THE AUTOMATIC DOORS INTEGRATED ABSENCE AND USER ACCESS USING FINGERPRINT

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ABSTRACT

This research aims to design Accompanied Door Access System Automation Absence and User Access Rights Using Integrated Fingerprint Database on Basic Computer Lab Informatics STT-PLN. What is meant by "Absent Automation and User Access Rights" among other computerized attendance automatically using fingerprint and right into a room on a predetermined schedule of lectures on computer lab space. System design method used is the method of evolutionary prototype, using MySQL database and coding using Visual C # .NET. These results indicate that the Door Access System Automation Accompanied Absence and User Access Rights Using Integrated Fingerprint Database can help assistants in attendance processing, computer lab room becomes more secure and computerized.

Keyword: *attendance, fingerprint, computer lab, automation.*

1. INTRODUCTION

Education is the knowledge, skills and habits of a group of people who was sent down from one generation to the next through teaching, training or research. In the execution of required attendance of teachers and students at a place or a room that is commonly called the class. Where each classroom attendance required a presence in order to know the attendance of students in a lesson.

In STT-PLN, especially in the Computer Laboratory bases used as a means of lectures. At this time attendance attendance the students are still using conventional processes by calling student attendance or initials on the book even more students to cheat by manipulating attendance data. Coupled with the right of access to a computer lab that is not limited basic computer applications and data data that can be accessed by users when hours of lectures that can cause data loss or damage to the computer system. As a result of these deficiencies a system is needed that involves the use of technology for attendance, access rights and log record computer users to improve the effectiveness of the learning process and the quality of computer security integrated with the database.

To overcome the above, we need a door access system that can help in the process of attendance and grant permissions on each computer to manage and control the presence of students to crack down on a variety of fraud and manipulation of data. Based on the above background, the author considers this system very useful for the lectures on Basic Computer Lab STT PLN.

2. RELATED WORKS

Sinaga and Tamba [1] has been doing research with the title *Sistem Presensi Dengan Metode Sidik Jari Menggunakan Sensor Fingerprint Dengan Tampilan Pada PC* that use of the system manually presence has many weaknesses which one example is the inimitable presence. Thus, to overcome these problems built a presence system using fingerprint [2]. By using a data sample of 10 respondents, where each respondent scanned fingerprint data taken by 8 scanning, which varied from the point of taking fingerprints on the sensor (0 °, 22.5o, 45o, 67.5o, 90o, 112.5o, 135o, 157, 5o). Based on the obtained data analysis of the obtained results of 8 respondents stated the same (match) and 2 respondents are not the same (not found) for $157,5_0$ corner. It is hereby concluded electronically presence system with fingerprint method is good to use as a presence system.

Iskandar [3] on the task eventually titled *Sistem Informasi Absensi Berbasis Fingerprint* stated that Information Systems Attendance Student is a system in which supplied the central concept of "web server" that is intended for students, but the system is flexible and dynamic, ie the system can still use a desktop-based, or mobile-based developed though. The use of fingerprint a factor supporting the flexibility of the system, and the system can be expanded to other devices such as acces Door (automatic door opening system) and other supporting equipment.

Fingerprint technology is still in use today because the technology is still believed by many users in terms of security which has been proven in studies Heckle et al [4] found 24 participants were asked to roleplay the use of a fingerprint biometric identification system when making purchases at an online bookstore. The results show differences in opinions about the biometric system when the perceived benefits for the users were manipulated. Participants were more comfortable using biometrics, and considered them more beneficial, when they were used to secure personal information for personal purchases, in contrast to securing. Penelitian tersebut memperkuat hasil penelitian sebelumnya [5, 6].

Technology Fingerprint can also be used in access control and Classroom Attendance as on research conducted by Mittal et al [7] entitled *Fingerprint biometric-based Access Control and Classroom Attendance Management System* which in its research reveals that the fingerprint system has received a lot of research and attract business many researchers because they provide a powerful tool for access control and security and for practical applications. A literature review of the techniques used to extract features from the fingerprint as well as the detection technique is given in the paper. Several research articles have been reviewed using traditional methods such as recognition technique, while other articles have used neural network method. Additionally, fingerprint enhancement techniques are introduced.

3. EKSPERIMENT

Experiments done is to build a prototype of a fingerprint recognition system which will be connected to the user database for commonly used laboratory. Users of the laboratory comprised of faculty and students who will diintegerasikan with class schedules that exist in the laboratory.

This experiment uses multiple hardware and software including: Fingerprint SEN04172P, Button, 4x4 keypad, LCD, Relay Channel 1, Arduino Mega 2560, Electrical Doorlock USB, and an application to monitor. Where hardware and software are organized as in Figure 1.

