

Conference Paper

Implementation Information System of Student Mobile Absention (SIMAMA) in Universitas Pembangunan Nasional “Veteran” Jawa Timur

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Abstract

Improving the integrated management system of infrastructure and facilities is one of the service objectives of the Universitas Pembangunan Nasional “Veteran” Jawa Timur, the implementation is often still in the procedure manual stage, for example students must sign attendance as proof that the student is present and attending the lecture. Problems arise when recording UTS / UAS implementation where attendance is guided by a minimum of 75% with procedure manuals Students cannot see openly the number of attendance at the lecture, and not a few supervisors who use attendance as activist assessors in the class, with manual procedures for cheating opportunities in signatures the presence of the procedure manual by students at potentially very large lectures. Thus the need for an information system that can help resolve these problems. So in this study, it is intended to build a Student Attendance Mobile Information System (SIMAMA) which is useful for recording and displaying student attendance reports as an effort to improve integrated and computerized facilities and infrastructure.

Keywords: Absention system, information system, SIMAMA, web application

INTRODUCTION

University, lecturers, and students are elements that cannot be separated in a higher education institution, the teaching and learning process every day will always involve these parties, how the University accommodates lecturers as assets and students as human resources of the next generation. The activities of each teaching and learning day are carried out in accordance with the existing lecture schedule prepared by the institution and the teaching lecturers who are related to teaching certain subjects (Linbong, 2012).

Often lectures use attendance as evidence of attendance or absence of students in attending lectures at that time. Presence is one way to motivate students in an effort to provide teaching and learning activities that are followed by students, and yes a computerized attendance system makes lecturer lecturers able to monitor student activity in the classroom and be able to become one of the disciplinary parameters of students in lectures (Aini et al , 2017).

With the presence as a form of learning motivation and assessment of activity in the class, errors in presence cannot be tolerated. Error inputting the presence of students will greatly affect the calculation of the value of the eligibility of student participation in the exam and the final grade of students (Zebua & Pristiwanto, 2017).

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The procedure manual method at the National Development University "Veteran" East Java has a weakness, errors can come from lecturers as administrators, administration (TU) as a manual attendance provider, and students. The procedure manual is also very possible to commit fraud. In carrying out attendance procedures based on procedure manuals, it is not uncommon to find weaknesses and shortcomings in their implementation, weaknesses and shortcomings that are used as opportunities for unscrupulous students to act fraudulently by forging signatures on the attendance sheet (Aini et al, 2017).

The phenomenon that often occurs in the University of National Development "Veteran" East Java is that the number of students reported by the manual system cannot take the exam while the students concerned insist that they are always present in the lecture, this mistake will be fatal for students at the end of the semester. With the existence of phenomena and problems that exist in the University of National Development "Veteran" East Java, it is proposed to create an information system, the purpose of the system is to make interaction between elements so as to realize an integrated procedure. Gordon, (1991) mentions the system is a collection of various rules of the game that are interconnected so that an organization can operate simultaneously to achieve organizational goals and objectives, in other studies the purpose of the system is to interact with each other so as to create an integrated procedure (Kumorotomo & Margono, 2001).

In line with previous research, according to Oetomo, (2002) information systems are a collection of system procedures that are interconnected systematically, directed, and measurable so that they can be transformed into data of new facts useful for the interests of the organization in running, monitoring, controlling, and also make decisions. So this research is expected to contribute organizations from the scope of presence services using the presence of mobile-based presence information systems. Functioning as a support for research needs, it is necessary to implement a mobile apps-based information system. Kadir & Triwahyuni, (2013) The use of mobile web has been widely used by companies that want to gain market in the online world. With browser-based mobile web it can run on the Hyper Text Markup Language (HTML) programming language, in the current digital era access to the mobile web simply uses smart mobile devices, but this must be supported by cellular networks that have been connected to the internet. And also needed a web service as a system integration service on computer networks. web service has services that are able to provide a program function service so that it is possible to engineer data through the internet using standard internet protocols and languages and in implementing web services using internet standards (Mustaqbal, 2015).

