Designing Internship Monitoring System Web Based With Laravel Framework

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Abstract— Today, existing information systems in the world still have some shortcomings. Disadvantages that occur, among others, namely the design, display and process of data exchange between databases that can cause errors or failures in data storage. To deal with these shortcomings before making the information system required proper design. The design of information systems that is done that consists of making Use Case Diagrams, Data Flow Diagrams, Sequence Diagrams and Entity Relationship Diagram. The results of the expected design that is able to overcome and meet these shortcomings. This paper contains about the design of web-based academic information system design using Laravel framework with case study problems on an internship monitoring information system in Telecommunication Engineering Program, Department of Electrical Engineering, Politeknik Negeri Semarang. The purpose of writing this paper is to find out the design results or design of internship monitoring system which is believed to assist in making internship monitoring system. The construction of an internship monitoring system uses the Laravel framework to facilitate the process of making the program.

Keywords— *internship; internship monitoring system; framework Laravel*

I. Introduction

Politeknik Negeri Semarang As a college that emphasizes on vocational education consists of lectures on theory and practice. One way to support the theory and practice lecture program in line with the development of the industry is the implementation of the equivalence and linkage program. The implementation of this concept is by giving the opportunity to the students to know and see the industrial world directly through the industry internship. Industry internship is one of the compulsory, important, and must be followed by the students in the education program in all departments, especially the Department of Electrical Engineering, Telecommunication Engineering Program Diploma level with the implementation time for 4-6 months or special for one semester.

Implementation of an internship with a long time required monitoring of daily activities of internship in the form of daily reports and appraisal of the internship by field supervisor and supervisor. The problems that occurred during this reporting of the daily report of the internship are not well recapitulated and the assessment of the field supervisor is still done manually by writing on paper or assessment sheet at the end or completion of the internship. Another problem that occurs is the relationship and less intensive communication between students with supervisors so that supervisor lecturers less know the daily activities of students because it is not related every day through recap activities. It is considered less effective and efficient.

Internship monitoring can also be done by utilizing information system services. Ease with the information system is the process of data collection activities of student internships can be recapitulated well. The field supervisor and supervisor can monitor the internship by recapping daily activities by accessing the information system services. The application comes with web service as a bridge between front end application with database (application backend) that is data is taken from database server then convert data into JSON data interchange format [1]. Based on the description, for the Telecommunication Engineering Study Program requires web-based internship information system using Laravel framework that provides ease and efficiency for users in this case students, field supervisors, and supervisors so that can access information related to internship so that the implementation of internship activities can be monitored in real-time Through intensive communication. This paper discusses the design or design of an internship monitoring system which can further assist in the development process of this system.

This paper introduces the design of the internship monitoring system in part 1, followed in part 2 of reference to previous work related to the built system. Then the method used in section 3, the design and discussion results in Section 4, and Section 5 includes the conclusions and plans for future system development.

II. Related Works

Related research about academic information system before application in academic information system equipped with web service as a bridge between front end application with database (backend application) that is data taken from database server then convert data into data interchange JSON format But in the application built view on file sharing for document sharing less specific so a little trouble in the

process of sharing documents [1]. In another study, the system displays information and recommendations about the nutritional content of food in accordance with the nutritional needs of users. The system displays nutritious food recommendations based on the financial and food prices previously surveyed by restaurants in the Jatinangor area and food nutrition data obtained from the Food Composition Table of Indonesia. Incomplete food nutrition information, research on the nutritional content of cooked food is incomplete on the table/table of food composition. We recommend that nutritional information is provided because the data obtained from the survey and on the display can be classified by category of nutritional content each using the join function for inter-related tables in the database making it easier for users in finding food based on nutrition information contained [2].

