



# International Conference on Advanced Computer Science & Software Engineering (ICACSSE)

December 3, 2016 - Hyderabad, India

Paper Published in IJMETMR, A Peer Reviewed Open Access

## RFID Based Attendance System

**Arjun Agalave**

UG Student,  
Department of CS,  
Dr.D.Y.Patil School  
of Engineering &  
Technology,  
Lohgaon, Pune.

**Akash Ghungare**

UG Student,  
Department of CS,  
Dr.D.Y.Patil School  
of Engineering &  
Technology,  
Lohgaon, Pune.

**Deepak Dongare**

UG Student,  
Department of CS,  
Dr.D.Y.Patil School of  
Engineering &  
Technology,  
Lohgaon, Pune.

**Aditya Pardeshi**

UG Student,  
Department of CS,  
Dr.D.Y.Patil School  
of Engineering &  
Technology,  
Lohgaon, Pune.

### Abstract:

India has numerous quantities of universities and instructing is one of the real exercises giving work to number of individuals who jump at the chance to offer information to the general population. Today numerous universities of rustic territory are confronting normal issue like bunking the school addresses likewise meet with the mishaps. Indian division of training emerges question to the office for their untrustworthiness. Education department likewise looks for records of the considerable number of understudies which are exceptionally hard to keep up. This portrays a model improvement of keep up the record of the considerable number of understudies titled RF-Id based Tracking and Attendance with GSM Module solely cooking the need of Indian instructors. RFID is one of remote innovation that can be utilized as a part of different divisions of human life like military, school, wear, wellbeing, industry, security, creature, and different territories. RFID for the most part comprise of two imperative parts, the reader (combination of antenna and transceiver) and the tag (comprise of special number). The utilization of extraordinary number inside the tag is extremely helpful as an identity of an object or as GPS device.

### Keywords:

RFID, GSM, ARM7, attendance system, IR sensor etc.

### I. INTRODUCTION:

A large number of Students used to bunk lectures and wander around with letting their folks educated. Due to such exercises an episode happened which may bring about an extreme mishap.

Subsequently it is important to make an arrangement to tell the guardians about what their tyke is doing in the school. Innovation is a constantly expanding angle. Since ages the innovation has been showing signs of improvement and better. Essentially the explanation for the improvement of the innovation is that understudies are attempting to improve life and less demanding. Truly, human-action following procedures have concentrated on direct perception of individuals and their manner with cameras, worn accelerometers, or contact switches. A late encouraging road is to supplement coordinate perception with an underhanded approach, surmising individuals' activities from their impact on the earth, particularly on the articles with which they interact.

It is key to put a push to stop the bunking the addresses of understudies. Also, acquire normality and train universities, schools, workplaces, and so on alongside an endeavor to spare time and keep up participation record of the understudies with having human endeavors. This project comprises of fundamental procedures to human movement identification: PCs conceive dynamic sensor reference points, and dormant RFID. Vision includes understood strength and versatility challenges. Dynamic sensor signals give correct protest distinguishing proof however require batteries making them strange for long haul insensitive organization. RFID tags have a similar protest recognizable proof precision as dynamic guides, with the advantage of being sans battery; be that as it may, unique sensor reference points, they can't distinguish movement.



# International Conference on Advanced Computer Science & Software Engineering (ICACSSE)

December 3, 2016 - Hyderabad, India

Paper Published in IJMETMR, A Peer Reviewed Open Access

The present Project can be utilized as a part of union with a robotized participation checking framework to screen participation of understudies or different people whose whereabouts should be followed. The candidate's robotized participation checking framework utilizes tags (worn or conveyed by understudies or different participants) and readers to screen the whereabouts of people. Consequently, for example, as understudies enter a classroom, the reception apparatus of a reader set on the roof of classroom would communicate with Radio Frequency Identification ("RFID") labels that are worn or conveyed by the understudies. The framework would then track which understudies have entered the classroom, and by contrasting the rundown of entering understudies and the class list, the framework could produce a temporary rundown of missing understudies and further the data can be sent to the guardians.

