



RFID BASED ATTENDANCE SYSTEM USING ARDUINO

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ABSTRACT

Most instructive foundations, chairmen are worried about understudy unpredictable participation. Delinquencies can influence understudy in general scholastic execution. The Conventional technique for gauging participation by calling names or marking on paper is very tedious and uncertain, thus wasteful. Radio Frequency Identification (RFID) based participation framework is one of the answers for address this issue. This framework can be utilized to gauge participation for understudy in school, school, and college. It likewise can be utilized to gauge participation for laborers in working spots. Its capacity to particularly recognize every individual dependent on their RFID label kind of ID card make the way toward taking the participation simpler, quicker and secure when contrasted with customary technique. Understudies or laborers just need to put their ID card on the peruser and their participation will be taken.

INTRODUCTION:

These days, participation framework in schools and universities is commonly founded on paper. Here and there this procedure causes blunders and furthermore takes additional time. This undertaking utilizes RFID innovation to make a note of each understudy going into the study hall and furthermore to compute the time the understudies lives in the class. In this proposed framework, each understudy is assigned with a RFID tag. The procedure of participation should be possible by putting the card close to the RFID peruser.

The term RFID (radio recurrence distinguishing proof) is a one sort of electronic gadget which incorporates a little reception apparatus and a chip. This gadget is utilized to communicate the data like

people, creatures, books or any stuff among peruser and RFID label utilizing radio recurrence electromagnetic fields. It is equipped for conveying 2k bytes of information. There are various types of RFID frameworks in the market, which comprise of a receiving wire, a transponder and a handset. A few sorts of labels can be found near the RFID peruser and a few labels can be situated a long way from the peruser. The working recurrence scopes of these gadgets for the most part incorporate low, mid and high ranges. The low recurrence run is from 30kHz to 500kHz, mid recurrence go is from 900kHz to 1500kHz and high recurrence extend is 2.4kHz to 20MHz. The overview of methodology is shown in figure 1.

Methodology

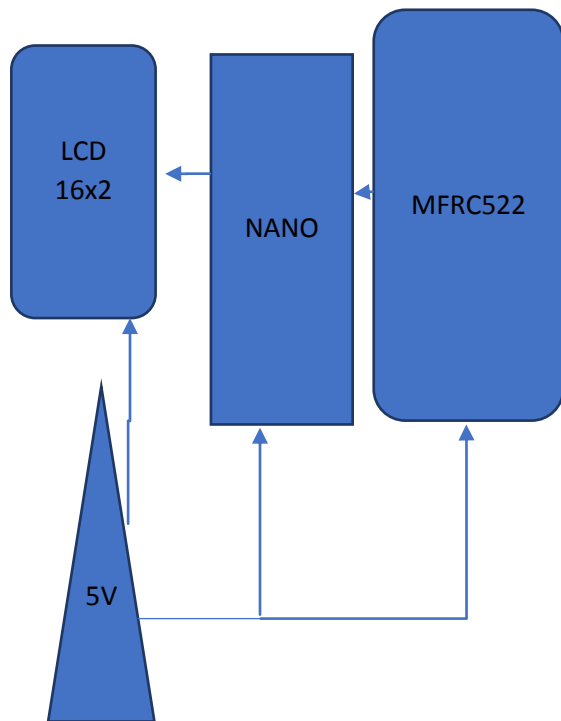


Figure 1: Block diagram of RFID based attendance system.

THE BLOCK DIAGRAM CONSISTS OF FOLLOWING BLOCKS:

AURDINO NANO

5V POWER SUPPLY

LCD 16X2

MFRC522 READER

The hidden component on the blocks are shown below:

BUZZER

RFID PROGRAMMED CARD

The 5v power supply is given to the Arduino NANO and it is given to the LCD Display and RFID Reader. When the programmed RFID card is placed on the MFRC522 Reader. It will scan the programmed card

and show the output at the LCD 16X2 Display. The LCD Display show the number of students presents or absents.

WORKING CONCEPT:

The Arduino is customized and interfaced with MFRC522 which is rfid peruser author and I2C LCD. The I2C LCD expends less number of gpios and gives simple association with a DISPLAY. The Controller is modified to show all information on LCD.

The Display is worked on I2C (Inter Integrated Circuit) which is a 2 Wire Serial interfaces empowering correspondence with more than one slave.

The MFRC522 is a Serial Peripheral Interface based RFID Module.

It can peruse the information from 1Kb rfid cards having recurrence of 13.56MHz. The regulator peruses the RFID's information a tiny bit at a time and saves its support.

OPERATION:

The Arduino is preloaded with a few enrolled UID's of the understudies and is standing by to be swiped. The second it recognizes the card the Arduino peruses the cards UID and stores in a variable. It at that point contrasts the UID and a rundown of predefined UIDS and locks its state showing if the individual understudy is available or out. The Total number of sections inside the Class are appeared as presentees. The implementation and circuit diagram is shown in figure 2.