The information system on the utilization of forest areas on the island of Sulawesi is supplemented by a service with the applicant/investor input information, required to request a license, directly into the system. The Director General of BUK inspects and issues SP1, reviews the AMDAL, exits SP2 and instructs the secretary-general to release the decision to license the utilization. The built system is supported with ArcGIS 9.3 as a spatial data processor, MapGuide Open Source Software 2.5 as Map Server, MapGuide Maestro 6.0 as IDE (Integrated Development Environment) for MapGuide Open Source, but only this system is focused on the area of forest utilization in the form of wood [3]. The academic information system at Syarif Hidayatullah State Islamic University Jakarta shows the entire academic activities of the action plan up to the assessment and absenteeism. Views that are made easier to use (user-friendly) but do not use web service, preferably a system built using a web service to facilitate the exchange of data so that the system becomes faster and efficient at the time of data access or data request from the user [4].

The design of internship monitoring system that will be built is one part of the integrated academic information system for Telecommunication Engineering Program of Politeknik Negeri Semarang, with other parts of the lecturing scheduling system and the final execution system. The design of this system design to assist in the development of internship monitoring system. In addition, the information system built using the Laravel framework. The Laravel framework is one of the frameworks created to help developers create a web by emphasizing the simplicity and flexibility of the design [5]. This framework applies the Model-View-Controller (MVC) method, which is a method used in developing an application that separates the data (Model) from the View and the logic of the application (Controller). Models are used to process queries or manipulate data to or from a database.

View is related to atarmuka or display of a web like HTML, CSS and JS as well as data that is client. Controller is the logic of a web that serves as a communication bridge between Model and View. The MVC process flow shown in Fig. 1. and the MVC process simulation in the Laravel framework is shown in Fig. 2. In this system the Laravel Framework is used for programming to facilitate the

programming process. With the process of easy programming then can overcome the deficiencies in the construction of an information system so that the system built in accordance with the design of the expected system.

III. PROPOSED METHOD

The research methodology used is the waterfall methodology, with several stages passing through tentative phases in sequence. The system needs analysis aims to obtain all the information needs related to users and literature needs such as journals, books, research, scientific papers and articles and the needs of hardware and software to be used. System design is done by web design and database that is made to process internship monitoring system based on the collection of points needed.

System design consists of system architecture, Use Case Diagram, Data Flow Diagram and Entity Relationship Diagram. System architecture describes system design in general. Use Case Diagram describes the expected functionality of a system that represents an interaction between the actor and the system. Actors in this design consist of Administrator, Head of Study Program, Student, Field Supervisor and Lecturer. That actor has different access rights according to his / her authority. The next design is the Data Flow Diagram (DFD) is a diagram that uses notations to describe the flow of data on the system in a structured. Flow data on the system design is the data flow of each user that is Head of the Study Program, Student, Field Supervisor and Lecturer to internship monitoring system. Sequence Diagram describes the interaction between objects in and around the system in the form of messages depicted against time. Database relation table design that describes the relationship attribute a table with attributes in other tables.
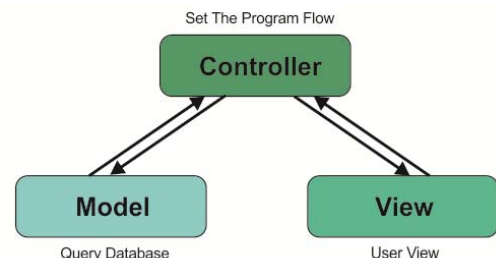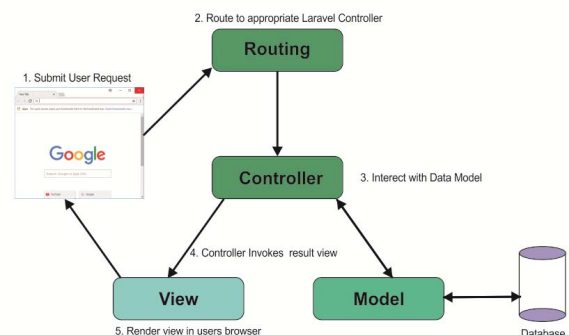

Fig 1. MVC Process Flow [5]

Fig 2. MVC Process Simulation on Laravel Framework [5]

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Preparation of system design includes software installation and design creation in accordance with system design. The discussion of system design is done to know and make sure that the system has been made to work properly and in accordance with the purpose. Obtained data from the results of further discussion will be processed and analyzed to determine the ability of the system design that has been made.

