

# Automatic Attendance Monitoring using RFID System

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**Abstract – Primary goal of this paper is to track the understudy in grounds and improve participation observing framework. The proposed framework comprises of RFID tag and per user. RFID per user would be introduced at different areas in grounds and furthermore in classes. At the point when understudy comes in the region of per user then area can be discovered which will send that area to server. A Student puts the RFID card in the RFID card Reader. The RFID card Reader peruses down the Understudy points of interest. The Interface programming is dependable to control the checking of participation in the product. The framework can likewise create detainment rundown of the understudies. It is small scale application which is totally robotized, simple to control, efficient and solid.**

## 1. INTRODUCTION

Presently there is progression in each circle of advancements. Web has created throughout the years and now it is a standout among the most effectively accessible product. Consequently understudies are getting all the favored things to float away from studies and attempt intends to stay away from schools and universities. Regardless of whether they go to the grounds they attempt to bunk the classes and accordingly the participation inadequacy happens and they attempt each wrong measures to alleviate the issue. So to maintain a strategic distance from these issues, this framework will track the understudy in the grounds when he will enter the class. On the off chance that understudy endeavor to bunk the address and his/her participation is beneath 75% at that point ready message will send to the guardians.

Framework utilizes RFID innovation to track the understudy. It is an innovation that transmits information utilizing radio waves from a RFID label appended to a card by the per user for following. It is checked and conveys data in a microchip. The per user recognizes labels inside recurrence and gives caution if any disaster happens. It will likewise inform if any

understudy is conveying two cards. The signal will go off the minute it detects any issue. This framework gives computerized way to deal with keep up the understudy participation. In proposed framework it is important to issuing RFID tag to every last understudy in the schools. The understudy need to simply swap their cards to the RFID reader. The intention is building up this framework is to track the understudy utilizing RFID label which will be given to the understudy. Due to this framework the recurrence of understudy bunking the addresses is diminished and guardians likewise guarantee about their child/little girls, so it is essential in schools and universities.

## 2. RELATED WORK

Numerous papers have been distributed and look into improved the situation Student Attendance Tracking framework in the current pasts. Elima Hussain , Priyanka Dugar , Vaskar Deka, Abdul Hannan [7] have built up a framework that gives information control and recovery through an interface which is easy to use. Their claim is that the framework is easy to understand and financially savvy and more modules can be added to enhance the framework or expand the framework. They clarify the customer side procedures as takes after "At whatever point any label goes into its area, at that point it sends electromagnetic waves to the tag. The label swells back the waves alongside the interesting distinguishing proof number. An instructor needs to affirm himself by marking into the system. If the response is sure, the educator is redirected to the 'take support' board where he needs to enter the subject name for which he needs to take interest. "

Another paper that we referenced has a place with, Arulogun. O. T., Olatunbosun, A. Fakolujo O.A, Olanyi O.M [3], they claim to have utilized the adaptability of RFID in the utilization of helpful and customized understudy course interest recording

system which would empower understudies to fill their investment just by moving their ID cards over the RFID per client which are arranged at the section of address passageways.

In a paper exhibited by Krenare R Pireva, Jeton Siqueca, Shkelqim Berisha [4], they have displayed a web application utilizing RFID innovation for going to understudy classes. Despite the fact that they express that there is an issue with respect to what sort of labels can be utilized, (strong labels or mark labels) sturdy labels can be perused regardless of whether the labels are in the pockets or sacks though in name labels one needs to put them on the highest point of the table while taking a seat cause if the understudies are standing up, it might meddle the per user while perusing the labels. The issue with respect to what sort of labels to be utilized is identified with cost in light of the fact that solid labels perhaps path costlier than ordinary mark labels.

Next set of papers studied is about the error corrections that can occur due to the medium being used by the infrared or due to other noise disturbances, one such paper by CHEN Shi-y, LI Yu-bai[8] named, 'Error Correcting Cyclic Redundancy Checks based on Confidence Declaration. The paper discusses about Cyclic Redundancy Checks and proceeds with Burst Error Correction and Random Error Correction.

