

Mobile Application for Computer Laboratory Maintenance in Institute of Informatics and Business (IIB) Darmajaya

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Abstract: The problem statement of this study was that checking and monitoring process in the computer laboratory of Institute of Informatics and Business (IIB) Darmajaya was less optimal because it was still carried out manually. This caused a difficulty for the head and assistants of the computer laboratory because the written data on paper were vulnerable, and easy to lose and scatter. According to this problem, an application was needed not only for the assistants of the computer laboratory who used it to record the checked-list data but also for the head of the computer laboratory who used it to monitor the readiness of the laboratory in real time. It was expected that the application was able to facilitate the checking and monitoring process for the assistants of the computer laboratory. Moreover, the application was expected to facilitate the head of the computer laboratory to monitor the readiness of the computer laboratory by looking at checked lists data stored in the database.

Keywords: Monitoring, Real Time, Computer Laboratory

1. INTRODUCTION

Technology was regarded as the fast-growing industry even though it had no signs to slow down. It was because everything was also run by technology in the near future. Moreover, the technology was everywhere, with the existence of computers, Smartphone, and televisions. There was an enormous change in the mid of particular fields over the years since the days of the printing press and the cellular phones rose. The technology emerged and boosted in the industry. The computers and cellular phones were used every day in all over the world and in many different ways. The computers and cell phones brought businesses and *work from home* opportunities. The social networking and games were also a big part of everyday life of people all over the world within the technology aspect.

Certain society, especially academicians, had computer laboratories. The computer laboratory was the place that provided the computer services to the public and was usually free to use.

On the other hand, there was a need of protection and restrictions within available networks to the public. Users, especially students, were denied to access the websites featuring adult content or sites that demanded too much bandwidth. Users who used the computer laboratory were usually allowed to browse a limited amount of time through a machine whether surfing the internet or using the software for doing their work. There was rarely using a public computer laboratory but the laboratories in educational facilities tended to be available only to the current students of the school and usually must sign on so that their activities were be able to be traced and monitored if it was necessary. The computer laboratories were found in libraries, schools, government buildings, science laboratories, and community center companies with IT departments by requiring available

place for their employees to do their jobs and research centers. Printers, scanners, and other tools were added for the laboratory setup.

An internet café was different from the computer laboratory. A computer lab was generally free for those with access; while, the internet cafés had a charge for the users. The term ‘internet café’ was often used interchangeably with ‘computer lab’ but differed from the computer laboratory in which the users were also able to connect to the internet using their own computer or device. Moreover, the computer laboratory users generally did not need any equipment for their own

2. LITERATURE REVIEW

Android was the OS (Operating System) growing in the mid of the other OS that were developing today, such as Windows Mobile, i-phone OS, Symbian, and many others without seeing the considerable potential of third-party applications. Therefore, there were limitations of the third-party applications to get the original data from the mobile communicating between processes and limitations of the distribution of the third-party applications for their platforms.

3. METHOD

Prototype [3] began with the communication between the software development team and the customer. The software development team conducted the stakeholder meetings to define the overall goals for the software in order to be developed, to identify certain specifications from the market requirements, and to describe areas in which the process was necessarily carried out.

4. RESULT AND DISCUSSION

a. Design Logic

The design logic design contained Unified Modeling Language (UML) modeling, i.e., use case diagrams, class diagrams, and activity diagrams. The explanation of each diagram was as follow:

1. Use case diagram

The following was the Use Case Diagram for the application laboratory

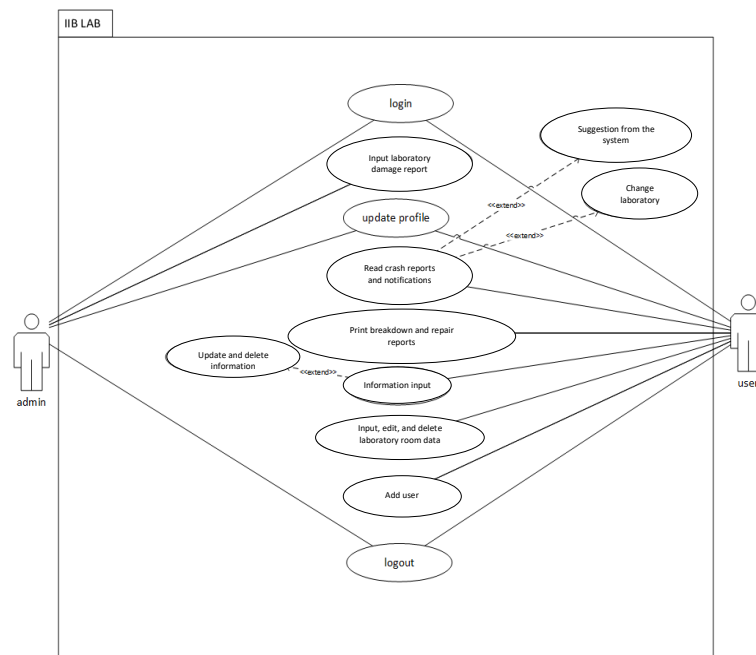


Figure 1 Use Case Diagram Application

2. Class Diagram

The following was the class diagram for the mobile laboratory maintenance system:

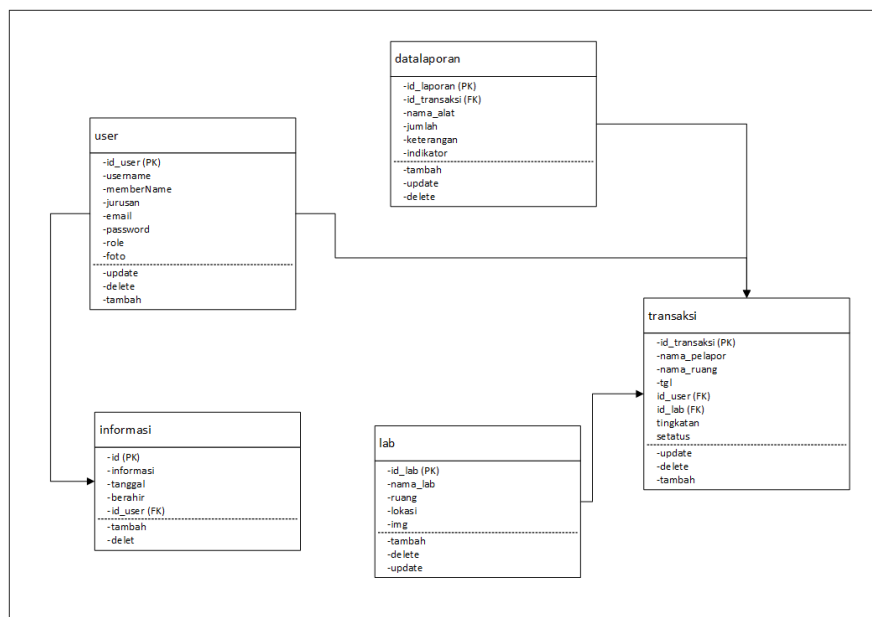


Figure 2. Class Diagram

3. Activity Diagram

The following was the Activity Diagram of the mobile laboratory maintenance system for report:

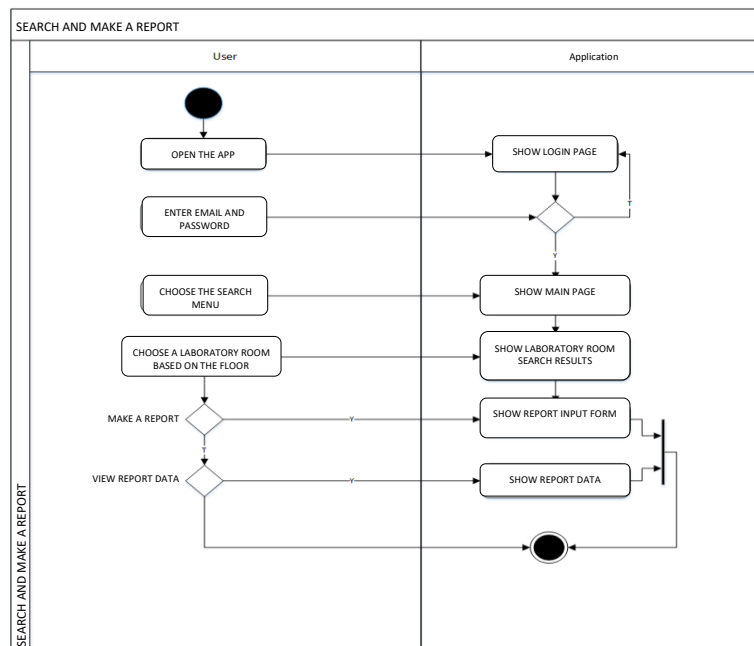


Figure 3. Activity Diagram Report

4. Display Main Menu Form
Main Menu Form display was seen on Figure 3.4 as follows:

The screenshot shows a login form for "DARMAJAYA". At the top, there is a blue header with the text "DARMAJAYA" and a description: "Laboratorium adalah tempat riset ilmiah, eksperimen, pengukuran ataupun pelatihan ilmiah dilakukan". Below this is a button labeled "LABORATORIUM".

The main content area is white and contains the text "Sign in" in a large font. Below it are two input fields: "Enter your email" and "Enter Password". At the bottom of the input fields is a blue button labeled "LOGIN". Below the button, it says "singin with Credential users".