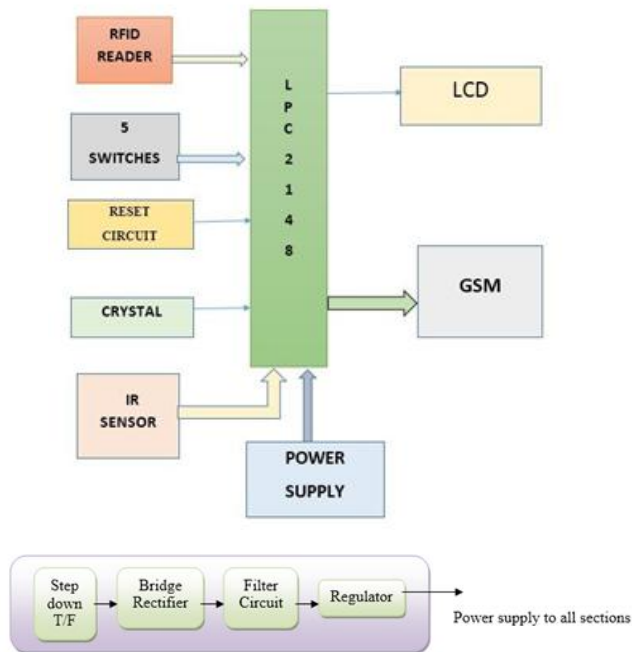
## II. LITERATURE REVIEW:

SAIKRISHNA CHATRAT et.al. [1] Says numerous schools of provincial zone are confronting basic issue like bunking the school addresses additionally meet with the mischances. Indian division of training emerges question to the office for their untrustworthiness. Training office likewise looks for records of the considerable number of understudies which are exceptionally hard to keep up. This portrays a model improvement of keep up the record of the considerable number of understudies titled RF-Id based Tracking and Attendance with GSM Module solely cooking the need of Indian educators. Dania Eridani, et.al.[2] proposes RFID is one of remote innovation that can be utilized as a part of different segments of human life like military, school, brandish, wellbeing, industry, security, creature, and different regions. RFID for the most part comprise of two essential parts, the reader (blend of handset and radio wire) and the tag (comprise of one of a kind unique number). The utilization of one of a kind number inside the tag is extremely valuable as a character of a protest or as GPS beacon. Julius Quarshie Azasoo, et.al. [3] Says the present procedures of gathering understudy's chaperon data are for the most part manual.

This exploration endeavors to propose a more proficient Information Communication Technology (ICT) based process. The proposed outline makes utilization of radio recurrence (RF) as a method for correspondence between the Attendant Management Data Server (AMDS) and the RFID Card Readers (RCR) arranged in the different classrooms or address corridors. The Student Attendant Management Information System (SAMIS) was planned and tried. The SAMIS gathers and oversees understudies participation records from RFID gadgets introduced in the address lobbies. Aamir Nizam Ansari et.al. [4] Explains the reason for this paper is to build up a remote framework to identify and keep up the participation of an understudy and find an understudy. For, this the understudies ID (recognizable proof) card is labeled with a Radio-recurrence ID (RFID) inactive label which is coordinated against the database and just finished once his unique mark is checked utilizing the biometric finger impression scanner. A man should be found should be possible by two implies that is by means of the site or by sending the move number of the understudy as a sms to the GSM modem which will answer by taking the last area put away of the understudy in the database.

Srivignesh Pss et.al. [5] Says the minimized and solid classroom participation framework utilizing RFID and face confirmation is displayed in this paper. The RFID framework distinguishes the understudy utilizing the RFID card and further character check of the understudy is done utilizing face acknowledgment method. RFID particularly recognizes the understudy in view of the card number, then an individual (Fast Adaptive Neural Network Classifier – FANNC) classifier is utilized to check the substance of every understudy solely. The framework is prepared and tried by leading examinations on FEI confront database. Every classifier is prepared utilizing face pictures of every understudy in seven distinctive head postures and it is tried against six unique stances. The execution of the framework is tried for frontal face confirmation, head posture fluctuated confront check and recognition of intermediary participation is completed.

### III. BLOCK DIAGRAM:



**Figure 3.1 Block diagram of system and regulated power supply (RPS):**

At the point when time switch pressed, counter instated and RFID reader initiated, RFID cards acknowledged till counter stop. At the point when counter stop, exhibit no are send through GSM as SMS. There are switches accommodated day time table (Monday to Friday), if switch 1 pressed like Monday, so LCD on and demonstrates Monday time table like Math-11:00, then clear LCD and show next lecture time table. IR demonstrate count on LCD. This venture utilizes regulated 5V, 500mA power supply. 7805 three terminal voltage regulator is utilized for voltage direction. Connect sort full wave rectifier is utilized to correct the AC output of secondary of 230/12V step down transformer.