Utilizing burst error correction, botch change is simply tried if most of the low assurance bits are inside a n-k-bit window. As demonstrated by cyclic typical for cyclic code, whatever remains of rehash. The achievement rate is to be characterized then we can state that if the bit and certainty assertion calculation has played out its capacity legitimately, at that point the system will undoubtedly distinguish mistake design yet since different burst blunder can't be resolved, the achievement rate is low.

Though random error correction is refined by supplementing the low certainty bits comparing to the set. This paper proposes consolidating the two mistake redress systems. Bit and certainty assertion is performed and CRC blunder statement is connected. In the event that the message is passed, at that point the procedure will end, assume if a mistake is distinguished, at that point an arbitrary amendment is done and afterward if the message is passed then the procedure closes. On the off chance that the limitation for arbitrary blunder redress isn't fulfilled at that point burst mistake remedy strategy is connected. These two strategies in this manner upgrade the mistake amendment capacity of cyclic excess check.

The second paper for examining mistake identification is by Shanshan Liu, Pedro Reviriego and Liyi Xiao [5], named 'Assessing Direct Analyze for Twofold Blunder Rectification Codes'. It tests the viability of the immediate think about procedure for information correlation against twofold mistake utilizing DEC BCH codes. The finish of the test demonstrated

an enormous preferred standpoint than when utilizing SEC-DED codes. The immediate think about plan utilizing BCH codes diminish the circuit are, postponement and power utilization. Subsequently, it is a fascinating alternative to ensure against two fold blunders.

### 3. PROPOSED MODELLING

The components used for this RFID project involves only hardware and there is no use of software. The only way any software is being used is in the form of a database management system which is accessible only by the faculties. The following are components used in the project.

- RFID reader
- RFID tag
- DBMS
- Buzzer
- 8051 series microprocessor (MAX232 IC)

#### 3.1. 8051 series microprocessor

The Max-232 IC is a combined circuit which includes 16 pins and it is a creative IC for the most part utilized as a bit of the voltage level standard issues. By and large, the Max-232 IC is utilized as a bit of the RS232 correspondence framework for the difference in voltage levels on TTL gadgets that are interfaced with the PC serial port and the Microcontroller. This IC is utilized as a hardware layer converter seize the opportunity to confer two structures at the same time. The Maximum 232 IC is utilized to trade the TTL/CMOS technique for thinking to RS232 legitimization levels through the serial correspondence of Microcontroller with the PCs.

The microcontroller works at the TTL reason levels with the voltage of 0-5v, and the serial correspondence with PC deals with the RS232 with the volts of - 25V to +25V. The refinement of voltage will change into the makes hard to build up the correspondence with each other. The in the midst of affiliations are given through the MAX232 interface, it is a transmitter/gatherer which combines the voltage generator to the supply of RS232 voltage levels through the 5V supply. The RS232 input fans to 5V TTL/COMS level through these beneficiaries, i.e. R1 and R2 don't deny the +-30V. The transmitters T1 and T2 are utilized to change over the TTL/COMS input levels to RS23level.

The transmitter gets commitment from the microcontrollers and chip through serial transmission pins and the yield is given to the authority of RS232. The recipient on the contrary side gets the commitment from transmission stick of RS232 serial port and the yield is given to the beneficiary stick of the microcontroller. The outside capacitor is added to the MAX232 with an extent of 1 $\mu$ F to 22 $\mu$ F.

