Designing an Online Supervision System (Logbook) with Laravel Framework

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A R T I C L E   I N F O

A B S T R A C T

Final Year Project is one of the students' graduation requirements to get a Bachelor Degree in Higher Education. The supervising process is an essential part of the final project activity between the supervisor and the students to supervise the students to produce a qualified final project. The article aims at designing a logbook application by using the Laravel Framework for students' supervising process. The design of the logbook used Laravel framework and a MySQL database. It is utilized by Information Technology major Politeknik Negeri Padang.

1.   Introduction

Final year project supervision is one of the processes that students need to go through by the students as well as one of the lecturer's realizations on Educational side. The final year project supervision conducted between the supervisors and the students is a series of processes after the students' final project topic proposed was validated. The supervisors are responsible for providing consultation, interviewing, thinking, and reporting the final year project progress (both oral and written). The growth of technology on Educational side is not maximized yet. Some of the information system process in the teaching and learning were conducted manually.

During the supervision process by the students, it was found that most of the students were in problems in filing the written supervising documents and the less control of the supervisors. The other problems were the difficulty in arranging the supervising schedule between the students and the supervisors due to the different respective activities. These problems experienced by the students as well as the supervisors during the supervision process in accomplishing the final year project causes students' difficulties to achieve the aims of writing the final year project. It confuses the students and the changes of the time in writing the final year project.

The article aims to:

1. Designing an online supervision system (logbook) a laravel framework to assist the students' supervision process for the final year project that conducted online and to monitor the students' activities in doing the final year project through chat features.

2. Designing an online supervision system (logbook) that supported with fast, complete, and accurate printing archives on.

The information system is a system used to collect, process, store, analyze, and disseminate information to achieve a particular goal. Mostly, information system includes input, process, and output as well as a collection of subsystems that are interconnected with one another.

2.   Literature Review

This section will address some background study on management information system, logbook, Software Development Life Cycle and framework Laravel.

2.1   Logbook

A Logbook is an official record or note of research activities conducted by the researchers. The Logbook is used to help the students to document the supervision given by the supervisors during the process as well as supervision materials [1]. The discussion materials n are going to be used by the students as references to revise the final year project to achieve the set particular goal.

2. 2   Supervision

Supervision is an action or assistance of individuals or groups of individuals to overcome the difficulties in their lives to achieve a prosperous life as part of continuous activity, not an instantaneous or accidental activity [2].

2. 3   Final Year Project

The final year project can be in the form of a scientific work of student's research activities supporting the supervisors both in a case study, modeling, and application development of an application or system. The final year project is one of the compulsory courses for the students as well as one of the requirements to accomplish the degree in Higher Education.

2.4   Unified Modelling Language (UML)

UML is a standardized modeling language in the industry to visualize, design, and document software systems. UML offers a model to design a system. Object-oriented and visual-based uses UML due to the focus refers to a statistical structure in a dynamic system model and aims to traditional development.

UML uses 3 analysis and design processes, namely Use Case Diagrams focused on the analysis of the work of the system and the stakeholders involved [3], Diagram Activity is a technique for describing a workflow, a work process, and a logical procedural of a system process and event that are connected each other to achieve a particular goal, and Class Diagram shows the relationship among the classes in a designed system and the way to interact each other to achieve the goal [4].

2.5   MySQL

MySQL is an RDMBS software or a fully managed database service that enables organizations to process the data quickly, can accommodate very large amounts of data, and multi-user, and also can do a synchronize process or multi-threaded [5]. MySQL is widely used in various circles to store and manage data from academics to industry, both small, medium, and large industries.

2.6   Laravel Framework

Web framework is a framework that can ease and accelerate the the development process of a web application that includes a collection of codes in form oof library and tool [6]-[10]. Laravel framework is a PHP framewok that was designed with MVC Model View Controller under licensed by MIT. Laravel is designed to improve the quality of a software system by reducing a preliminary development cost, a maintainance cost, and to improve the work experience of the system with an application by providing an expressive, clear syntax, and save time written in PHP language [7].

3.   Analysis and Design

This section describes system requirements analysis and design of a logbook for supervision system on final year project.

3.1   System requirements

The need of the system on this logbook design is Information system that can record the final guidance activity of students and guidance activities by using MySQL database. This logbook also

gives a review facility to the guidance process between the lecturer and student. Logbook also provides an attachment to the appeal of the files required for guidance process. Logbook also provides a facility of chatting between lecturer and students during guidance.

3.2   Designing logbook

3.2.1   The Proposed Information System

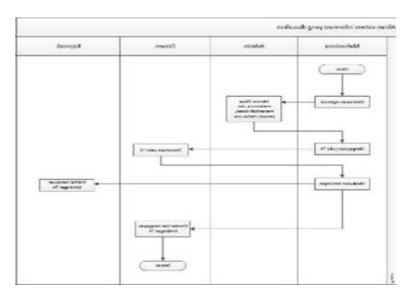Figure 1 shows the proposed information system in designing logbook application with laravel framework.