This study describes how the development and utilization of the application of student attendance information systems based on mobile apps at the University of National Development "Veteran" East Java. As an operation SIMAMA uses a smartphone from each lecturer. Presence information systems have contributed both to improve employee attendance Presence (Rinawati & Candrawati, 2013)

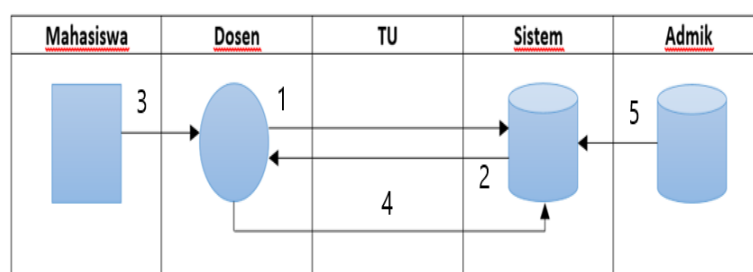


Figure 1. SIMAMA application process

Figure 1 provides a representation of the application of SIMAMA at the University of National Development "Veteran" East Java, in point 1, explaining that lecturers do not need to take attendance sheets at TU, the lecturer can directly log in via his smart phone. Point 2, explains the feedback process from SIMAMA to the lecturer so that (continued to point 3) students can be absent by the lecturer through SIMAMA online. In point 4 is feedback from students who have held a stored presence on a computerized system and point 5 is the academic system can take attendance information for student attendance.

SIMAMA design and development is expected to be an alternative to be able to observe discipline for students in which there is a recapitulation of attendance and absence of students during lectures, and able to help serve students in seeing their own activeness, given that the influence of service quality and customer value can affect the University's image (Hendrayana , 2014) it is expected SIMAMA can provide improved services to stakeholders in the National Development University "Veteran" East Java.

METHODS

The research methodology is carried out in the literature study stage and the design process is carried out using the waterfall method , starting from the needs analysis, design, implementation, trial.. The implementation of this research was conducted in 2018 and took place at one of the State campuses in Surabaya. The method used in designing and implementing is by means of literature studies, field studies observing and interviewing potential users of the system, design and scanning systems using StarUML, then coding, testing and implementation using HTML 5 as a programming language that supports mobile apps. Last is the management of the system of this activity carried out to provide evaluations and adjustments to users.

Needs Analysis: Based on the results of interviews and field observations with prospective system users, problems were found, including: 1) It often happens before the presentation sheet is prepared by TU. 2) Lecturers sometimes forget not to take the attendance sheet from TU. 3) Students who do not enter lectures can help their friends sign their presence. 4) Frequent complaints occur at the end of the semester as students who feel often enter do not meet the minimum percentage of attendance so they are not allowed to take the final examination.

Thus, based on user experience delivered during interviews and field observations, there were four (4) main problems arising from the application of procedure manual presence , the system design and development needed to have SIMAMA benefits to solve the main problems. Functional requirements in making SIMAMA in conducting design and implementation based on the results of observations and interviews obtained the following results:

Table 1. SIMAMA needs

F01	SIMAMA harus dapat memberikan kemudahan akses, fungsi, dan fasilitas pada admin
F02	SIMAMA harus dapat memberikan kemudahan akses oleh dosen pengampu
F03	SIMAMA harus dapat memberikan autentikasi keamanan setiap melakukan PRESENSI
F04	SIMAMA harus dapat menyajikan prosentase kehadiran yang dapat dilihat oleh mahasiswa

System Requirements Design

In the design depicted in the use case diagram and the results of observations found 3 user needs, namely, academic admin, lecturer lecturer, and students (students). Based on the needs analysis obtained the SIMAMA use case diagram as follows:

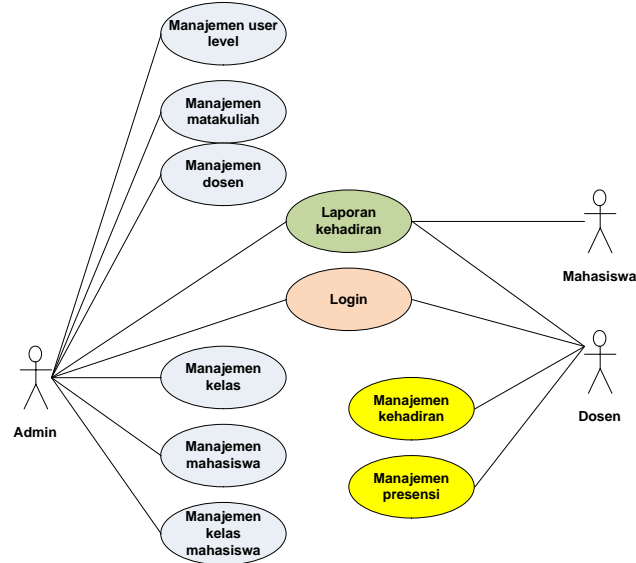


Figure 2. Use case diagram SIMAMA

Admin will provide information about the administrative procedure for the first registration of attendance courses for students, inputting the initial data of students and the initial data of lecturers. Enter the class and the name of the lecturer in the class. The lecturer will input the name along with the completeness in the teaching, the subjects taught in the semester, the class that will be carried out the teaching learning process and the school year to then get the results of the report from the attendance recap of participating students. Students can only do attendance which is then connected to the academic data base, then students can receive lecture attendance reports simply by opening the presence website.

RESULT AND DISCUSSION

After doing the stages of planning, design, implementation, and testing using the black box test (Mustaqbal et al., 2015) the results are as follows: 1) The process and steps in making SIMAMA have gone through the right planning flow. Starting from the analysis of user requirements, conceptual design that makes SIMAMA easier, and the interface design that is tailored to user requests through interviews. 2) Found four (4) main user needs in SIMAMA development. 3) Integration between SIMAMA access through a laptop web browser and through a mobile web browser works fine. 4) SIMAMA has been successfully built and implemented in the form of a mobile web.

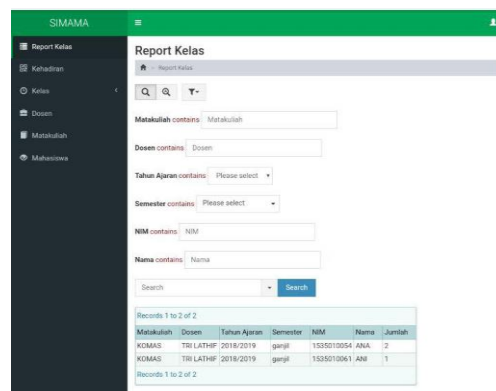


Figure 3. Home page SIMAMA

Information on this page has been presented, from this front page students can monitor the number of attendees they have in each course they take.

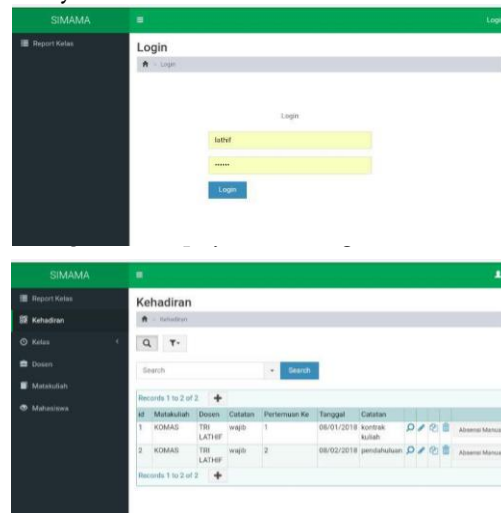


Figure 5. Student Attendance Page

On the login page, only those who are granted access rights can enter into SIMAMA, access rights are given by the Admin to all lecturers and will only be able to enter the pages of the subject they are administering.

