller Atmega328 based Ardunio UNOR3 microcontroller. Additionally, for GPS, GSM/GPRS module a similar controller is used. Program to control them iscomposed in C programming language, compiled and saved in microcontroller's flash memory. The testing results in this paper give; testing in-vehicle module, testing web server and database, testing smart phone app.[1]In PengfeiZhou, foreseeing transport entry time with cell phones is given. Innovation utilized

is participatory detecting of users. This model framework with various sort of Android based cell phones and thoroughly explore different avenues regarding the NTU grounds carry transports and in addition Singapore transports over a 7-week time span, then taken after by London in 4-weeks. The proposed framework is arrangement in well manner for the most part accessible and is vitality agreeable. The assessment comes about recommend that the proposed framework accomplishes extraordinary expectation exactness contrasted and those operator initiated and GPS based solutions. The model framework predicts transport entry time with average tolerance of 80 sec[2]In Maman Abdurrahman, versatile tracking framework is utilized to monitor vehicles position and in uncommon cases there are much helpful data can be studied, for example, speed, cabin temperature and no. of passenger. This monitoring procedure is done utilizing GPS module, and sending the information to a server through GSM modem. It is proposed machine-to-machine (M2M) communication from which Open Machine Type Communication (Open MTC) as correspondence platform for collecting and preparing area information.[3]
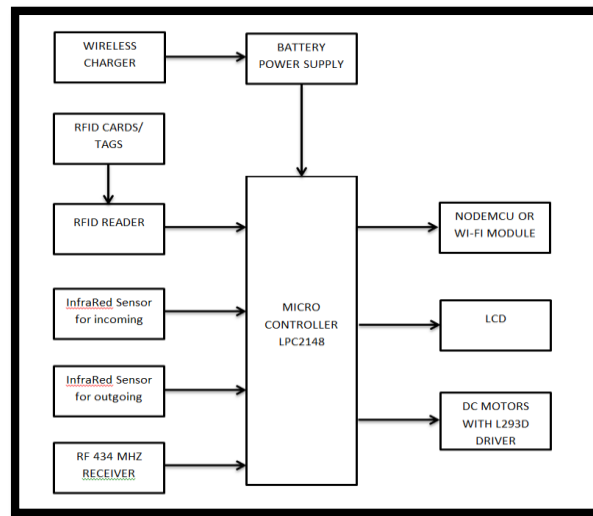
III.   BLOCK DESCRIPTION

Fig.1 Block Diagram of BUS UNIT

1. Micro controller (ARM LPC 2148) ---The ARM architecture has become the most pervasive 32-bit architecture in the world, with wide range of ICs availablefrom various IC manufacturers. ARM Processor are embedded in products ranging from cell/mobile phones to automotive braking systems. A worldwide community of ARM partners and third-party vendors has developed among semiconductor and product design companies, including hardware engineers, system designers, and software developers.Devices—including smart phones, laptops, and tablet and notepad computers) LPC2148 is the widely used IC from ARM-7 family.

2.RFID Module—Radio-frequency identification (RFID) uses electromagnetic fields to automatically identify and track tags attached to objects. The tags contain electronically stored information. Passive tags collect energy from a nearby RFID reader's interrogating radio waves. Active tags have a local power source (such as a battery) and may operate hundreds of meters from the RFID reader.

3. IR Sensor—An infrared sensor is an electronic device that emits in order to sense some objects of the surroundings. An IR sensor can detect the motion. These types of sensors measures only infrared radiation, rather than emitting it that is called as a passive IR sensor. Usually in the infrared spectrum, all the objects radiate some form of thermal radiations. These types of radiations are invisible to our eyes that can be detected by an infrared sensor. The emitter is simply an IR LED (Light Emitting Diode) and the detector is simply an IR photodiode which is sensitive to IR light of the same wavelength as that emitted by the IR LED. When IR light falls on the photodiode, resistances and these output voltages, change in proportion to the magnitude of the IR light received.An infrared sensor circuit is one of the basic and popular sensor module in an electronic device. This

sensor is analogous to human's visionary senses, which can be used to detect obstacles and it is one of the common applications in real time

