An RFID Attendance System with a Web Interface

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***Abstract*—This thesis builds a prototype attendance system using RFID cards. The report reviews RFID and microcontroller concepts, then describes an RC522 reader, Arduino-based control, a web server, and a database-backed interface. It uses Arduino IDE and web technologies including PHP, SQL, CSS, and JavaScript, with XAMPP for local development. The practical chapter presents the hardware arrangement, card-reading workflow, and website screens for attendance records. The author concludes that the principal construction requirements were met and notes that errors may remain. The source does not quantify recognition accuracy, authentication strength, or reliability during routine staff use. Its result is a documented end-to-end attendance demonstration, not proof of a production personnel system.**

***Index Terms*—RFID, attendance, RC522, Arduino, web server**

I. Introduction

Manual attendance recording can be hard to consolidate when staff arrive at different times. The thesis proposes a card-scanning system that records an identifier and presents attendance information through a website. It introduces RFID tags, a reader, and the software components needed to store and display events. The project objective is to assemble and demonstrate a working prototype. It does not investigate institutional policy or compare the method with biometric or manual alternatives [1]. Earlier ICTU student work on related designs is included here for context [4]. Related published studies provide context for the subject and methods [5], [6], [7], [8], [9], [10]. These contextual works were selected for this English summary; they are not asserted to appear in the original thesis bibliography.

II. Methods

The implementation uses an RFID-RC522 reader, cards with identifiers, a microcontroller programmed in Arduino IDE, and a locally developed web interface. The author describes hardware connections, card scanning, and transfer of recorded events to the server and database. The web portion draws on PHP, SQL, CSS, and JavaScript and is prepared with XAMPP. The report contains circuit diagrams, code, and interface screenshots rather than a formal evaluation protocol [1].

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III. Results

The source shows the assembled RFID attendance arrangement and displays the connected website and record workflow. Its conclusion says that the author designed and built the system and learned the supporting programming and electronics. The observed materials support that a card-read path was demonstrated. They do not include a measured false-read rate, repeated-use reliability, protection against card sharing, or evidence of organization-wide deployment [1].

IV. Discussion

RFID makes a card identifier easy to read electronically, but an attendance record is only trustworthy when card ownership and database access are managed. The thesis does not test those controls or present a large-scale operational trial. It also acknowledges that the prototype may contain errors. A later implementation would need permissions, exception handling, logging, and reliability tests with real users before the system could serve as an authoritative attendance register [1].

V. Conclusion

The thesis documents an RFID attendance prototype connecting card scanning, microcontroller logic, and a website. The report includes hardware and software design material and shows the intended record flow. It supports a practical learning and implementation outcome. It does not establish measured accuracy or production readiness. Further security and reliability checks would be required before relying on its records for staff management [1].

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