

Conductor Less Bus Ticketing

Vitthal Waghmare¹, Rushikesh Santrre², Piyush Gupta³, Rudull Redijj⁴

Department of Electronics and Telecommunication Engineering, Sinhgad Academy of Engineering, Pune, India^{1,2,3,4}

Abstract: Conductor less bus ticketing is the concept of making smart transportation system which will reduce human power, in the most convenient way possible. This project allows us to focus on getting our work done without human efforts. Bus ticket fair will be given to the passenger automatically. Person who is travelling can pay fair online. The device communicates with them using Bluetooth.

Keywords: PIC18F4550, Android app, Bluetooth, HC-05

I. INTRODUCTION

This system helps in situations like overpopulation in transportation systems. At these situations, the conductor may not be able to give proper tickets to all the passengers and also he/she cannot verify if proper change is given to the passenger and all passengers have got their tickets. So we will use associate economical methodology as RFIDs by not giving the price tag within the style of paper instead collection the fare from it in line with their distance travelled and it additionally reduces the consumption of papers that ar used for printing the tickets because the traveller is often carrying the RFID. The RFID contains the data's of the passenger and additionally the fare is additionally debited it from it. RFID is one among the better-known technologies that ar these days utilized in several areas for identification and security functions. The passengers carrying the RFID ar suggested to swipe it within the RFID reader, so the fare is collected from it. And Bluetooth technology is also available in this project. If in case passenger forgot the RFID card then he can use the mobile to pay the ticket fair.

II. LITERATURE REVIEW

Paul Hamilton and Suresh Sankaranarayanan (2013) proposed in this paper consists of a RFID which is used for recording the timings of the buses and it is done with the help of sensors situated in the traffic stop lights, intersections and other places. This timings will be send to the person's mobile phone whose RFID is used for getting the bus timings and also the persons details is also stored in the RFID for future details.

Arun Das .S .V and K. Lingeswaran (2014)proposed in this paper consists of a smartcard which contains the information about the users and Global Positioning System (GPS) is used to track the locations, so that the distance can be calculated and the amount is debited from the smart card. By the GPS and the arrival time of the buses are send to the bus stops where it is displayed using LCD's. The RFID is also used for tracking of the buses.

T.Manikandan,P.G.Kalaiyarasi,P.P.K.Priyadharshini, P.R.Priyanga (2015) proposed in this paper consist of IR sensor, slot sensors, GPS, Global System for Mobile Communication (GSM), RFID and microcontroller. The sensors are used for calculating the distance and counting the number of passengers travelling in the bus and the amount is debited from the RFID.The accident notification is also send to the nearest hospital with the help of GPS and GSM. The RFID can be recharged in a nearby bus depot or in other shops using a keypad and a LCD.

Prof. A. U. Deshmukh, PriyankaKokil, DhanashriKhadtar, BhagyashriKhadtar (2016) proposed in this paper consists of a camera which captures the image of the passengers entering the bus and checks the availability of the passenger in the database. If the information about the passenger is present in the database then the respective amount according to their distance is debited from the account of the passenger and the message will be send to the passenger regarding the amount. If the information is no present in the database then the passenger has to carry a RFID with him/her while travelling in the bus.

III. EXISTING SYSTEM

In our country there's continuously a presence of issues concerning the buses associated with ticketing methodology. The conductor can offer the tickets to the passengers WHO square measure all motion within the bus .Based on the count and also the quantity given to the conductor, he/she can issue the tickets to the passengers. This will include

many papers for printing the tickets and the use of hand held machine also creates many problems. The traveller additionally needs to carry the right quantity inside throughout his/her travel. The conductor ought to even have the right amendment once any traveller isn't having the right quantity. Sometimes some conductors will not give the correct change to the passenger. For example, when we travel from erode to Coimbatore the charge for the ticket is only 59 rupees but when the passenger travelling in that bus gives the conductor an amount of 60 rupees. Then the conductor needs to offer the traveller one rupee. Some conductors square measure giving the right amendment to the traveller however several aren't giving. The existing system overcomes these difficulties by employing a RFID with keyboard within which the traveller needs to enter the designation wherever he/she goes to urge down. The RFID scanner can read the several information concerning the traveller from the RFID tag. The several quantity is debited from the traveller with the assistance of that RFID tag.

