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A PATH FOR HORIZING YOUR INNOVATIVE WORK

STATE TRANSPORT SMART BOOKING SYSTEM

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Abstract: Today's Transport services vary rapidly with time and becomes demanding. The transport demands better efficiency in public transport to reduce the public transport problems. Public want their journey smoothly. Today's scenario is rapidly changing population increases day by day and our local transportation system is on the way of collapsing. Many times government faces corruption in public transport services like a traditional bus service. Nowadays, government and other private transport companies offer creative services to public with transparent business without any corruption. Our team will glad to present State Transport Smart Booking System fulfilling these demands of public and the system who provides transport service. A State Transport Smart Booking System basically aims to reduce corruption and barbarity in transport system helps government to reduce corruption. There are three users interacting in system Bus conductor, public, Administrator. The admin is plays an important role in the state transport smart booking system.

Keywords: State Transport, Booking System



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INTRODUCTION

A state transport smart booking system is easy going operating system. It gives lot of efficiency in public transport. Smart bus booking system is a combination of Arduino uno microcontroller, Ultrasonic sensor, Radio-frequency (RFID) reader, tags, web application and database. In this system we use Radio-frequency identification reader and tags which provides information about each traveler person who travels in bus. That can be done by the tag which is provided to each travelling persons in bus. The tag stored by a unique identification number allocated by system for that person. The seat is installed by ultrasonic sensor which determines the traveler presence and gives output web application through arduino uno. Bus conductor has authority to book tickets and to manage any conflicts regarding to booking tickets by using their own account. The bus conductor can view and set the source and destination of person by using their account. The administrator has an account by using this admin can view, edit, creates an accounts.

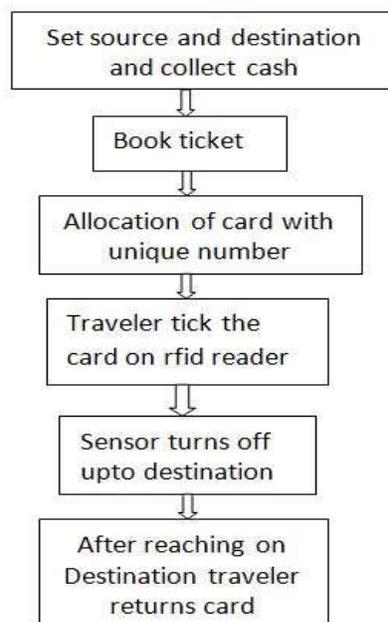


Figure 1 Process of state transport smart booking system.

The figure 1 shows the operation of state transport smart booking system at traveler point of view. In the first step we can see the person is comes in bus and request to conductor for book the ticket for particular source and destination. Then conductor set their source and destination and collect cash for that journey after clicking on book ticket by conductor. The one tag is given to customer with a unique id number which is valid up to reaching their destination and that tag

is read by the rfid reader which is set on front side of sit which is allotted to that traveler. When the traveler tick their card on rfid reader then the ultrasonic sensor is turned off up to their destination after reaching their destination the sensor will turned on and the card session will be ended and card can be reusable. That card can be reallocate with another person who traveling in bus and the conductor can book up to 30 tickets only in one session of booking.

II. LITERATURE REVIEW

The Maharashtra State Road Transport Corporation is established by State Government of Maharashtra as per the provision in Section 3 of RTC Act 1950. The Maharashtra State Road Transport Corporation abbreviated as (MSRTC, or simply ST)[1], is the state run bus service of Maharashtra, India with 16,000 buses which ferry 7 million passengers daily on 17,000 routes.[2] It is the third largest bus service provider in India behind Andhra Pradesh State Road Transport Corporation. It serves routes to towns and cities within Maharashtra and adjoining states. Apart from locations within the state of Maharashtra, the MSRTC service also covers destinations in neighboring states. It is one of the largest fleet owners in India



Fig.2 Traditional bus booking system.