IV. RESULT AND DISCUSSION

The design result of the internship monitoring system design consists of the system architecture shown in Fig. 3. Based on Fig. 3., the internship monitoring system is included in the Academic Information System of Telecommunication Engineering Study Program (SIA Prodi Telkom) created and stored in the database under the name "siatelkom". SIA Prodi Telkom consists of three systems namely the Course Scheduling System, Internal Monitoring System and Task Monitoring System. Internal Monitoring System. This system consists of several tables containing user data, companies and other data. The system can be accessed by five levels of users ie administrators, heads of study programs, faculty, students and field supervisors.

Use Case Diagram of internship monitoring system is shown in Fig. 4. Based on Fig. 4., Use Case Diagram consists of five actors in the system. Administrators have access rights to perform user data management ie students, lecturers, head of study program and field supervisor. User data management is to manage user data such as adding data, edit user data and delete data. In addition administrators are assigned to the data management internship ie company data. The head of study program has access to internship management internship prior to internship that is to conduct data of internship information such as data addition, edit data and delete data. The head of the study program also conducts recapitulation and monitoring of the internship process.

Students have access rights to conduct daily report management and final report of internship. Daily report management and final report that is input, edit and delete data of daily report of internship activity and final report of internship before the end of internship activity Lecturers and field supervisors have the same access rights that is monitoring the internship by looking at daily report and final report of the student. Lecturers and field supervisors can provide comments and assessment management from applying student internships.
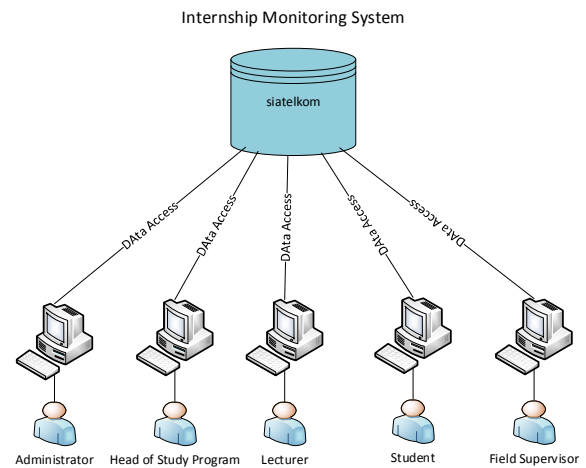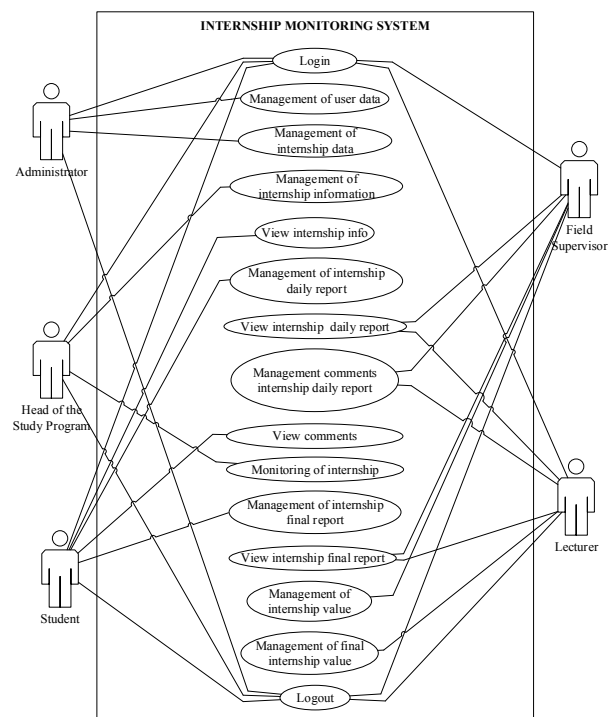

