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RFID Based Staff Finder System in Real Time (IOT)

Mr K Gopinath[1], B Mukesh[2], SK Sharan[3], S SuryaPrakash[4]

Professor[1], UG Scholars[2,3,4]

Department of Computer Science and Engineering

Panimalar Institute of Technology, Chennai, Tamil Nadu, India

gopi.ap.cse@gmail.com[1], b.mukesh16@gmail.com[2], sharandhoni2526@gmail.com[3], surya151096@gmail.com[4]

ABSTRACT

This project is about displaying the current or most recent location of the particular staff inside the institution. This is implemented by using Radio Frequency Identification [RFID] tags. In addition to this, Attendance and salary details of a particular staff is also monitored which will be done as an enhancement. This project is based on the domain Internet of Things[IOT]. In the existing system, the infrared was used and in the proposed system, Radio Frequency Identification [RFID] tags are used.

RELATED WORK

The proposed system consists of a number of RFID readers installed at all possible entrances of a large institution and a server application on a system to collect and process the information sent from all the readers. All the RFID readers send information received from the participants' identifiers (tags) as well as their locations to the server. The server's task is to collect and process the information, display all data via the webpage in real time and store the data into the MS Excel database for further analysis.

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LITERATURE SURVEY:

TITLE	ISSUED	ADVANTAGES	DISADVANTAGES	TECHNIQUES USED
1. RFID-Based Vehicle Monitoring System	Edward B. Panganiban , Jennifer C. Dela Cruz School of EECE, Mapua University,2017 IEEE	It provides a database for all registered vehicles using 13.56 MHz RFID module. It addresses security constraints In terms of the functionality, usability, and reliability through several tests. Arduino camera module captures vehicle images. RFID-Based Vehicle Monitoring has satisfied its functional requirements by providing its user-desired functions and specifications test. The system was also perceived to be functional, usable, and reliable	If camera doesnot work the system cannot capture the vehicle images.	• 13.56 MHz RFID module • SIM900A GSM module • Tower Pro MG966R Servo Motor • Integrated HC SR04 ultrasonic sensor • Integrated Arduino camera module

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2. Advancement of Traffic Management System using RFID	Antriksh Saini,ICE Division,Netaji Subhas Institute of Technology, New Delhi 2017 IEEE	The hardware is capable of tracking each registered vehicle in Delhi crossing at the junctions, which contains an RFID tag. The system of hardware, if installed, can record real-time traffic density to a degree, which is not yet achieved by Google Maps. It can replace the fixed timing circuits at traffic signal junctions with adaptive timing circuit, which keeps changing the time limit of the red lights as per the traffic density of the road. The system can reduce traffic jams in Delhi by monitoring the real-time traffic density and use the data to divide and distribute the traffic to alternate paths, thus preventing the traffic jams. As a result, people will be able to commute at a faster rate, thereby reducing fuel wastage and emissions.	Installation and maintenance of the hardware on such a large scale would not only require high capital but dedicated human resources as well. In addition, since the system involves gathering information without the consent of commuters, it can leave people with privacy issues and much other insecurity.	• Radio-Frequency Identification (RFID)

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3. Collision Detection and Signal Recovery for UHF RFID Systems	Xi Tan, He Wang, Lingzhi Fu, Junyu Wang, Hao Min, and Daniel W. Engels, 2016	With our novel collision detection and signal recovery anti-collision algorithm, the RFID reader can retrieve multiple valid communications from each collided slot in a DFSA-based anti-collision protocol, while our algorithm allocates an optimal number of slots resulting in more collided but recoverable slots and fewer empty slots. Our algorithm achieves a nearly 100% throughput improvement with an expected throughput of 0.85 compared with an expected throughput of 0.426 for a standard DFSA algorithm. Anti-collision algorithms are used to ensure successful RFID tag communications due to the likelihood of multiple tags being in the field and attempting to communicate simultaneously. Our algorithm achieves a nearly 100% throughput improvement with an expected throughput of 0.85 compared with an expected throughput of 0.426 for a standard DFSA algorithm.	The disadvantages are throughput still quite low. There is either no collision or a complete collision	• ultrahigh-frequency (UHF) radio-frequency identification (RFID) systems. • Passive UHF RFID • Anti-collision algorithms • dynamic frame • slotted Aloha (DFSA) algorithm.