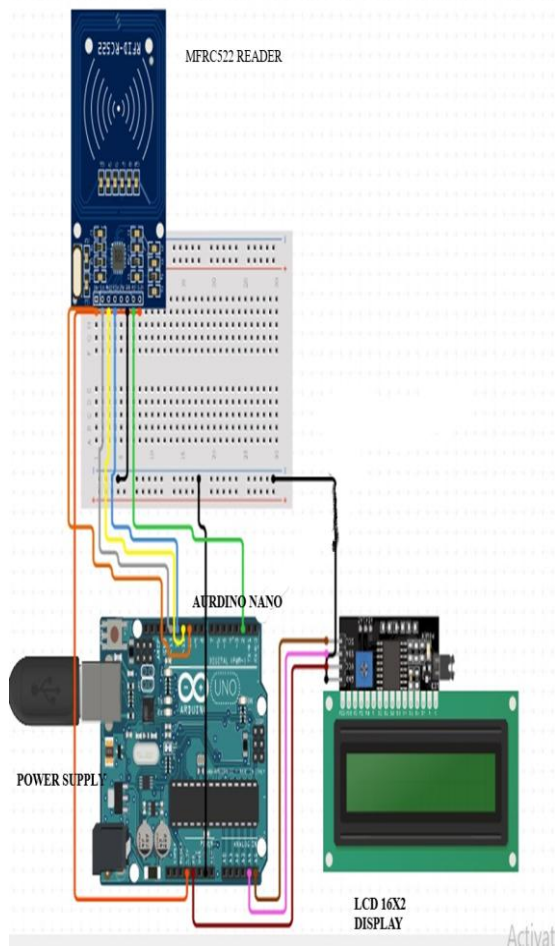
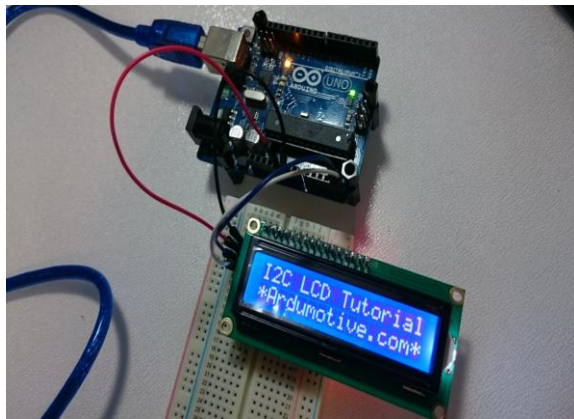


Figure 2: Connection diagram of automatic door lock system.

LCD DISPLAY:

A fluid precious stone showcase (LCD) is a level board show or other

electronically adjusted optical gadget that utilizes the light-tweaking properties of fluid gems joined with polarizers. Fluid precious stones don't emanate light straightforwardly, rather utilizing a backdrop illumination or reflector to deliver pictures in shading or monochrome[1]. LCDs are accessible to show discretionary pictures (as in a universally useful PC show) or fixed pictures with uninformed substance, which can be shown or covered up, for example, preset words, digits, and seven-fragment shows, as in an advanced clock. They utilize a similar essential innovation, then again, actually subjective pictures are produced using a grid of little pixels, while different presentations have bigger components. LCDs can either be regularly on (positive) or off (negative), contingent upon the polarizer game plan. For instance, a character positive LCD with a backdrop illumination will have dark lettering on a foundation that is the shade of the backdrop illumination, and a character negative LCD will have a dark foundation with the letters being of a similar shading as the backdrop illumination. Optical channels are included to white blue LCDs to give them their trademark appearance.

MFRC522 RFID READER:

RFID (Radio-Frequency Identification) is ordinarily utilized these days in security frameworks, for example, entryway locks. The MFRC522 RFID perusers accompanies a RFID's label card. The MFRC522 speaks with cards or labels up to 1cm utilizing a 13.56MHz electromagnetic field, at that point sends the

information to an Arduino board through SPI correspondence. The figure 3 shows an example of RFID reader.

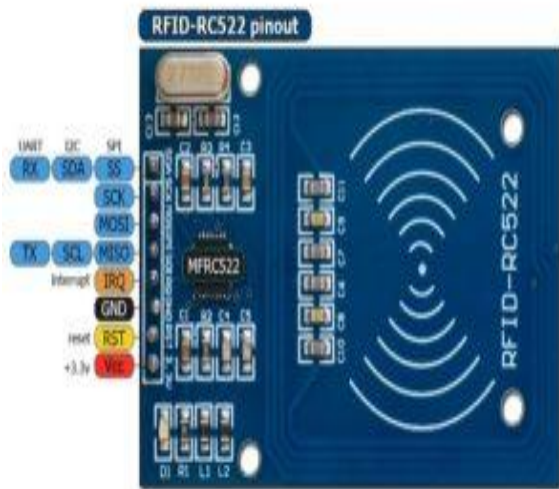


Figure 3: RFID reader.

This RFID reader module is based on the MFRC522 IC, a highly integrated read-write 13.56 MHz contactless RFID communication chip that allows you to easily add RFID communication capabilities to your new project.

BUZZER

A ringer or beeper is a sound flagging gadget, which might be mechanical, electromechanical, or piezoelectric. Ordinary employments of bells and beepers incorporate alert gadgets, clocks, and affirmation of client information, for example, a mouse snap or keystroke

At the point when current is applied to the signal it makes the fired plate contract or extend. Changing the This at that point causes the encompassing circle to vibrate. That is the sound that you hear. By changing the recurrence of the bell, the speed of the vibrations changes, which changes the pitch of the subsequent sound..

Working Principle of Magnetic Buzzers

The vibrating circle in an attractive ringer is pulled in to the post by the attractive field. At the point when a wavering sign is traveled through the loop, it delivers a fluctuating attractive field which vibrates the circle at a recurrence equivalent to that of the drive signal.

RFID MEANS:

Refers to an identification badge or credit card that transfers its contents to the reader via RFID. See RFID and RFID tag.

RFID tags transmit data about an item through radio waves to the antenna/reader combination. ... The energy activates the chip, which modulates the energy with the desired information, and then transmits a signal back toward the antenna/reader.

CONCLUSION:

This Project simplifies the Attendance tracking as it is a routine and the scope of the project further extends towards IoT where the students records on Attendance can be directly fed to the campus servers.



Author bibliography



E.Kalpana received her B.E (ECE) from Vellore Engineering College, (currently VIT) Vellore and got M.E (Applied Electronics) from Anna University, CEG, Chennai. At

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