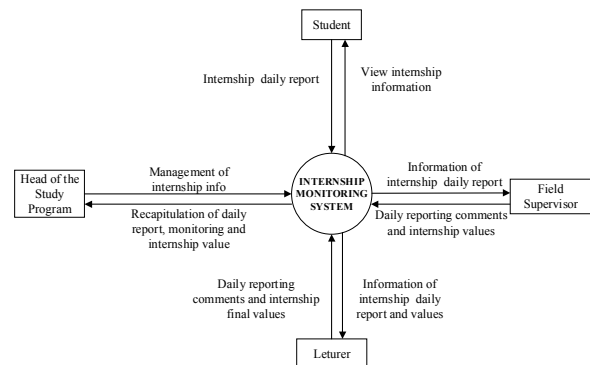Fig 3. System Architecture

Fig 4. Use Case Diagram

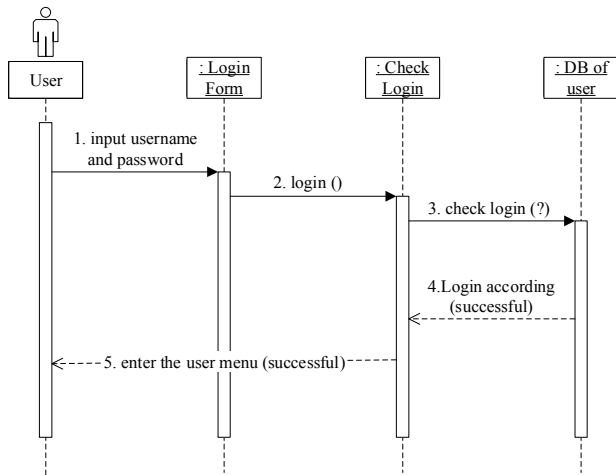Fig 5. Data Flow Diagram

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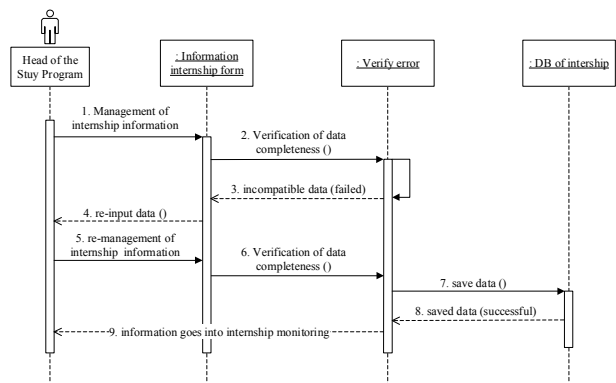Fig 6. Sequence Diagram Login