In Figure 1 shows that we combine Fingerprint, Button, keypad, LCD Relay, Electric Doorlock on an Arduino which the input of the hardware will be translated by Arduino and the results will appear on C # based applications. Administrators can perform monitoring on the application.
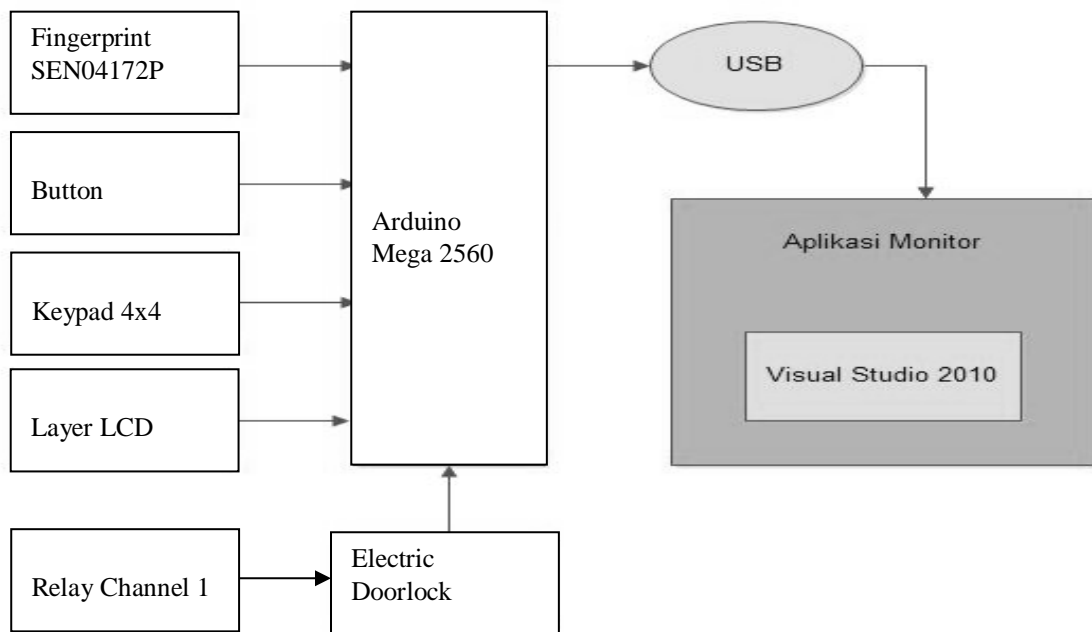

Fig 1 System Architecture

4. RESULT

Results from the design hardware and software that we have done, can be realized as a prototype that can be used with real input data. Prototype that we built shown in Figure 2. While the result of the realization of the software that we have built can be seen in Figure 3.
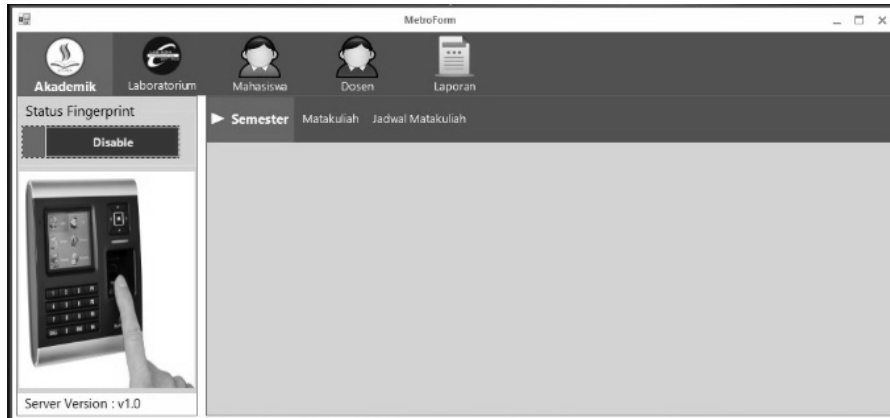

Fig 2 Application for Monitoring

Fig 3 Doorlock with Fingerprint Prototype

Once the prototype is formed and functioning properly, we tested the tool with blackbox methods and scenarios are shown in Table 1. In Table 1 indicates that the fingerprint used in prototype working properly by the scenario that we have planned.

Table 1 Fingerprint Testing

Data Input	Scenario	Analysis	Result
Biometrik Fingerprint	Input Biometric Those already registered and in accordance with the schedule	Doorlock Openned	Accepted
	Input Biometric That has not been registered and is not in accordance with the schedule	Doorlock Openned	Accepted

5. CONCLUSION

System access to computer in the Computer Lab Asociation expected to dicipline students in the use of space lab in accordance with schedule access for room access by students adjusted to the schedule of the course the student by utilizing fingerprint, so that if students do not have a schedule in accordance with the schedule so the student can not be into a room practicum.

Through this system, access to the use of space- borne accountable to a lab assistant in accordance with the schedule overseen assistants who have been determined by lab coordinator. Thus, simplify management and performance Basic Computer Lab assistant.

Design of door access system with automation absent and user access rights using the integrated fingerprint database, expected to help assistants in terms of controlling the use of the room and attendance so that the process becomes easier and faster because the process has been computerized.

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