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4. An Agent-Based Event Processing Middleware for Sensor Networks and RFID Systems	Distributed Systems and Information Systems, Computer Science Department, University of Hamburg, Vogt-Koelln- Strasse 30, 22527 Hamburg, Germany ∗Corresponding author: bade@informatik.uni-hamburg.de Received 24 July 2009; revised 24 July 2009	This middleware will meet the challenges for having a robust, adaptable and flexible middleware, which is, moreover, easily extensible to cope with expected re-engineering's and changes while maintaining a clear and elaborate design. the addressed technologies are still very young; best practices as well as standards are expected to frequently change, as new demands arise when using the technologies in everyday life. Because of this, middleware systems are expected to undergo frequent redesigns as well, requiring well-suited design paradigms to avoid a software engineering nightmare.	A lot of research efforts have been spent to develop standards, middleware and applications. The industry has already made large investments to foster the adoption of these technologies, consequently pushing the development, and already deploying the resulting technologies in different domains and thus resulting in huge loss of the investment Middleware systems are expected to undergo frequent redesigns as well, requiring well-suited design paradigms to avoid a software engineering nightmare.	• Radio-Frequency Identification (RFID)

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5. Web-based Student Attendance System using RFID Technology	Murizah Kassim, Hasbullah Mazlan, Norliza Zaini, Muhammad Khidhir Salleh Faculty of Electrical Engineering Universiti Teknologi MARA 40450 ShahAlam, Selangor,Malaysia murizah@salam.uitm.edu.my, hasbullahmazlan@gmail.com, drnorliza@salam.uitm.edu.my, khidhir193@gmail.com,2012 IEEE	Makes the process of marking the attendance simpler and more efficient The data is stored securely and can be used easily . Handling large amounts of data becomes more simpler and reduces the human effort This process of using web based systems eliminates the common errors that are made by the humans.	Lecturers with a large class may find the hassle of having the attendance sheet being passed around the class and the manual signing of attendance by students are burdensome and most likely distract them from teaching and getting full attention from the students Disadvantage is that it leads to a student missing out their name, while the latter leads to a false attendance record. Another issue of having the attendance record in a hardcopy form is that a lecturer may lose the attendance sheet.	• Radio-Frequency Identification (RFID) • Internet Of Things
6. Gatsheni, B.N., R.B. Kuriakose, and F. Aghdasi. Automating a student class attendance register using radio frequency Identification.	In Mechatronics, ICM2007 4th IEEE International Conference on. 2007.	Information from a student's ID card is electronically collected automatically from either a bag or pocket when the student enters the classroom and then entered into a register. We have automated the class attendance register using radio frequency identification technology in combination with internet hotspot. By this the process of attendance management becomes more simple and more efficient.	Attendance of a particular student can be easily faked by another student. Disadvantage is that it leads to a student missing out their name, while the latter leads to a false attendance record.	• radio frequency identification technology in combination with internet hotspot.

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7. Tokiwa, Y., K. Nonobe, and M. Iwatsuki. Web-based tools to sustain the motivation of students in distance education.	In Frontiers in Education Conference, 2009. FIE '09. 39th IEEE. 2009.	On the teacher's PC, the eRoster can display not only the student's name but also the student's attributes such as the id, future career, interest, club, faculty, and entrance time. The tool for students is a so-called clicker and enables students to be more completely engaged in the interactivity of active learning. The developed system facilitates individually owned multi-devices of the students like PCs, cell phones, iPod Touches, and other PDAs as data entry systems.	In distance education, students in a remote classroom tend not to sustain their motivation, mainly because of a lack of intensity due to non-physical presence of a lecturer.	• eRoster. • clicker
8. He, Z. and J. Zheng. Design and Implementation of Student Attendance Management System Based on MVC.	In management and Service Science, 2009. MASS '09. International Conference on. 2009.	Many macros were defined to unify the style of system pages, reuse of code duplication and improve efficiency A light weight tool called " Spring Ioc Container " is used to manage "Service"in the business logical layer. The system has been preliminary run in campus by testing and debugging. The result indicates that the direction of this technology study is correct and the design of this program is essential.	Disadvantage is that it leads to a student missing out their name, while the latter leads to a false attendance record.	• Default interceptors and interceptors • Technology of FreeMarker in the performance.

