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Automatic Ticket Vendor Machine Using In Bus

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ABSTRACT
This research paper is based on the concept of automatic ticket vending machine by using RFID. In order to ensure the passenger journey with no quarrels and mesh we employ   this ticket friend solution that replaces the traditional paper ticketing by RFID tickets and vouchers, vended through automated machine using smart cards, which improves the convenience and security of transaction. Ticket friend solution through automated machine enables the passenger to predetermine the transport details. In this automated system we replace the traditional ticket system by smart card that contains all details of the user including bank account information. Which is similar to the atm card? For that PIC microcontroller is already pre-programmed to do the operations. By using this we can minimize manpower in buses and ticket counters, predetermining of the bus can be done to find the destination exactly, safe journey can be assured without any disturbance and system based booking for easy usage.
Keywords: GSM, Buzzer, PIC microcontroller,IR Sensor,Loadcell

I. INTRODUCTION

Ticket friend solution mainly proposed to overcome the tricky problems in traditional ticketing method like transferring tickets from one person to another, sharing of tickets, to avoid confrontation i.e. mesh between the supervisors and passengers and safer handling of data. This system introduces smart card which entirely eliminates the need of paper tickets. Ticket friendly machine holds the details about the events provided by promoters, so that consumer can purchase tickets in their personal account using smartcards, and money are precious every time we strive to find best way to avoid issues likewise. When it comes to travel by the bus without carrying change, this proposed technique need only one identification card. IR sensor is placed at two different heights. This is placed to measure the height and to differentiate between half or full ticket. A load sensor is also used in this system which measures the weight of the luggage and displays the amount respectively. In transportation, smart cards would become the next fare payment media replacing or supplementing cash, tokens and passes. Smart cards or touch and go cards is a chip card that contains an embedded computerized chip which is either a memory or microcontroller that stores and transfer data which improves the convenience and security of any transaction and provides proof storage of user and a account identity. Once if the passenger inserts the smart card to ticket friend machine the smart card contains pay mode terms,

Which check for the amount in the account. This payment system automatically recharges all pre-issued card with the amount preferred by the authorized person and also when the person used to scan the card. After receiving details from smart card, through GSM the data related to passenger booking will be received by the GSM existing in the bus that ensures the bus operator to get the details about passenger's location. These cards again become a gateway to enter into the bus, provided with smart sensing element. Once the code made by smart card is sensed

Ammar Hatem, *et al*[1] the paper titled as" Bus Management System Using RFID In WSN" which describes a novel approach to integrate RFID (Radio Frequency IDentification) in WSN (Wireless sensor network). WSN is used to support RFID identification process by extending the read range of an RFID system. Besides, by the use of the WSN we can monitor the environment of an object and optimize RFID reader's performance and energy. Then methodology to integrate RFID technology, wireless sensor network Ben to form an intelligent bus tracking application is studied. The proposed system can monitor bus traffic inside spacious bus stations, and can inform administrators whether the bus is arriving on time, early or late. This information is then displayed on the different wireless displays inside and outside the bus station.

Md. Foisal Mahedi Hasan, *et al* [2]the paper titled as" RFID-based Ticketing for Public Transport System: Perspective Mega city

Dhaka",which portrays about the public transport ticketing system, prevailing in the megacity Dhaka (Bangladesh) ,introduces severe malfunction in the system, malicious argument among public, corruption and most of all traffic jam. This paper actually suggests a much more public friendly, automated system of ticketing as well as the credit transaction with the use of RFID based tickets. The total system mainly acts to bring out the consistency among various bus agencies that will conclude in uniform access of passengers in daily rides through an automated server being updated every single time the passengers travel by carrying the RFID based tickets.

      Ameer H. Morad,*et al* [3] the paper is titled as" GPS Talking For Blind People",In this paper, a device is designed to help the blind people to navigate the environment without asking any one.The device based on GPS (Global Positioning System), the raw data for location coordinate where the blind people stands is detected by GPS receiver, processing these data by PIC microcontroller to calculate real coordinate related with current position, then translate it to specific voice message which are presorted in voice recorder and the blind person hears voice message through the headset. Our design aims are to produce device that is more cheap by using little number of components and easy to use so that the blind person need not to do anything just hearing the voice message. The device be practically tested by some blind people who are members of Abdallah Bin Maktoom blinds school in Jordan, they gives good opinion about device.

