ISSN No: - 2456 – 2165

Attendance Control System Based on RFID-Technology

T. Udaybhasker Reddy (B.E), Dr.P.C.Kishore Raja, T. Bhanuprakash Reddy (M.E)(VIT)
(Saveetha School of Engineering, Saveetha University)

Abstract:- In Kazakhstan, checking understudies' participation is one of the essential issues for colleges, since numerous colleges assess understudies' participation keeping in mind giving the last grade, educators consider their aggregate number of appearances on classes amid the entire semester. This conveys to having some apparatus to control understudies' participation. A few colleges like to utilize paper sheet for controlling participation, though a few colleges like to utilize paper sheet for checking understudies' participation and after this, round out these data into a framework physically, similar to Kazakh-British Technical University does. Notwithstanding, this is not a proficient path since there will be invested quite a bit of energy for calling understudies names and putting marks like "vicinity" or "nonattendance" if the class is an address class, and in this class no less than 5 gatherings are introduced. Additionally, a few understudies might call his/her companion as "vicinity" despite the fact that this understudy is as of now missing. In the wake of deduction every one of these issues, creators of the accompanying exploration paper chose to make a framework that makes less demanding to check understudies' participation naturally, and this framework is actualized in Suleyman Demirel University, Kazakhstan. Really, this is the first run through when such sort of framework is being utilized as a part of instructive arrangement of Kazakhstan. The framework depends on RFID innovation, and in this paper, points of interest of this framework are displayed. Catchphrases: RFID: Radio Frequency Identification; RFID-label; RFID-peruse; participation control framework.

I. INTRODUCTION

Radio-recurrence identification (RFID) is an innovation that uses radio waves to exchange information from an electronic tag – called a RFID tag or name, which is connected to an item – through a peruser with the end goal of distinguishing and following the article. Some RFID labels can be perused from a few meters away and past the viewable pathway of the peruser. RFID frameworks have been broadly utilized as a part of a wide range of utilization territories, for example, item following through assembling furthermore, assembling , control of stock, ceasing part get to and control, compartment following, ID identifications and access control, hardware following in healing facilities, etc[1]. Contrasted with other programmed distinguishing proof advances, for example, optical standardized identification frameworks, RFID-innovation has a few favorable circumstances. Label information can be perused naturally past the viewable pathway, however certain materials, and from a scope of a few meters.

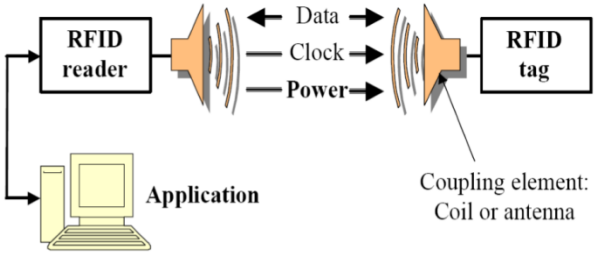

Fig. 1 The work flow of RFID Technology.

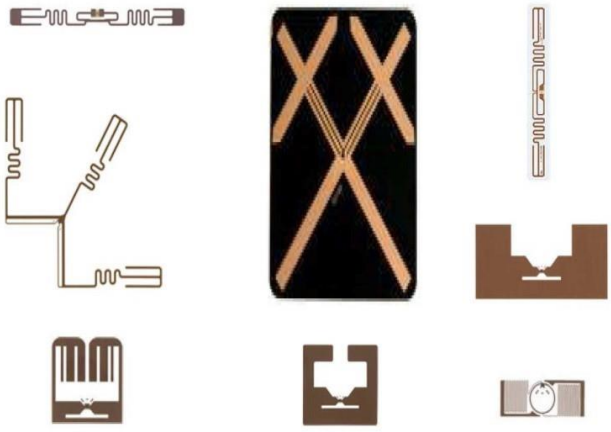

Fig. 2 Types of RFID Tags.

