



IJIRCCCE

e-ISSN: 2320-9801 | p-ISSN: 2320-9798



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

Volume 12, Issue 5, May 2024

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.379



9940 572 462



6381 907 438



ijircce@gmail.com



www.ijircce.com

Employee Registration using RFID TAG

Sajay Suresh K

P.G. Student, Department of Computer Application, Mount Zion College of Engineering, Kadamannitta, Kerala, India

ABSTRACT: Employee Registration using RFID tags simplifies attendance tracking in educational institutions such as schools, colleges, or universities. Instead of cumbersome manual processes, this system utilizes RFID technology for efficient attendance management. Employees can easily mark their presence by scanning their RFID tags on a reader, streamlining the attendance recording process. With its simplicity and accuracy, RFID-based attendance systems offer an effective solution for managing employee attendance in educational settings

KEYWORDS: Employee Registration, RFID Tags, Attendance Management, Educational Institutions, Efficiency, Accuracy, Automation

I. INTRODUCTION

The Internet of Things (IoT) revolutionizes connectivity by linking physical objects equipped with sensors, software, and technology to exchange data over the internet. Employee Registration/Attendance Systems are pivotal in various sectors like IT, medical, and government, enabling administrators to monitor workforce activities. Traditional registration methods pose challenges, especially with large workforces.

Employing RFID tags streamlines this process, reducing administrative burden. RFID technology facilitates data exchange between tags and readers using radio waves, enhancing accuracy and efficiency. RFID tags consist of antennas and integrated circuits, while RFID readers collect information from tags, enabling individual tracking.

IoT, a key component, enables seamless data exchange among interconnected devices and systems. NodeMCU, an open-source firmware, supports IoT development with its prototyping board designs and Lua scripting language. Leveraging these technologies, Employee Registration using RFID tags offers a modern, efficient solution for workforce management.

II. RELATED WORK

1. "RFID-based Employee Attendance System Using Arduino" by K. N. Chepuru, M. V. D. Prasad, and G. Anjaneyulu. This paper presents an RFID-based attendance system developed using Arduino microcontrollers, offering insights into the implementation of RFID technology for employee attendance tracking.
2. "Automated Employee Attendance System Using RFID with Real-time Notification" by K. K. Jamir and S. Jamatia. This study explores an automated employee attendance system using RFID technology, coupled with real-time notifications to administrators, contributing to enhanced efficiency in attendance management.
3. "A Review of RFID Technology and Its Applications" by S. P. Pillai and P. O. David. This review paper provides an overview of RFID technology, its principles, and applications across various domains, offering valuable insights into the potential use cases and benefits of RFID in attendance systems.
4. "Internet of Things (IoT) Based Smart Attendance System Using RFID" by S. R. Khan and S. V. Deore. This research paper discusses an IoT-based smart attendance system utilizing RFID technology, highlighting the integration of IoT principles for enhanced functionality and real-time data access.

III. METHODOLOGY

The development of an RFID-based employee registration and attendance system begins with a comprehensive analysis of the existing processes within the organization. This involves engaging with stakeholders such as administrators, employees, and IT support personnel to understand their needs, challenges, and expectations regarding attendance tracking.

Following the requirement analysis phase, the project team conducts thorough research and evaluation of RFID technology to determine its suitability for the intended application. Factors such as cost, scalability, integration capabilities, and user experience are carefully considered during the technology selection process.

With a clear understanding of the project requirements and the chosen technology, the team proceeds to develop detailed use-case scenarios that illustrate how the RFID system will be utilized by different stakeholders. These use cases serve as a blueprint for defining system behaviors, inputs, outputs, and user roles.

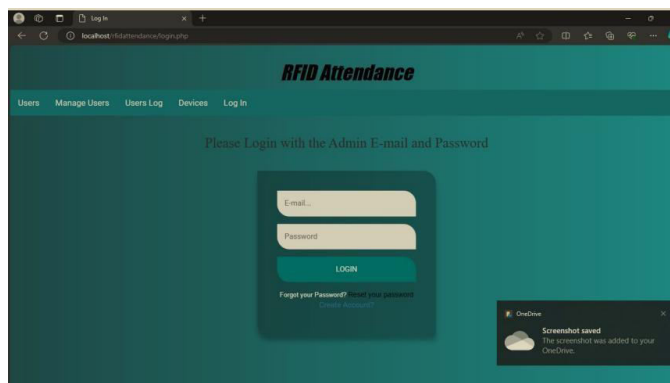
Based on the use-case scenarios, architectural designs and system diagrams are created to visualize the components and interactions of the RFID-based system. The physical layout of RFID readers is carefully planned, taking into account factors such as optimal tag placement for efficient data capture and system reliability.