In figure 2 we can see that the traditional bus booking system the conductor is book the tickets directly by cash. In the traditional bus booking system the conductor is book the ticket or not booked. The tickets that the conductor is not booked but collect low amount of cash from traveler for their journey that put in their own pocket. Because of that there is large amount of loss of ST Mahamandal therefore the STSBS project is comes in scenario. In STSBS we insert the sensors in sit which identifies the traveler is sited on sit or not. When the traveler is get ticket the sensor is off up to their destination and we can easily determines how many user is booked tickets and if they booked then their cash will collected from conductor. The MSRTC is giving only a facility to book tickets online for some big cities or big stations but that cannot provide this facility all small cities and it also not provide the identification of traveler that's why the STSBS is important as compare to traditional bus system.

III.LOGIC BEHIND THE SYSTEM

1. CONCEPT

In this paper of RFID based state transport smart booking system for identifying the user and booking their tickets, as we can see that there are different modules of the project so it would be very suitable to divide this project into certain phases

RADIO FREQUENCY IDENTIFICATION (RFID)

Initially RFID tags were made to eventually replace barcodes in different chains. Their advantages are that they can be read wirelessly and with no line of sight, contain more data than barcodes, and are stronger. The recent technology, include the frequency ranges used and standards required. With the increase in ubiquity of RFID tags, however, privacy became unease. The RFID technology did not stop at thing-level tagging. [3][4]

TAGS

The uses for RFID tags are so extensive; there is a large interest in lowering the costs for production of RFID tags. It turns out that printing tags may become a possible alternative to traditional production. RFID tags or simply "tags" are small transponders that respond to queries from a reader by wirelessly transmitting a serial number or alike identifier. They are greatly used to track items in production environment and to label items in supermarkets. They are usually thought of as a highly developed barcode.[7]

EM-18 RFID Reader

We had used EM-18 RFID Reader Module that is connected through arduino, its basic use is to provide authorize access as this module can only provide access when you are having a access card if there is any unauthorized people try to break the security system them this would make active other parts of the system.[3]

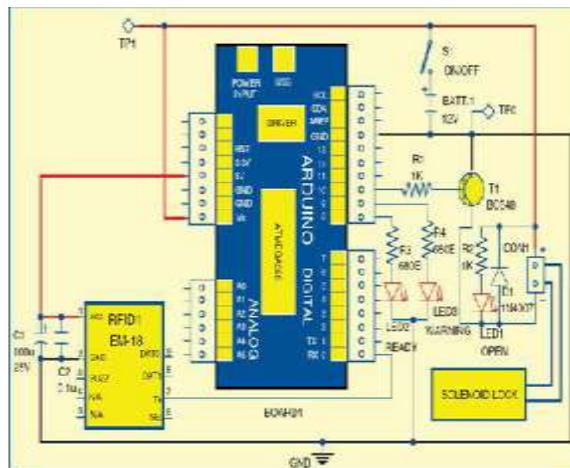


Fig.3 RFID EM18 Module.

ARDUINO UNO BOARD

It is an open source electronics prototyping platform based on bendable, easy-to-employ hardware and software. It is proposed for artists, designer, hobbyists & anyone interested in generating various design for objects or environmental purpose .Arduino UNO is a board based on ATmega328microcontroller. It consist of 14 digital input/output pins, six analogue inputs, a USB link for programming the onboard microcontroller, power jack, an ICSP header & are set button. It is work due to 16MHz crystal oscillator &contains everything needed to support the microcontroller. It is easier to use as the user simply needs to connect it to awww.ijeee-apm.com International Journal of Electrical & Electronics Engineering 7computer with a USB cable or power it with an AC-to-DC adaptor or battery to get in progress. The microcontroller on the board is programmed using Arduino programming language &Arduino development environment.