On the attendance page, it provides information related to the lecture that will be carried out, if the lecturer has logged in, he will be able to enter the lecture to what extent he can then use his presence.

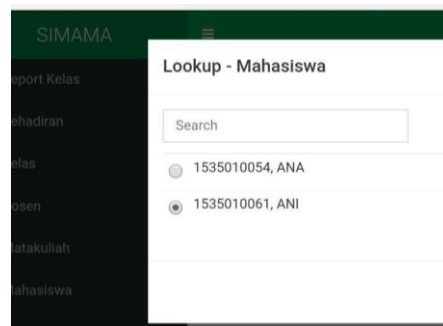


Figure 6. Student Search Page

After the lecturer determines which meetings, the lecturer can look for the names of the students present to be chosen as students who attend the lecture.

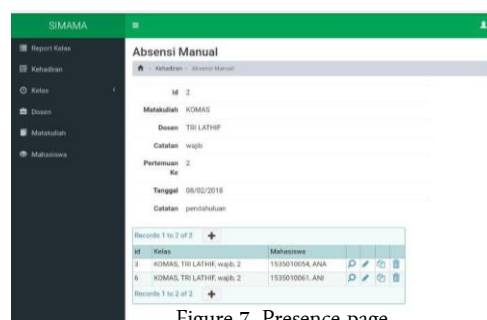


Figure 7. Presence page

The name addition of a successful student will provide information on the attendance page, thus the presence page will automatically be added to the selected student. The results of the testing of SIMAMA will be divided into two perspectives, namely the advantages and disadvantages of SIMAMA, along with the results:

Advantages of SIMAMA

- 1) SIMAMA can provide student attendance information at the actual, sharp and reliable lecture hours.
- 2) SIMAMA can provide a recap of attendance and absence addressed to each lecturer lecturer.
- 3) SIMAMA can provide attendance recaps to students, so students transparently know their presence in lectures.
- 4) SIMAMA can reduce the work of TU who must provide attendance sheets can provide space for TU to do other work.

Lack of SIMAMA

- 1) SIMAMA can only be used at National Development University "Veteran" East Java which has indeed karakteristik solution to the problem by using SIMAMA.
- 2) SIMAMA is a mobile information system which means it requires an internet connection in its use.
- 3) SIMAMA needs to be continuously tested and developed, binding SIMAMA is a new program that is applied to the University of National Development "Veteran" East Java.

CONCLUSION

The conclusions obtained are. The student attendance information system which is then called SIMAMA has been successfully designed , built, and implemented for the purposes of one of the concrete forms of improving the service of the teaching and learning process. SIMAMA is a service that can be used to provide student attendance records and student attendance reports in attending lectures.

SIMAMA gave the opportunity for the convenience of a lecturer in a certain subject to attend attendance to his students so that the application of SIMAMA would minimize the opportunities for fraud in carry out attendance of student attendance during lectures. Thus SIMAMA is believed to be able to assist in resolving the problem of presence and be able to play as a processor and management of student attendance data into information.

The system that has been built also has shortage, therefore the advice addressed to users as well as research to be dating.

- 1) Need for training of all stakeholders who will be using SIMAMA.
- 2) In the years to come SIMAMA who have completed their system renewal needs to be used regularly and more useful.
- 3) SIMAMA is not a perfect attendance system, providing good and measurable services requires special attention from management, this is because the University has a high complexity of needs (Suryanto et al, 2016) , therefore it is necessary to analyze the acceptance of a system using the Acceptance Model Technology (Rahayu et al., 2017) then evaluated the suitability of the system through Delone Mcleane Model Information System Success (ISS DMM).

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