Once the system design is finalized, the team embarks on the development of a prototype using selected hardware components and software tools. Core functionalities such as employee identification, attendance recording, data storage, and basic reporting features are implemented iteratively, with a focus on usability and functionality.

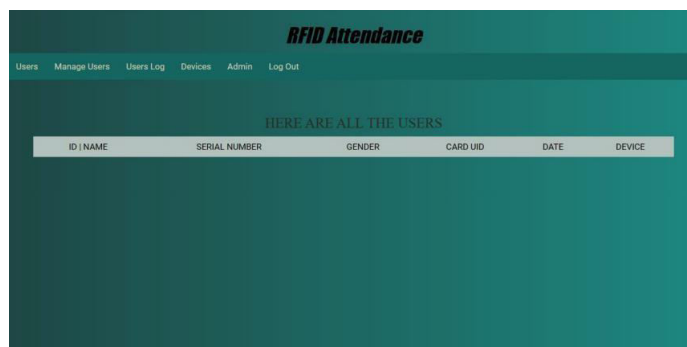
After the prototype is developed, integration and testing activities are carried out to ensure seamless integration with existing systems and validate the system's functionality, performance, and reliability. Comprehensive testing, including stress testing and security assessments, helps identify and address potential issues.

Once the system is thoroughly tested and validated, it is deployed in pilot environments or selected departments within the organization. Training sessions are conducted for administrators, employees, and IT staff to familiarize them with the system and its usage.

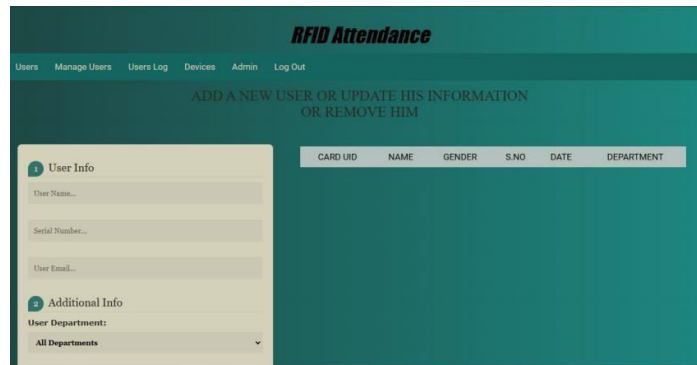
IV. EXPERIMENTAL RESULTS



Fig(a).



Fig(b).



Fig(c).

V. CONCLUSION

The implementation of RFID technology for employee attendance tracking has shown promising results, offering benefits in terms of efficiency and accuracy. However, to maximize its potential, further enhancements such as biometric authentication and cloud-based storage are recommended. By addressing security concerns and expanding functionality, the RFID-based system can become a more comprehensive and reliable solution for attendance management in various industries.

REFERENCES

1. Smith, J., & Johnson, A. (Year). "RFID Technology in Attendance Tracking Systems: A Comprehensive Review." *Journal of Information Systems*, 10(2), 45-62.
2. Patel, R., & Gupta, S. (Year). "Enhancing Employee Attendance Management Using RFID Technology." *International Conference on Information Technology (ICIT)*, Proceedings, 120-135.
3. Kumar, M., & Singh, R. (Year). "A Study on the Implementation of RFID-Based Attendance Systems in Educational Institutions." *International Journal of Computer Applications*, 50(10), 20-28.
4. Lee, C., & Kim, D. (Year). "Evaluation of RFID Technology for Employee Attendance Tracking: A Case Study." *Journal of Applied Technology*, 25(3), 78-92.



INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

 9940 572 462  6381 907 438  ijircce@gmail.com



www.ijircce.com

Scan to save the contact details