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Development of College Security System Using RFID

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ABSTRACT: This project will support the manager, regardless of whether in an industry or instructive foundation, to screen the request for the candidates. We have structured a task for instructive foundation to screen the exercises of the understudies who will overlook the class and leaving the grounds inside the working hours. This undertaking will screen the standardized tag and RFID of the understudy in numerous spots and close the director. It's anything but difficult to develop and introduce in the grounds

KEYWORDS: Buzzer, EEPROM, Arduino, Tag, LCD, RFID module.

I. INTRODUCTION

Presently a-days radio recurrence recognizable proof is a fundamental piece of everyday life which permits profitability and convenience.This RFID structure is used in various applications for informational, traffic grounds get to. Similarly single RFID card is used for various applications, for instance, homeroom investment, lab, test anteroom, transport, human administrations, cheerfulness and industry. Earlier, investment is taken truly. This is repetitive method and moreover inefficient for workforce. Due to this huge time of understudy similarly as faculty furthermore, exact investment can be by using this system. By using RFID structure we can clear out wastage of time. By using this modified RFID structure, we get ensured grounds and secure condition. By this structure we can completely screen ID of person who enter the school entryway or inside school. Thus this system satisfies our place of modified cooperation and school get to using RFID. The understudies and workers ought to have their different sharp card. The system tackles checking the RFID card which is examined by the peruser and the information is invigorated in the database. This system realizes more solace, security and profitability to informational association.

II.LITERATURE SURVEY

Gammel, B.M and Ruping.J [1] This system is operated with the three factors; they are having a smartcard, password, and any user specific identification components. These may be: fingerprint, or any facial elements. The purpose of this application is to limit the access of the unauthorized person to high security locations, based on access rights of different persons.Kumar.P.YGanesh.T.S [2] The Smart card consists of a user ID and Finger Code. Once the Smart card is inserted into the system (PC interfaced with Smart card reader), it will ask for the user ID and a live fingerprint. The fingerprint matching will be successful only if the Euclidean distance between the Finger Code of the live fingerprint.Lassus,M [6] Smart cards contain special purpose microcontrollers with built in self programmable memory and tamper resistant features intended to make the cost of a malevolent attack far superior to the benefits. The paper is both a survey of the existing components, their applications and an attempt to describe some of their possible evolutions.Simpson,M.C.S [8] Microprocessor based smart card technology was selected as providing the two-way secure data transmission required for elimination of the need to read meters and bill customers. A pilot metering system was produced for site trials. The valuable experience gained enabled the objectives to be formulated and the cost benefits to be established for the successful development of a new system.Selimis.G, Fournaris.A. Kostopoulos.G, Koufopavlou.O [9] The nature of the data involved in smart card transactions and smart card intended uses, introduce another important factor in the smart card design mechanism which is security. The evolution of VLSI technology allows the efficient implementation of costly cryptographic operations in the smart card design methodology. Apart from the traditional cryptographic algorithms, additional techniques and special design materials have been introduced in order to protect the smart card system from cryptanalytic attacks.Mei Hong,Hui Guo , Bin Luo [7]A multi-service smart card system enables users to access different services over an open network with a single smart card. Due to its highly economic and social benefits, the multi-service smart card system has drawn much attention in industrial and academic areas.The model allows users to access different services with a single password. The privacy and service confidentiality are achieved through a set of protections-password protection, user identity protection, and service transaction protection-to guarantee the users anonymity to all service systems and ensure high unlink ability between different services.Chang, C.-C,Hwang, R.-J , Buehrer. D. [4] This paper presents an integrated system for high security objectives. Such as: defense, and nuclear or any critical entering areas. This system is operated with the three factors; they are having a smartcard, password, and any user specific identification components. These may be: fingerprint, or

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any facial elements. The purpose of this application is to limit the access of the unauthorized person to high security locations, based on access rights of different persons.

III. METHODOLOGY

The TAG is filtered by the READER. The code is sent to ARDUINO. This is finished by the sequential port pin called MAX RS 232. The ARDUINO is utilized for controlling the procedures required in the framework. The ARDUINO is been interfaced with numerous gadgets, for example, auxiliary memory EEPROM, PC, LCD. The data of the particular EPC is entered/refreshed in the information base of the server PC. This exchange of data from ARDUINO to PC in done by TCP/IP. The EPC code is been shown on the LCD. Ringer is utilized to demonstrate that filtering of TAG is finished by the READER. As the PC might be off because of specific reasons like force cut and so on. The data to be refreshed is impermanent put away in the auxiliary memory EPPROM. Later this data is put away in the PC is turned on.