Figure 1. Proposed System in Designing logbook

3.2.2   Entity Relationship Diagram (ERD)

In a logbook application with Laravel framework shown in figure 2 describes the connection among the data in a data base based on basic data objects that connected the relations.
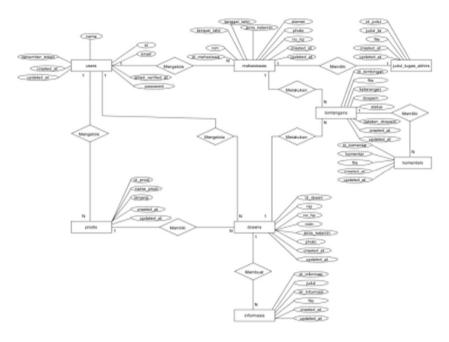

Figure 2. Entity Relationship Diagram

3.2.3 Sequence Diagram

Figure 3 shows the process if input username and password on form login, the data validation will be checked, the login data will be include in user table and it displayed in main board of user.If the input data are not appropriate, the logil would be fail.
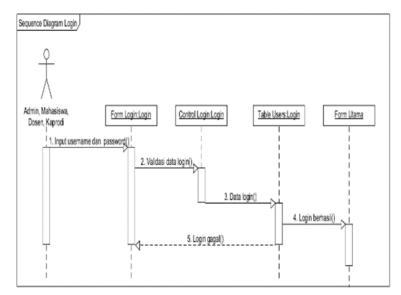

Figure 3. Sequences Diagram at Login Form at Logbook Application Using Lavarel

3.2.4 Interface System

The following are the form display of the Logbook designed with Laravel framework.

▪ **Main Page View**
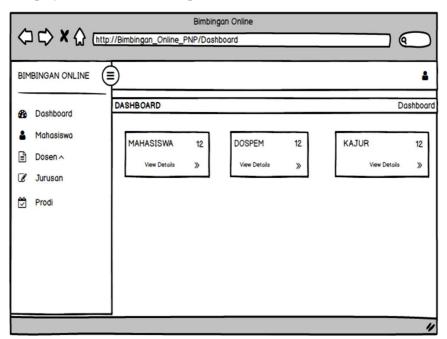
Figure 4 is the display of interface online supervision.

Figure 4. Interface Display

▪ **The Display of Students Data Management**

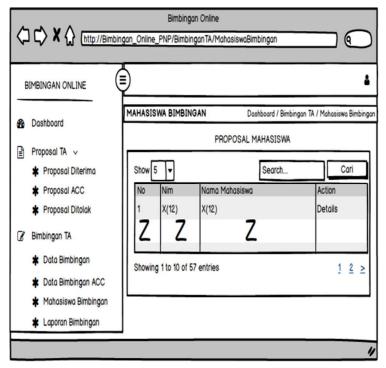The Display of Students Data Management Page as show in figure 5.

Figure 5. Management Page of Students' Data

▪ **The Display of Students' Supervision Details Process**

Figure 6 shows the display of students' supervision details process in online supervision system with Laravel.
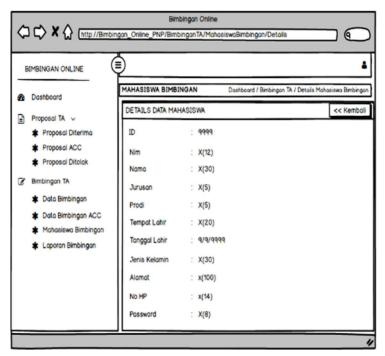

Figure 6. The Display of Students' Supervision Details Process

▪   **The Display of Students' Supervision Report Page**

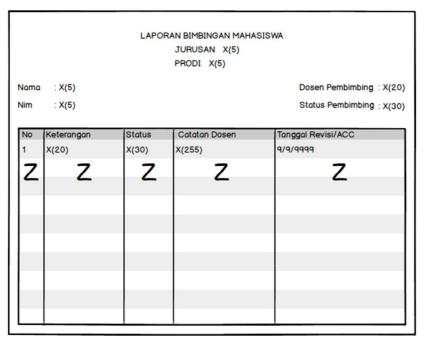Figure 7 shows the display of students' supervision report page that one of the logbook outcome with Laravel.

Figure 7. The Display of Students' Supervision Report Page

4.   Conclusion

The conclusion of this article is that the process of guidance between the students at the time of students do the final assignment in the political state of the field is designed to ease the process of guidance and can be done anywhere without having to be the student's own. The facility in this logbook is a process of tutoring history, the same facility for each guidance and student can drive the files needed at the time of guidance and will produce a history of chatting facilities between students.

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