IV. PROPOSED SYSTEM

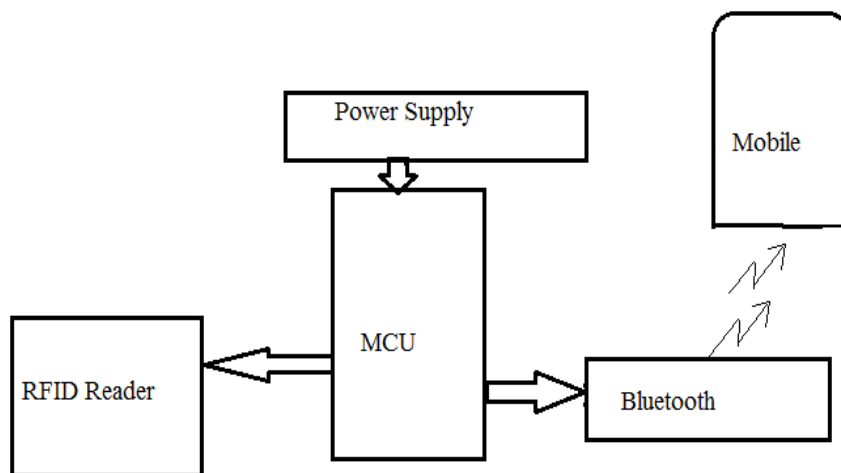


Fig1: Block Diagram

Nowadays, automation is seen in each nook and corner of the globe. Hence we are able to apply it in buses to come up with automatic fare assortment and ticketing system victimization RFID. The RFID is one of the best technologies in getting the details of a person by just using the tag and the amount is debited from it according to the distance travelled by the passenger. RFID reader which helps in identifying the owner of the tag once the tag is punched in it. These interrupted signals square measure send to the PIC microcontroller wherever the count worth are going to be incremented and this intimates the quantity of traveller getting into the bus. Then the traveller can punch his/her RFID within the reader. According to the distance travelled by the passenger, the amount will be debited from the passenger's account. If user forgot the RFID then he/she can use mobile application for payment of bus fare.

V. COMPONENT DETAILS

A. Radio Frequency Identification : RFID stands for Radio Frequency Identification. It is one in all the members of Automatic Identification and information Capture (ADIC) technologies and may be a quickest and reliable in distinctive the objects. There ar 2 main components: The inquirer (RFID Reader) that transmits and receives the signal and electrical device (tag) that connected thereto object. An RFID tag consists of a minute semiconductor device and antenna. RFID tags can be active or passive. Communication between the RFID reader and tag happens wirelessly. The reader emits an occasional power radio wave field that is employed to power up the tag so the knowledge n the tag may be passed. Here we tend to ar employing a passive tag that is a smaller amount pricy and lighter and may be applied within the harsh surroundings and ar maintenance free and can last for years. An RFID reader may be a device that's accustomed interrogate an RFID tag. The reader has Associate in Nursing antenna that emits radio waves, the tag responds by sending back its data. When {they are|they're} within range of the reader unit they are able to draw sufficient power from the magnetism field to power their own internal electronics. The passenger punches his/her tag while entering the bus and the amount will be debited from it based on the distance travelled by the passenger.

B. PIC Microcontroller: PIC is referred as "Programmable Interface Controller". PIC16F877A is used in this proposed system and it is a 40 pin microcontroller PDIP and its operating frequency is DC-20MHz. There are five I/O Ports port A,B,C,D,E and 15 Interrupts. It has parallel slave port enforced thereon and includes a capability for

reprogramming because it uses a non-volatile storage. The signals from all the units are sent to the PIC and that they are processed and controlled. The pin diagram for PIC13F877A is shown below.