4. Wireless charger with coil—The portable equipment can simply be placed near a charging station. Without needing to be precisely aligned or make electrical contact with a plug. With this technique, energy is transferred through an inductive coupling: alternating current electricity is run through an induction coil in the charging station (the primary or transmission coil), fed from main electric power. Any moving electric charge creates a magnetic field (Oersted's law), which in this case extends for a short distance through the air and any other intervening materials. The magnetic field fluctuates in strength as the AC current is constantly changing velocity. Any changing magnetic field generates an electromotive force (Faraday's law of induction), and in this case makes an alternating electric current in a second induction coil (the receiving coil) in the wireless bus. This is then typically converted to direct current with a rectifier and used to charge a battery or provide operating power. Greater distances between sender and receiver coils can be achieved when the inductive charging system uses resonant inductive coupling, where a capacitor is added to each induction coil to create two RC circuit with a specific resonance frequency. The frequency of the alternating current is matched with the resonance frequency, and the frequency chosen depending on the distance desired for peak efficiency.
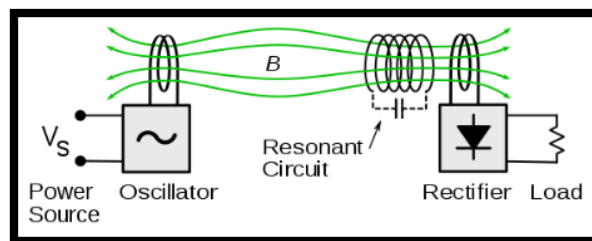
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Fig.2 Wireless charger setup using coil

5.WI-Fi Module—ESP8266 is an UART-Wi-Fi transparent transmission module with ultralow power consumption, specially designed for the needs of a new connected world. It offers a complete and self-contained Wi-Fi networking solution, allowing it to either host the application or to offload all Wi-Fi networking function from another application processor.

IV.   IV.RESULT
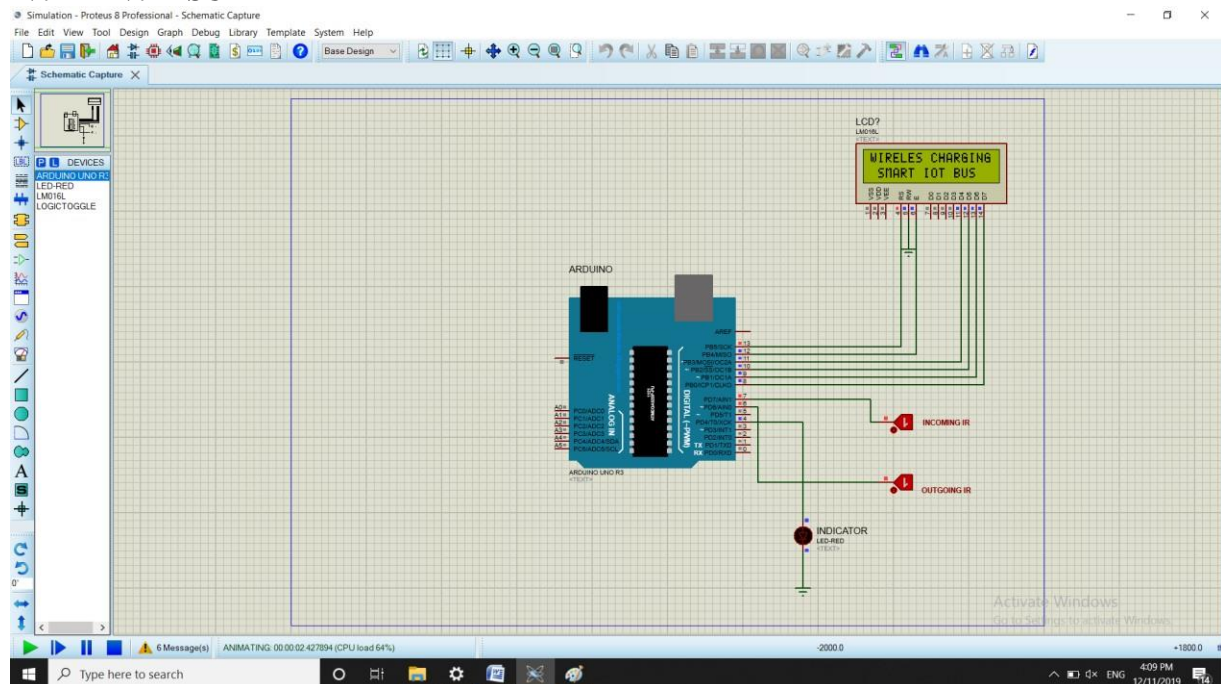
V. CONCLUSION

In this project conclude that eco-friendly bus which will run on a renewable energy source wireless electric source, which would environment friendly , keep the record of number of passenger in bus as well as keep identification of passengers using RFID.

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