Figure 4 Main Menu Login Form Display

5. The following displays the admin page manage User Interface:

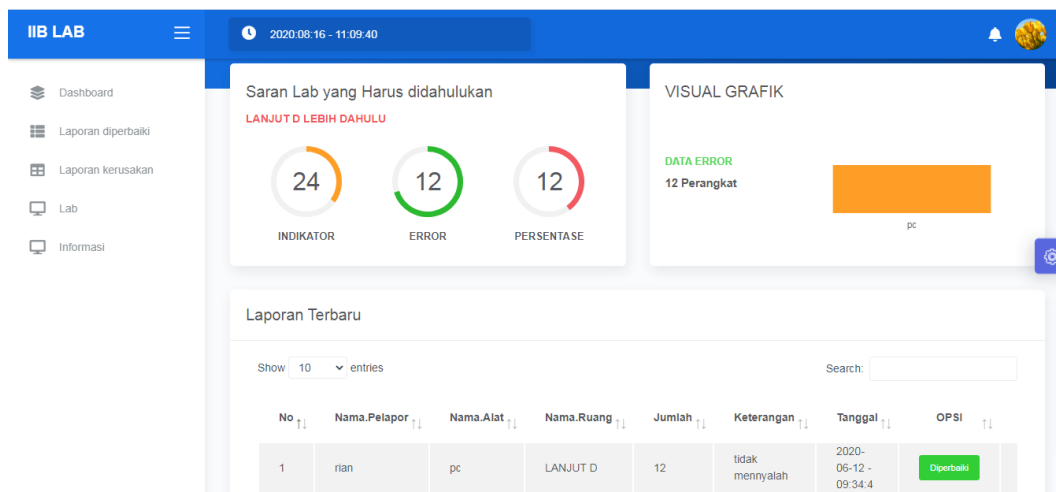


Figure 5. Admin page managing Mobile User

6. The following displayed the user menu interface:
- 7.



Figure 6. Display of the user

8. The following was the interface to make a report

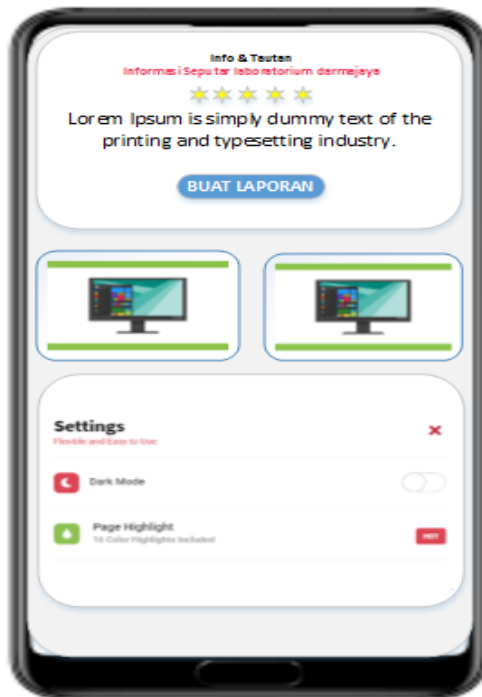


Figure 7. User page views for report

9. The following displayed the report notification page for admin user

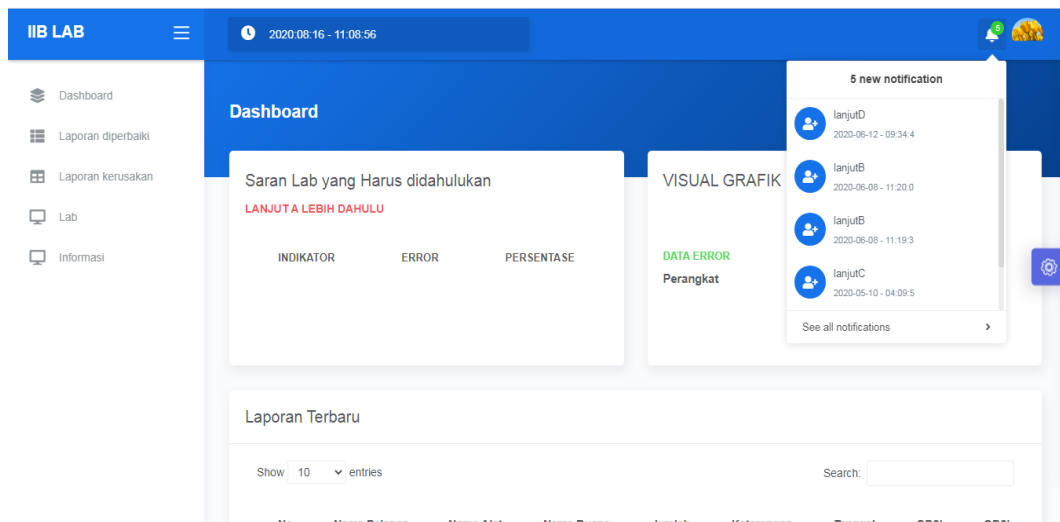


Figure 8. User page view for admin report

5. CONCLUSION

Several conclusions and advantages of this study were:

1. It facilitates the laboratory assistants to report data on device damage that occurs in the Darmajaya laboratory.
2. It facilitates the laboratory administrators to monitor reports reported by the lab assistant

3. It facilitates the process of reporting with the application without ruling out the report in the written form.
4. The damage on the report data was neatly arranged in the database and was used as information on which lab room was frequently damaged so that it was able to be prioritized in the new device.

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