IV. OPERATION

BLOCK DIAGRAM

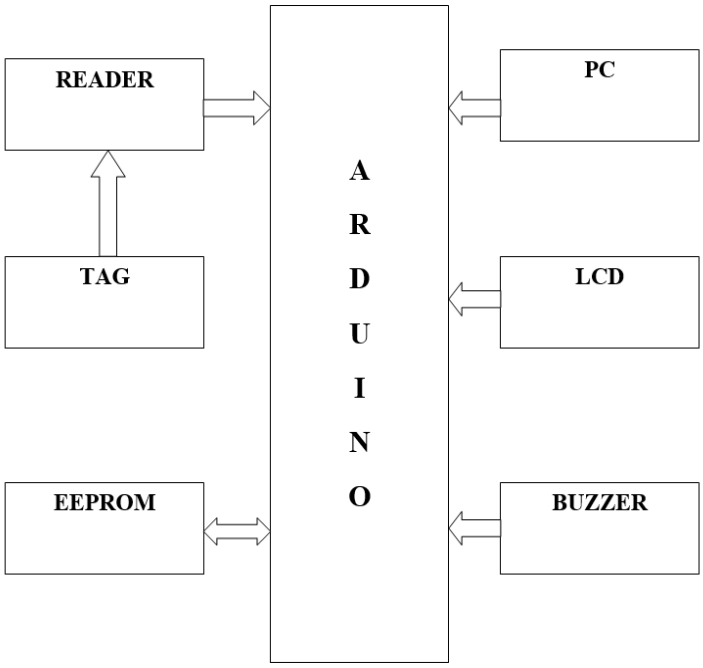

Fig4.1 Block diagram for college security system

4.1 SMART ID CARD

Utilizing a biometric gadgets like unique mark validation, Retina examining, secret phrase assurance are most regularly utilized advancements however right now are predominantly concentrating on school going understudies. We gave a Smart Id card, the card is empowered with Radio Frequency Identification Device contributes it. Labeling undergrads with RFID chips is phenomenal.

Fig 4.2Smart ID card

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4.2 STUDENT SECURITY SYSTEM DEVICE (SSD)

This is the contraption completed with fragments like RFID, RFID READER, GSM Module, GPS Module, Which is related with the Arduino to bring the stand-out data from the Smart Id card and convert into Hexagonal number, which is sent to the Arduino. This contraption is related with neighborhood intra net of the SSD. The device itself will go about as the local cut off system in case it is engaged with organize, which helps in understudy following and seeing too**.**

4.3 GSM MODULE

The GSM Module is related with the Arduino. This GSM is a sort of modem that recognizes SIM card, and works through an enrolment to an adaptable head. It works like a wireless for sending and getting SMS through radio waves. The microcontroller contain the AT orders, written in C, for sending SMS. The code was affirmed using a terminal program to ensure that microcontroller sent the privilege AT requests to GSM modem. It is moreover liable for encouraging SMS to school.

4.4 GPS MODULE

Latest Technologies enabled advancement in mobility devices, handful of devices available to track and monitor a student. But it is the cost effective systems and give accurate value of student place.

Fig 4.3 GPS module

4.5 EMERGENCY BUTTON

Let's consider a situation of students missing, In case of student not found in the appropriate hotspots on certain time period, CSD will involve a buzz to intimate the student in emergency situation to parents. The Buzzer contains the message of saying from where it is triggered and information about the student name and place. If suppose, a student is found in streets normally peoples will inform to the school or police station with the information provided in the school Id card the card fetches the GPS location and other basic information from the device to parents, guardians. It helps locating the child in Emergency situation.

V. FLOW CHART AND IMPLEMENTATION SETUP

Here we have designed an Experimental setup for student safety system using RFID and GPS. We have tested in our experimental setup. This Experiment-al setup is working accurately without any error.