A RFID tag ought to be picked by proposed use. A few frequencies are accessible, including LF, HF, UHF, and microwave. The frequencies might change contingent upon the nation in which the RFID tag is being utilized. In [3], RFID-innovation was utilized as a programmed screen of understudy classroom participation. Joining the design and model of a

ISSN No: - 2456 – 2165

RFID framework transmitted over Ethernet, it exhibited how to mechanize a whole student-attendance enrolment framework inside of an instructive foundation. In [4], creators proposed diverse perspective for participation checking framework. They planned and executed remote iris acknowledgment participation administration framework. In any case, checking more than 70 understudies in light of their iris example is time-consuming, and fundamentally costly, and for colleges this is not the best decision. Frameworks taking into account iris acknowledgment are utilized as a part of numerous zones, for example, access control for high security establishments, Visa use check, and worker distinguishing proof [5]. The explanation behind the prevalence of iris acknowledgment checking is the uniqueness, solidness, permanency and effectively taking, and in light of this, there are a few iris acknowledgment confirmation approaches that have been proposed till now [6]. In addition, the likelihood of discovering two individuals with indistinguishable iris example is very nearly zero [7], so it demonstrates that for security side utilizing iris acknowledgment is flawless one; however the expense is a lot for any establishment to assemble participation checking framework. Additionally, there was some examination work done [8] in Europe, in which creators proposed participation administration framework stretched out with PC vision calculations. They utilized ongoing face discovery calculations coordinated on a current Learning Management System (LMS), which consequently recognizes and enlists understudy going to on an address. Our framework depended on a MIFARE RFID-tag, particularly, the MIFARE MF1ICS50 wrote RFID-tag. This kind of tag was created by NXP to be utilized as a part of a contactless savvy card as per ISO/IEC 14443 Type A. The MIFARE MF1ICS50 IC is utilized as a part of such applications as open transportation ticketing, which real urban communities of the world have embraced as their e-ticketing arrangement. The MF1ICS50 chip comprises of a 1 K-byte EEPROM, a RF-Interface and a Digital Control Unit. Vitality and information are exchanged by means of a radio wire involving a loop with a couple turns straightforwardly associated with the MF1ICS50 [9].As RFID-reader, EHUOYAN's YHU638 was used due to its cheapness and ease of use. This reader enables the contact-free reading and writing of operations and works on a 13.56 MHz frequency [10].

A. Motivation

In most universities, teachers take attendance by calling out the names and surnames of students, and then marking them, while, in others, teachers pass around a sheet of paper, asking students to sign in attendance sheet just next to their surnames. Both practices have their drawbacks. In the first case, if numerous groups attend the lesson, checking all of these students by name and surname might take about 10 minutes out of each lesson; in the second case, friends of absent students may write down their names and surnames. These practices place college instructors and their organizations at significant weaknesses with regards to taking participation.

To amend these deliberate failings, we have chosen to put the RFID-card into administration. Every card has a one of a kind ID, blocking the duplication of a card. These RFID-cards are given to understudies of Suleyman Demirel University, keeping in mind entering classrooms, RFID perusers will read these cards, recognize the understudies from their particular RFID-cards and send the information to a PC. The PC, thus, sends all the information it has gathered to the server before the end of lesson, or toward the end of this day as per the inclination of instructor. This implies no class the truth will surface eventually squandered.

B. System Architecture

Our point is to make a framework with one server to which all PC's are associated, so all information will be spared in one information base, making the checking of the data easy. All classes must have a PC with an associated RFID-peruser that can read understudy RFID-cards, and additionally a Webcamera that can take their photographs. The camera is intended to keep an understudy from giving his/her RFID-card to a colleague who goes to the address, checking the other understudy's RFID-card to make it show up as though s/he had likewise gone to.

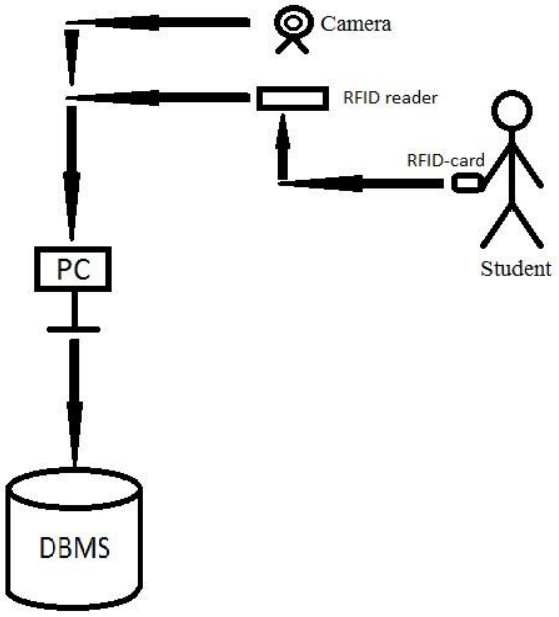

Fig. 3 Architecture of Attendance-Control System.

When a student enters class, the RFID reader reads his/her student ID card, while the Web-camera simultaneously takes

ISSN No: - 2456 – 2165

his/her photo and sends it to the PC. After some time, the professor submits all data for storage in a database.