ULTRASONIC SENSOR

Ultrasonic transducers are transducers that convert ultrasound waves to electrical signals or vice versa. Those that both transmit and receive may also be called ultrasound transceiver. Many

ultra-sound, sensors beside being sensors are indeed transceiver because they can both sense and transmit. These devices work on a principle similar to that of transducers used in radar and sonar systems, which evaluate attributes of a target by interpreting the echoes from radio or sound waves, respectively. Active ultrasonic sensors generate high-frequency sound waves and evaluate the echo which is received back by the sensor, measuring the time interval between sending the signal and receiving the echo to determine the distance to an object. Passive ultrasonic sensors are basically microphones that detect ultrasonic noise that is present under certain conditions, convert it to an electrical signal, and report it to a computer.

DATABASE

Formally, a "database" refers to a set of related data and the way it is organized. Access to these data is usually provided by a "database management system" (DBMS) consisting of an integrated set of computer software that allows users to interact with one or more databases and provides access to all of the data contained in the database (although restrictions may exist that limit access to particular data). The DBMS provides various functions that allow entry, storage and retrieval of large quantities of information and provides ways to manage how that information is organized.[8]

MYSQL DATABASE

Mysql is an open-source relational database management system (RDBMS)in July 2013, it was the world's second most widely used RDBMS[9],the most widely used open-source client server model RDBMS.[10]

WEBSITE

A website, also written as website, or simply site, is a set of related web pages typically served from a single web domain. A website is hosted on at least one web server, accessible via a network such as the Internet or a private local area network through an Internet address known as a uniform resource locator (URL). All publicly accessible websites collectively constitute the World Wide Web.

IV. WORKING AND RESULT

State transport smart booking system is made from six basic things that are RFID reader, tag, arduino uno, ultrasonic sensor, database, web site. RFID reader for reading the tag which is allocated to traveler for unique identification. Tag is for storing a unique identification no. for

giving the session to traveler in system. Database is used to store and check the id number of traveler for turning on or off the sensor. Web site is for conductor and administrator.[6]

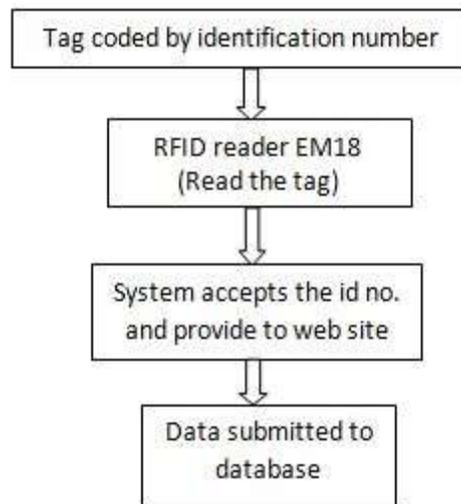


Fig.3 Module Interaction

This different type's account gives the different type of authority to user. First the traveler enters in book ticket event then conductor is logged in system from their own account and books the tickets of travelers in bus. Then the conductor is read traveler card by RFID reader then he gets id of that traveler, conductor set their source and destination. In the figure 3 we can see that how the modules are interact with each other the first module perform an activity and send output to next module and next module perform activity and provide an output to third this process will continue until the travelers are not end their journey

SOFTWARE & PROGRAMING

We use the software for developing the web application that can be store and check all information about project is Eclipse Luna that allows us to develop a web project easily in less time by checking errors and syntax continuously while typing and database use to store that information that is mysql database. The software for this project is written in Arduino indoctrination language. The Arduino UNO is program using Arduino IDE software. Atmega328 on Arduino UNO arrives with a boot loader that allows you to upload new code to it without the use of external hardware programmer. It used to communicate using STK500 protocol. You can also by pass he boot loader & program the microcontroller through in circuit serial programming (ICSP) header, but with boot loader the program is fast & simple.

V.CONCLUSION

STSB identification system is more secure and fast responded as compared to the other system. The advantage of the RFID system is contact-less and works without-line-of-sight. Hence this project can be useful for implementation of identification of traveler. This project can improve by updating the sensors and interfaces between software and hardware.

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