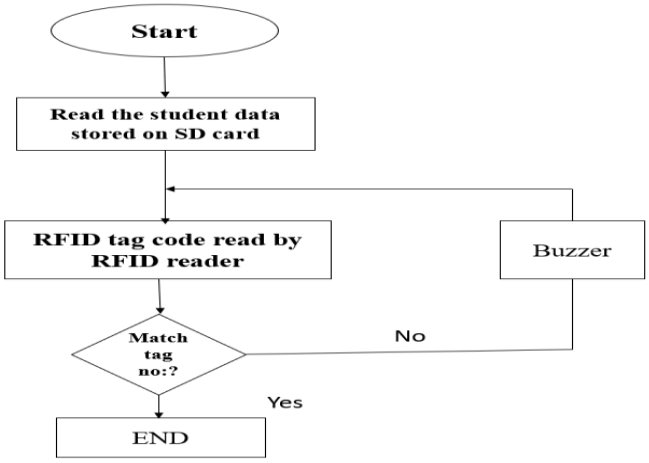

Fig 5.1 Flow chart of the bus unit

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In this flow chart we also initialize the I/O ports. Right off the bat, participation is put away to the impermanent table. To decide the nonappearance list by coordinating understudy list with participation list in transport. Right off the bat we instate the I/O ports. Next, the controller will peruse the understudy list put away on SD card. At that point, the peruser read the label ID. Information is sent to controller gadget in byte structure. The controller will check whenever read label ID is coordinated with the understudy list put away on SD card. The bell will caution if the ID coordinated, and send an alarm message to guardians.

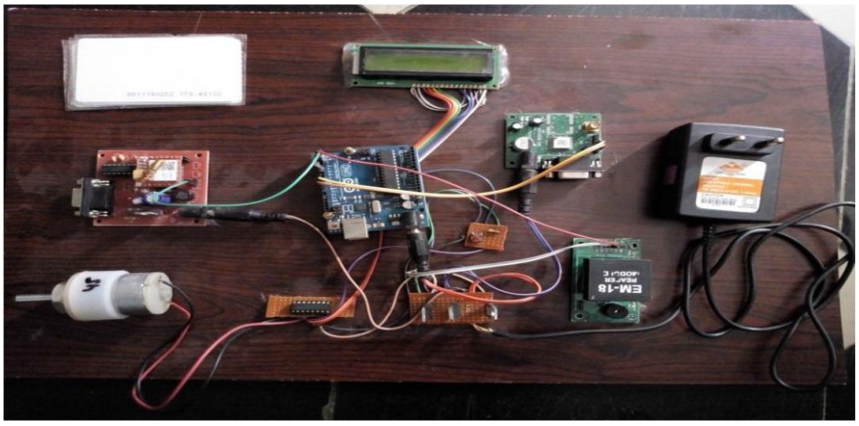

Fig 5.2 Implementation setup

5.1 WORKING PRINCIPLE

RFID is the abbreviation for radio recurrence ID, which is a programmed distinguishing proof innovation. It is utilized to recover and store information on RFID labels with no physical contact. A RFID framework ordinarily comprises of RFID labels, RFID peruser and database the board framework. The labels might be either latent or dynamic through its reception apparatus, RFID peruser peruses the data put away on proposals labels. For the RFID activity recurrence of the peruser ranges from 125 KHz - 2.4GHz. One of the upsides of RFID framework is that, view isn't fundamental for perusing the labels with the peruser, in this manner, it require significantly less human taking care of to peruse and for handling. The working standard of our framework is, when understudies who have RFID label goes through the entryway of study hall, RFID peruser will peruse the EPC [Electronic Product Code] of RFID labels, and afterward this EPC will be shown on LCD and it will be sent to PC. In the wake of checking the database to get required data of the understudies, the participation of understudies will be put away in microcontroller memory

VI. CONCLUSION

RFID framework is an adaptable innovation. This framework is utilized in numerous application and continuous application. Our application RFID frameworks give precise and convenient participation of understudies and keep away from the wastage of important time of understudy and personnel. In the event that if any understudy is missing for a long time, every day truants is accounted for to instructive administration. The passage of individual is recognized by RFID framework for a legitimate and precise consideration of grounds. This framework has capacity of RFID to get, store and forward data to PC on the off chance that if there is no power. To get best execution the RFID perusers and labels must be in acceptable quality.

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