C. Implementation

When the professor arrives in class, he/she logs in and submits a password on the PC to our system, after which our system opens his/her page (See Fig. 4).

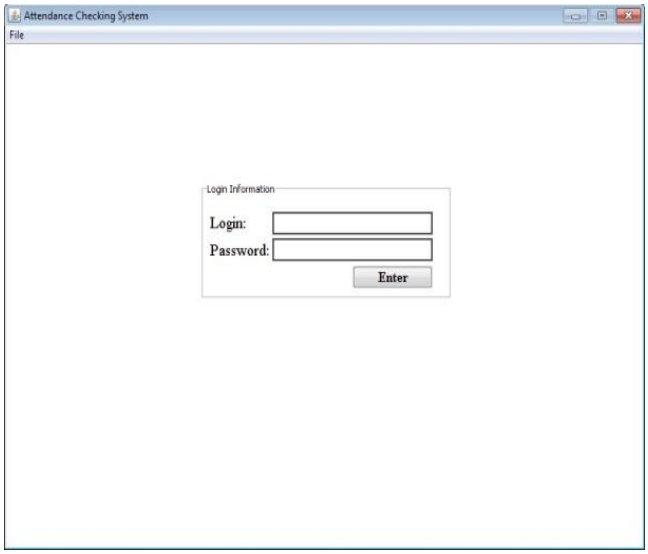

Fig. 4 The Main Page.

Fig. 5 Student Information.

At the point when understudies enter the classroom, the RFID-peruse consequently peruses their RFID-cards(See Fig. 5) and the Web camera takes their photographs. These photographs and ID's are sent to the PC, where framework will contrast their data and data put away on the DBMS as indicated by their ID's that we have appointed to them. In the end, the teacher will present all the data gathered, and the DBMS will have a record of who came and who neglected to come to class on any given day.

Teachers will have the capacity to utilize their extra time to analyze the photographs of understudies who came to lessons with those in the Database, so taking participation will no more gobble up lesson time. Utilization of RFID-cards, then, might take care of participation taking issues and all related issues.

II. CONCLUSION AND FUTURE WORK.

The authors we have consulted in our research have shown how a system relying on RFID- technology may be developed. This system is flexible, which means that it may be reached out by including more modules. The cards that have been utilized for this particular framework are RFID-cards, and the calculation utilized has indicated steady and dependable results; in addition, this calculation has secured imperative information that we have put away on these cards. These cards can be put to use at the college and might supplant understudy ID cards. As illustrated, staff and understudies, alike, can utilize these cards for some reasons; extra capacities can simply be fused into the framework and more prominent security gave to the cards. RFID-innovation keeps on creating, and the time has sought us to profit ourselves of its guarantee and accommodation. The principle point of this examination has been to show potential employments of RFID-innovation and fabricate a framework dependent on it.

For the future work, this examination ought to be stretched out by including more modules and rolling out a few redesigns or improvements. We want to include some new modules, similar to "Library framework", "Control of entryways", "Instalment framework", "and Parking garage framework", et cetera. There was exploration done in [11], which demonstrated to manufacture and execute Library Management framework taking into account RFID.

All the while, different cards ought to be checked and be supplanted, in light of the fact that cards which were utilized for this exploration appeared to be secure less, and new cards ought to have enough memory estimate with the goal that we can keep more information within them. Moreover, the likelihood of utilizing some extra apparatuses like GPS, GSM thus on is considered, and the undertaking for executing such a framework is begun. We plan to utilize GPS and GSM

ISSN No: - 2456 – 2165

advances in instructive framework, and the work that was done in [12] is a drive for this task usage.

REFERENCES

[1]. K. Domdouzis, B. Kumar, and C. Anumba, "RadioFrequency Identification (RFID) applications: A brief introduction.", Advanced Engineering Informatics, Vol. 21, 2007, pp 350-355.
[2]. S. A. Weis, S. E. Sarma, R. L. Rivest, and D. W. Engels, "Security and Privacy Aspects of Low-Cost Radio Frequency Identification Systems." Security in Pervasive Computing, 2003, pp 201-212.
[3]. F. Silva, V. Filipe, A. Pereira, "Automatic control of students' attendance in classrooms using RFID", in 3rd International Conference on Systems and Networks Communication, 2008, pp 384-389.
[4]. S.Kadry and M.Smaili, "Wireless attendance management system based on iris recognition", Scientific Research and Essays, Vol. 5(12), 18 June 2010, pp. 1428-1435. [5] B. Medien