### IV. HARDWARE AND SOFTWARE REQUIREMENT:

#### 4.1 HARDWARE REQUIREMENT:

- 4.1.1 MICROCONTROLLER ARM7 (LPC2148)
- 4.1.2 IR SENSOR
- 4.1.3 RFID READER
- 4.1.4 RFID TAG
- 4.1.5 GSM

- 4.1.6 12MHZ CRYSTAL
- 4.1.7 16X2 LCD
- 4.1.8 SWITCHES

#### 4.2 SOFTWARE REQUIREMENT

- 4.2.1 PROGRAMMING  
 LANGUAGES:- Embedded C
- 4.2.2 COMPILERS:- Keil 4.0uv
- 4.2.3 UMPING SOFTWARE:- Using Micro controller flash magic/ proload Software we are dumping our HEX Code into Micro Controller

#### A. MICROCONTROLLER: ARM7 (LPC2148):

The ARM architecture (already, the Advanced RISC Machine, and before that Acorn RISC Machine) is a 32-bit RISC processor architecture created by ARM Limited that is broadly utilized as a part of various installed plans. As a result of their energy saving elements, ARM CPUs are prevailing in the portable hardware showcase, where low power utilization is a basic outline objective Microcontroller is the heart of the framework. ARM7 is 32 bit microcontroller. Elite framework, with 32-bit guideline interface. The ARM7 take the caught picture from the camera and show it into the LCD. LPC2148 (ARM7) has 4 to 40 on chip static memory. A 128-piece wide memory interface and one of a kind quickening agent design empower 32-bit code execution at the greatest clock rate. Because of their minor size and low power utilization, LPC2141/2/4/6/8 are perfect for applications where scaling down is a key necessity, for example, get to control and purpose of-offer. On-chip coordinated oscillator works with an outside precious stone in range from 1 MHz to 30 MHz and with an outer oscillator up to 50 MHz. Control sparing modes incorporate idle and Power-down.

#### General Depiction:

A 128-bit wide memory interface and extraordinary quickening agent design empower 32-bit code execution at the most extreme clock rate. Serial correspondences interfaces running from a USB 2.0 Full-speed gadget, various UARTs, SPI, SSP to I2C-transport and on-chip SRAM of 8 kB up to 40 kB, make these gadgets extremely appropriate for

# International Conference on Advanced Computer Science & Software Engineering (ICACSSE)

December 3, 2016 - Hyderabad, India

Paper Published in IJMETMR, A Peer Reviewed Open Access

correspondence portals and convention converters, delicate modems, voice acknowledgment and low end imaging, giving both huge cushion size and high handling power. The LPC2141/42/44/46/48 microcontrollers depend on a 16-bit/32-bit ARM7TDMI-CPU with continuous imitating and installed follow bolster, that consolidate microcontroller with implanted fast glimmer memory going from 32 kB to 512 kB. Different 32-bit clocks, single or double 10-bit ADC(s), 10-bit DAC, PWM channels and 45 quick GPIO lines with up to nine edge or level touchy outer intrude on pins make these microcontrollers reasonable for modern control and therapeutic frameworks.

## Key Elements:

- On-chip Real Monitor programming and rapid following of guideline execution.
- USB 2.0 Full-speed agreeable gadget controller with 2 kB of endpoint RAM.
- In expansion, the LPC2146/48 gives 8 kB of on-chip RAM open to USB by DMA.
- 16-bit/32-bit ARM7TDMI-S microcontroller in a minor LQFP64 bundle.
- 128-piece wide interface/quicken agent empowers rapid 60 MHz operation.
- In-System Programming/In-Application Programming (ISP/IAP) through on-chip boot loader
- 8 kB to 40 kB of on-chip static RAM and 32 kB to 512 kB of on-chip streak memory.

## B. LCD(16X2):

LCD (Liquid Crystal Display) screen is an electronic display module and locate an extensive variety of utilizations. A 16x2 LCD show is exceptionally fundamental module and is regularly utilized as a part of different gadgets and circuits.

## C. GSM MODULE:

It utilized for sending SMS to guardians. A GSM Module deals with the AT-commands and these summons are utilized as a part of programming in visual rudiments.

A portion of the orders utilized as a part of the venture are as per the following. GSM/GPRS Modules are similar to modems, yet there's one contrast: A GSM/GPRS Modem is external gear, while the GSM/GPRS Module is a module that can be incorporated inside mechanical assembly. It is an inserted bit of equipment. A GSM modem is a remote modem that works with GSM systems. A remote modem acts like a Hayes perfect dial-up modem. The rule distinction between a standard Hayes modem and a GSM modem is that a Hayes modem sends and gets information through a settled phone line while a GSM modem sends and gets information through radio waves.