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9. Lim, T.S., S.C. Sim, and M.M. Mansor. RFID based attendance system.	Applications, 2009. ISIEA 2009. IEEE Symposium on. 2009.	This system can be used to take attendance for student in school, college, and university. Its ability to uniquely identify each person based on their RFID tag type of ID card make the process of taking the attendance easier, faster and secure as compared to conventional method. With real time clock capability of the system, attendance taken will be more accurate since the time for the attendance taken will be recorded. Students or workers only need to place their ID card on the reader and their attendance will be taken immediately. With real time clock capability of the system, attendance taken will be more accurate since the time for the attendance taken will be recorded. It also can be used to take attendance for workers in working places.	Students or workers only need to place their ID card on the reader without which there can be no attendance Truancies can affect student overall academic performance. The conventional method of taking attendance by calling names or signing on paper is very time consuming and insecure, hence inefficient.	• RS232 or Universal Serial Bus (USB) port • HyperTerminal software.44

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10. Kassim, M., C.K.H.C.K. Yahaya, and M.N. Ismail. A prototype Of Web Based Temperature Monitoring system.	In 2010 2nd International Conference on Education Technology and Computer (ICETC),. 2010. Shanghai, China.	It is to produce the model that allows the user to design continuously for monitoring temperature condition of a room while the data can be monitored anytime and anywhere from the Internet. As a conclusion, Web Based Temperature monitoring model then will be used and real system will be design in future project. This study is considered successful and preparation for the hardware and software for the development process of the real web based monitoring temp-erature is on the run.	Most of the implementations include very complex architecture, broad areas of interest and various programming computing processes.	• Web based temperature monitoring

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11. Yahaya, C.K.H.C.K., M.N. Ismail, and M. Kassim. A study on automated, speech and remote temperature monitoring for modeling Web based temperature monitoring system.	In 2010 2nd international Conference I on Education Technology and Computer (ICETC). 2010. Shanghai, China.	It evaluates the current model, hardware and software development architecture for the temperature monitoring is important to build new architecture and designing model of a new system. In addition, most of the previous implementations include very complex architecture, broad areas of interest and various programming computing processes. This research was to study the comparison of speechtemperature; automated and remote temperature monitoring that is similar to WEB monitoring system. It is to produce the model that allows the user to design continuously for monitoringtemperature condition of a room while the data can be monitored anytime and anywhere from the Internet. Web-Based Temperature monitoring model then will be used and real system will be design in future project and is considered successful.	Most of the implementations include very complex architecture, broad areas of interest and various programming computing processes.	• Web based temperature monitoring • Radio-Frequency Identification (RFID)

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12.Sulaiman, N.A. and M. Kassim. Developing a customized software engineering testing for Shared Banking Services (SBS) System.	In 2011 IEEE International Conference on System Engineering and Technology, ICSET 2011. 2011. UiTM, Shah Alam, Malaysia	A step-by- step sequence of activities and tasks for performing software testing at any level	Testing should be done at each phase so that it takes lot of time to execute.	Radio-Frequency Identification (RFID)
13.Sulaiman, N.A., M. Kassim, and S. Saaidin. Systematic Test and Evaluation Process (STEP) approach on Shared Banking Services (SBS) System identification.	In 2010 2nd International Conference on Education Technology and Computer (ICETC). 2010. Shanghai, China**.**	The approach using STEP provides a model process and a step-by- step sequence of activities and tasks for performing software testing at any level from unit testing through acceptance testing.	Testing should be done at each phase so that it takes lot of time to execute.	• STEP

CONCLUSION

Thus, it presents a state-of-the-art of arduino and rfid is used to track and locate the staff finder system easier. By the combination of these devices it is easy to track the staff with a alert message on the webpage. This system will be useful for all the staff and students to locate the staff by knowing the location of the staff through website. This can help the users to get the location of the staff . From this survey, it is evident that the accuracy of the staff locating will increase.

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FUTURE WORK

As a response, erasure coding as an alternative to backup has emerged as a method of protecting against drive failure.Raid just does not cut it in the age of high-capacity HDDs. The larger a disk's capacity, the greater the chance of bit error.And when a disk fails, the Raid rebuild process begins, during which there is no protection against a second (or third) mechanism failure. So not only has the risk of failure during normal operation grown with capacity, it is much higher during Raid rebuild, too. Also, rebuild times were once measured in minutes or hours, but disk transfer rates have not kept pace with the rate of disk capacity expansion, so large Raid rebuilds can now take days or even longer.

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5. H. Wegleiter, B. Schweighofer, *et al.* (2011). "Automatic Antenna Tuning Unit to Improve RFID System Performance." IEEE Trans.on Instrumentation & Measurement, 60 pp.2797-2803.

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