C. LCD Liquid crystal cell displays: (LCDs) are used in similar applications where LEDs are used. These applications are display of numeric and alphanumeric characters in dot matrix and segmental displays. The function of each pins of LCD are VCC, VSS and VEE while v and v provide +5v and ground, respectively, v is used for controlling LCD contrast. There are 2 vital registers within the digital display. The RS pin is employed for his or her choice as follows. If RS=0, the instruction code register is selected, allowing the user to send a command such as clear display, cursor at home, etc. if RS=1 the information register is chosen, allowing the user to send data to be displayed on the LCD. R/W input permits the user to jot down data to the digital display or browse data from it. R/W=1 when reading; R/W=0 when writing. The enable pin is used by the digital display to latch data given on its data pins. When data is supplied to data pins, a high to low pulse must be applied to this pin in order for the LCD to latch in the data present at the data pins. The 8-bit information pins, D0 – D7, are used to send information to the LCD or read contents of the LCD'S internal registers. There are instruction codes that may be sent to the show|LCD|digital display alphanumeric display} to clear the display or force the pointer to the house position or blink the pointer. RS=0 is employed to envision the busy flag bit to envision if the digital display is prepared to receive data. The busy flag is D7 and may be read once R/W=1 and RS=0, as follows: if R/W=1, RS=0, when D7=1, the LCD is busy taking care of internal operation and will not settle for any new data, when D7=0, the digital display is prepared to receive new data.

D. Bluetooth module HC-05: HC-05 has red LED which indicates connection status, whether the Bluetooth is connected or not. Before connecting to HC-05 module this red light-emitting diode blinks endlessly during a periodic manner. When it gets connected to any other Bluetooth device, its blinking slows down to two seconds. This module works on 3.3 V. We can connect 5V supply voltage as well since the module has on board 5 to 3.3 V regulator.

VI. CONCLUSION

By implementing this project as real time project, many disadvantages in ticketing system is rectified and the implementation of sending accident occurrence information automatically to the nearest hospital may save many life. Fare is debited from RFID tag where tag is rechargeable one. The main challenges faced were speech recognition in noisy conditions. This system collect bus ticketing automatically and reduce human effort, the project is efficiently handles the bus ticketing and fair collection service.

REFERENCES

- [1]. T. Manikandan, G. Kalaiyarasi, P K. Priyadharshini, P R.Priyanga," Conductor less Bus Ticketing System Using RFID and Accident Information through GPS and GSM", IJSET - International Journal of Innovative Science, Engineering & Technology, Vol. 2 Issue 9, September 2015.
- [2]. Prof. A. U. Deshmukh1 PriyankaKokilDhanashriKhadtarBhagyashriKhadtar," Conductor Less Bus using Image Processing", IJSRD - International Journal for Scientific Research & Development| Vol. 4, Issue 02, 2016.
- [3]. CiripireddiDurgaprasad, G. Rajesh, "Automatic Fare Collection System in Public Transportation", International Journal of Scientific Engineering and Technology Research, Vol.05, Issue.47 December-2016.
- [4]. Arun Das .S .V, K. Lingeswaran, "GPS Based Automated Public Transport Fare Collection Systems Based On Distance Travelled By Passenger Using Smart Card", International Journal of Scientific Engineering and Research, Volume 2 Issue 3, March 2014.
- [5]. Suresh Sankaranarayanan, Paul Hamilton," Mobile Enabled Bus Tracking and Ticketing System", International Conference on Information and Communication Technology,2014.
- [6]. Paul Hamilton and Suresh Sankaranarayanan, "Intelligent Agent Based RFID System for on Demand Bus Scheduling and Ticketing", International Journal of Future Computer and Communication, Vol. 2, No. 5, October 2013.