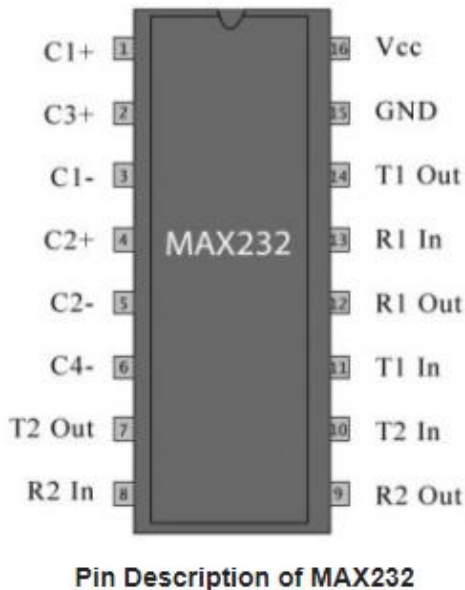


Fig:3.1

### 3.2. RFID reader and tag

RFID is an acronym for "radio-frequency identification" and insinuates an advancement whereby electronic data encoded in RFID marks or sharp names (portrayed beneath) are caught by a peruser by means of radio waves. RFID resembles barcoding in that data from a tag or stamp are gotten by a contraption that stores the data in a database. RFID, regardless, has a couple of purposes of enthusiasm over systems that utilization standardized identification resource following programming.

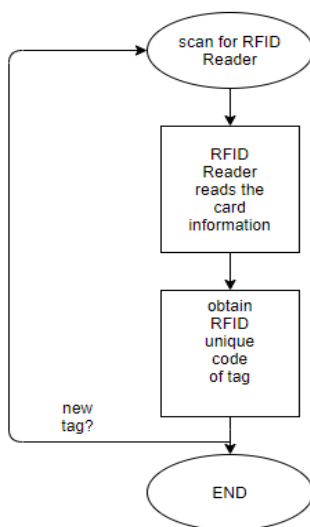


Fig:3.2

The most remarkable is that RFID label information can be perused outside the observable pathway, while standardized identifications must be lined up with an optical scanner.

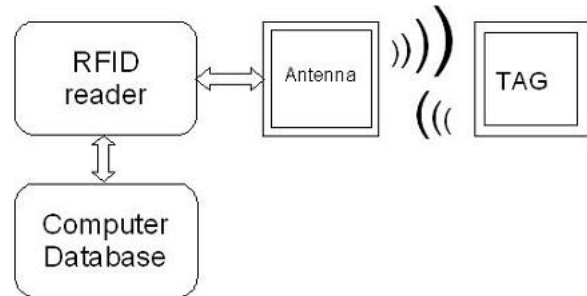


Fig:3.3

RFID frameworks can be ordered by the kind of tag and per user. A Passive Reader Active Tag (PRAT) framework has an uninvolved per user which just gets radio signs from dynamic labels (battery worked, transmit as it were). The gathering scope of a PRAT framework per user can be balanced from 1–2,000 feet (0– 600m), permitting adaptability in applications, for example, resource assurance and supervision.

An Active Reader Passive Tag (ARPT) framework has a dynamic per user, which transmits investigative specialist signals and furthermore gets validation answers from inactive labels.

An Active Reader Active Tag (ARAT) framework utilizes dynamic labels awoken with an investigative specialist motion from the dynamic per user. A variety of this framework could likewise utilize a Battery-Assisted Passive (BAP) label which acts like an aloof tag yet has a little battery to control the label's arrival detailing signal.

Repaired per users are set to make a particular cross examination zone which can be firmly controlled. This permits a very characterized perusing zone for when labels go all through the cross examination zone. Versatile per users might be hand-held or mounted on trucks or vehicles.

### 3.3 Buzzer and DBMS

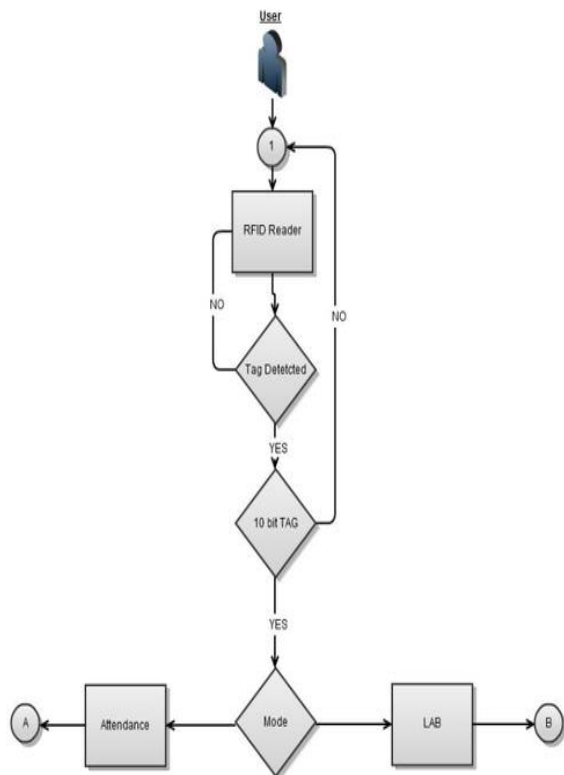
A buzzer would be utilized to show when a card is being perused and when any participation is given to an understudy. The DBMS is utilized to store the information for every one of the cards that have been perused and coordinate them with the current information so no disparity happens. As a kind of electronic ringer with facilitated structure, chimes, which are given by DC control, are for the most part used as a piece of PCs, printers, scanners, alerts, electronic toys, auto electronic contraptions, telephones, tickers and other electronic things for voice devices. Ringers can be arranged as powerful and dormant ones (see the going with picture). Turn the pins of two ringers gaze upward, and the one with a green circuit board is