## D. IR SENSOR:

A passive infrared sensor (IR sensor) is an electronic sensor that measures infrared (IR) light transmitting from articles in its field of view. They are frequently utilized as a part of IR-based motion detection. IR Sensors work by utilizing a particular light sensor to recognize a select light wavelength in the Infra-Red (IR) spectrum range.

## Demonstration:

We are implemented this system on student shoes. We patch RFID tag on shoes to detect it on its authenticated RFID reader. When RFID in contact with RFID reader then attendance will get update in system. In existing system student update other student attendance using their RFID cards. We are overcome existing system using this new propose system. In propose system we are placing card on shoes of student so get uniqueness. So each student get unique card along with shoes. When student pass from the RFID reader then attendance get count.

## V.ADVANTAGES:

- Proxy attendance can be caught.
- Hard copy paper work of attendance sheets is reduced.
- Data can be store for long time.

# International Conference on Advanced Computer Science & Software Engineering (ICACSSE)

December 3, 2016 - Hyderabad, India

Paper Published in IJMETMR, A Peer Reviewed Open Access

## VI.APPLICATION:

- It is useful in Schools & Collages.
- This System is used in Organizations etc.

## VII.CONCLUSION AND FUTURE SCOPE:

The most proficient utilization of our venture is in schools and universities for which especially the venture is made. A similar thing can be connected in schools where there is additionally the issue participation. So also such sort of framework can utilize in workplaces where there is no time for participation of representatives. A wide range of establishments or association where participation is an imperative issues our venture can be utilized. Other than this the framework is having some united applications recorded beneath which can likewise be the place such sort of a framework can undoubtedly utilize:- Vehicle distinguishing proof; Personnel recognizable proof; Access control; Building security; Asset administration; Warehouse administration; Mines ; Production and Process Control ; Inventory Tracking and Hospitals. Additional checking framework can be utilized so that frameworks of work place can be observed. The database of understudy's imprints, participation, improvement, and so on can be put something aside to review and can likewise be overhauled. The guardians must have the capacity to see their kid's record on their desire just by sending SMS.

## REFERENCES:

- [1] Krisha, Chatrati Sai, Naidu Sumanth, and C. Raghava Prasad. "RFID based student monitoring and attendance tracking system." Computing, Communications and Networking Technologies (ICCCNT), 2013 Fourth International Conference on. IEEE, 2013.
- [2] Eridani, Dania, and Eko Didik Widianto. "Simulation of attendance application on campus based on RFID (radio frequency identification)." 2015 2nd International Conference on Information Technology, Computer, and Electrical Engineering (ICITACEE). IEEE, 2015.
- [3] Azasoo, Julius Quarshie, Felicia Engmann, and Kafui Ayite Hillah. "Design of RF based multithreaded RFID student attendance management information system." 2014 IEEE 6th International Conference on Adaptive Science & Technology (ICAST). IEEE, 2014.
- [4] Ansari, Aamir Nizam, et al. "Automation of attendance system using RFID, biometrics, GSM Modem with. Net framework." Multimedia Technology (ICMT), 2011 International Conference on. IEEE, 2011.
- [5] Pss, Srivignesh, and M. Bhaskar. "RFID and pose invariant face verification based automated classroom attendance system." Microelectronics, Computing and Communications (MicroCom), 2016 International Conference on. IEEE, 2016.
- [6] Bjelica, Ognjen, and Danijel Mijic. "Hardware design of a reader device in RFID-based class-attendance system." Telecommunications Forum (TELFOR), 2012 20th. IEEE, 2012.
- [7] Shirehjini, Ali Asghar Nazari "Equipment Location in Hospitals Using RFID-Based Positioning System", Information Technology IEEE – 31661 4th ICCCNT 2013 July 4-6, 2013, Tiruchengode, India in Biomedicine, IEEE Transactions on Volume: 16, Issue 6 ,Nov 2012.
- [8] Maréa Dolores ; Penichet, Víctor M Ruiz, "Tracking autonomous entities using rfid technology", Consumer Electronics, IEEE Transactions on Volume: 55 , Issue: 2 ,2009.
- [9] Saad, S.S. ; Nakad, Zahi S.' A Standalone RFID Indoor Positioning System Using Passive Tags", Industrial Electronics, IEEE Transactions on Volume: 58 , Issue: 5 ,2011.