      Dhruba Ningombam, *et al [4] the paper is titled as* " An Intelligent Voice Enabled Distance to Empty and Navigation System",which describes about the Recent years have witnessed a fast growth in automobile sector, leading to increased urge for an intelligent man machine interaction system for navigation. This paper describes the development and implementation of an intelligent speech agent based navigation system and distance to empty (DTE) calculation for autonomous land vehicle applications. This system, initially determines the current location using Global Positioning System (GPS). The GPS outputs NMEA (National Marine Electronics Association)sentence that contains information about current location including longitude and latitude. The input to the system i.e. the desired destination is through voice command and outputs the following-(i) the road distance and the amount of fuel required, through speech, (ii)the altitude difference between the current location and the destination, which is further used to calculate the mileage variation with altitude and (iii) displays the route from the current location to the destination on a map along with the prediction whether the user will be able to reach the desired destination with fuel

left in the automobile, how much distance it can travel with the remaining fuel and how much additional fuel is required to be filled up to reach the destination.

II. BLOCK DIAGRAM.
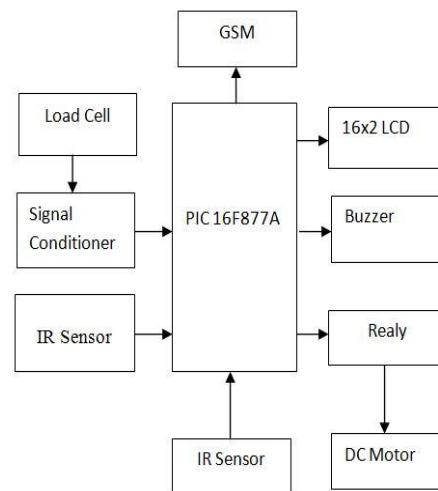
(Fig.1 Automatic Ticket Vendor)

III. BLOCK DIAGRAM DISCRIPTION
3.1. GSM:
      GSM networks operate in a number of different frequency ranges (separated into *31T*GSM frequency ranges*31T* for 2G and *31T*UMTS frequency bands*31T* for 3G). Most *31T*2G*31T* GSM networks operate in the 900 MHz or 1800 MHz bands. GSM-900 uses 890–915 MHz to send information from the *31T*mobile station*31T* to the *31T*base station*31T uplink*

3.2. 8-bit Microcontroller with 4K Bytes Flash:
      The AT89C51 is a low-power, high-performance CMOS 8-bit microcomputer with 4K bytes of Flash Programmable and erasable read only memory (PEROM). The device is manufactured using Atmel's high density non-volatile memory technology and is compatible with the industry-standard MCS-51 instruction set. The Idle Mode stops the CPU while allowing the RAM, timer/counters, serial port and interrupt system to continue functioning. The Power-down Mode saves the RAM contents but freezes the oscillator disabling all other chip functions until the next hardware reset

3.3. Transmitter and Receiver:
      In IR transmitter and receiver, IR transmitter is nothing but one type of LED, generally called IR Transmitter. Initially IR transmitter and receiver is placed straight to each other, so the transmitted IR ray are received by IR receiver. But when passenger crosses the IR transmitter and

receiver, the rays received will be interrupted. This infrared transmitter and receiver is called as IR TX-RX pair and cost less than 10RS

3.4 4 IR LED and IR sensor:

IR LED is used as a source of infrared rays. It comes in two packages 3mm or 5mm. 3mm is better as it is requires less space. IR sensor is nothing but a diode, which is sensitive for infrared radiation

3.5 Liquid crystal display (LCD):

Liquid crystal displays (LCD's) have materials, which combine the properties of both liquids and crystals. These modules can be interfaced with a 4-bit or 8-bit microprocessor /Micro controller. The LCDs used exclusively in watches, calculators and measuring instruments are the simple seven-segment displays.

3.6 Buzzer

A buzzer or beeper is a signalling device, usually electronic, typically used in automobiles, household appliances such as a microwave oven, or game shows.

IV.   PROPOSAL METHOD AND WORKING:

Ticketing system without human resource-Conductor is implemented using RFID tag which is rechargeable one. If the travelling amount and remaing balance all the information transformation is done with the help of GSM Module

V.   CONCLUSION

By implementing this project as real time project, many disadvantage in ticketing system is rectified and the implementation of advanced system as automatic ticket vendor. Fare is debited from RFID tag where tag is rechargeable one. But, this Process can made better by implementing the rechargeable RFID tag as ATM card (or) debit card just by changing the program. So bus fare will directly debit amount from bank.

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