an inactive flag, while the other encased with a dull tape is a dynamic one.



The distinction between a dynamic signal and a uninvolved bell is: A dynamic signal has a worked in swaying source, so it will make sounds when zapped. In any case, a detached ringer does not have such source, so it won't tweet if DC signals are utilized; rather, you have to utilize square waves whose recurrence is in the vicinity of 2K and 5K to drive it. The dynamic signal is frequently costlier than the uninvolved one as a result of different implicit swaying circuits. In this test, we utilize the dynamic signal.

#### 4. RESULTS AND DISCUSSIONS



The data flow describes the total flow of the implementation. So, the above flow diagram shows that the student tags are detected by the reader and when the tag is detected the execution goes further to check the 10 digit number and if the tag is not detected or the unique id is not detected the loop continues over there. After detecting student attendance is updated automatically.

#### 5. CONCLUSION

The RFID framework was effectively coordinated. The framework comprises of database frame. The framework performs collection of data from the tags which are read from the system and stores them in the database with the in time and out time of the student.

#### REFERENCES

- [1] Chitresh, S and Amit K (2010), "An efficient Automatic Attendance Using Fingerprint Verification Technique", International Journal on Computer Science and Engineering (IJCSE), Vol. 2 No. 2, pp 264-269.
- [2] Henry, S, S. Arivazhagan and L. Ganesan (2003), "Fingerprint Verification Using Wavelet Transform", International Conference on Computational Intelligence and Multimedia Applications, 2003.
- [3] Arulogun, O. T., Olatunbosun, A. Fakolujo O.A, Olanyi O.M (2013), "RFID-Based Students Attendance Management System" in International Journal of Scientific & Engineering Research Volume 4, Issue 2, February-2013
- [4] Krenare R Pireva, Jeton Siqeca, Shkelqim Berisha, (2013), "RFID: Management System for students' attendance" in 15th Workshop on International Stability, Technology, and Culture The International Federation of Automatic Control June 6-8, 2013. Prishtina, Kosovo
- [5] Shanshan Liu, Pedro Reviriego and Liyi Xiao (2016), "An Efficient Single and Double-Adjacent Error Correcting Parallel Decoder for the (24,12) Extended Golay Code" in IEEE Transactions on Very Large Scale Integration (VLSI) Systems ( Volume: 24, Issue: 4, April 2016 )
- [6] Mohamed A.B, Abdel-Hamid A and Mohammed K.Y., (2009), "Implementation of an Improved secure system detection for E passport by using EPC RFID tags", World Academy of Science, Engineering and Technology Journal, Volume 6, pp1-5.
- [7] Elima Hussain, Priyanka Dugar, Vaskar Deka, Abdul Hannan, (2014), "RFID based Student Attendance System" in International Journal of Computer Applications (IJCA) (0975 – 8887) National Conference cum Workshop on Bioinformatics and Computational Biology, NCWBCB- 2014
- [8] CHEN Shi-yi, LI Yu-bai (2006), "Error Correcting Cyclic Redundancy Checks based on Confidence Declaration", 2006 6th International Conference on ITS Telecommunications Proceedings.