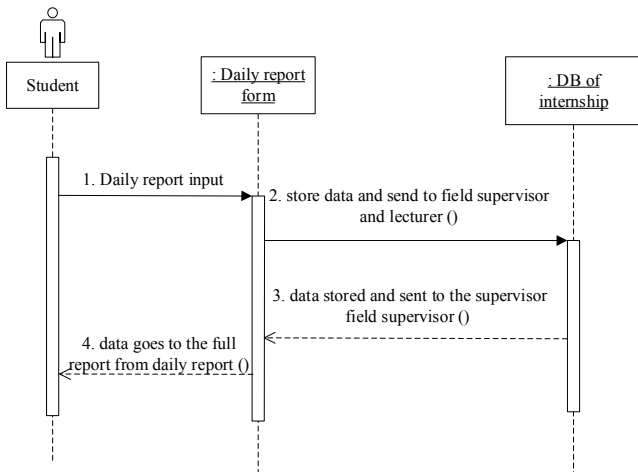Fig 7. Sequence Diagram Internship Info Management
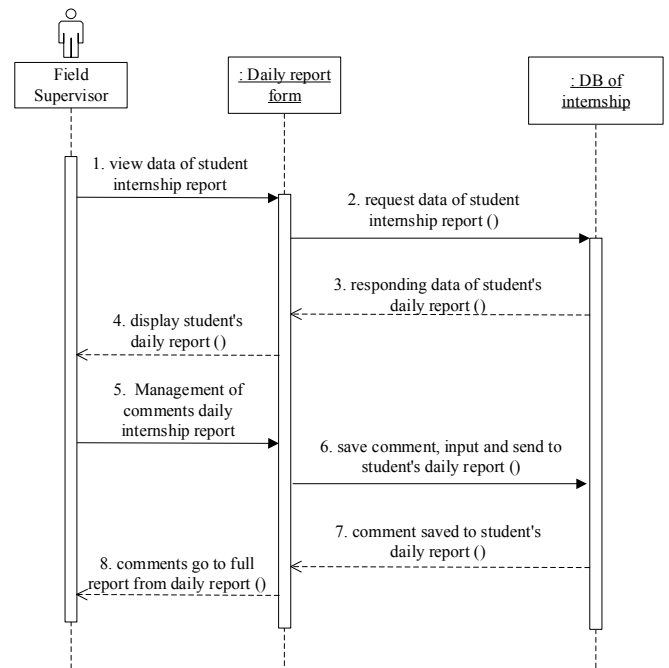

Fig 8. Sequence Diagram Daily Internship Report

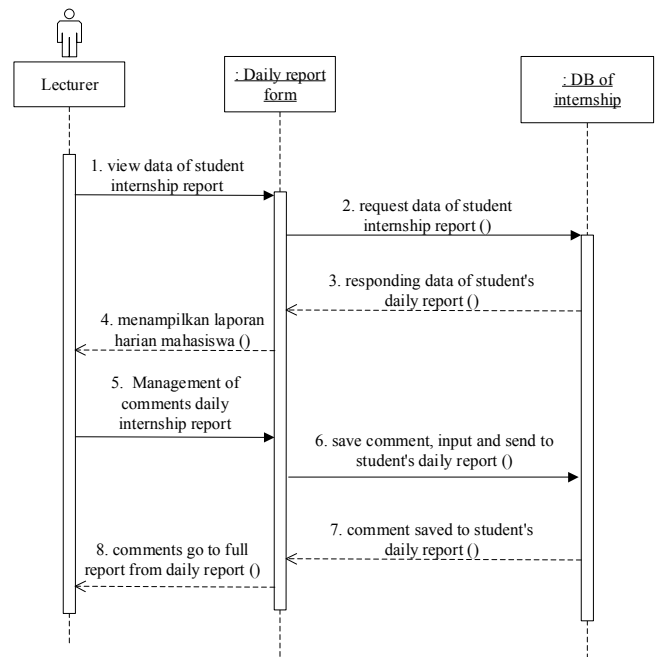Fig 9. Sequence Diagram Management Comment Report Daily of Field Supervisor

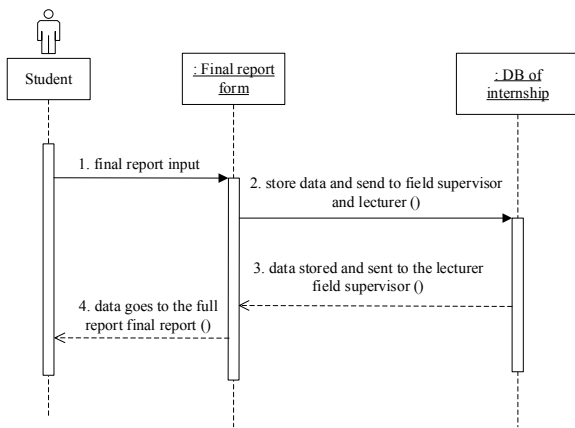Fig 10. Sequence Diagram Management Comment Report Daily of Lecturer

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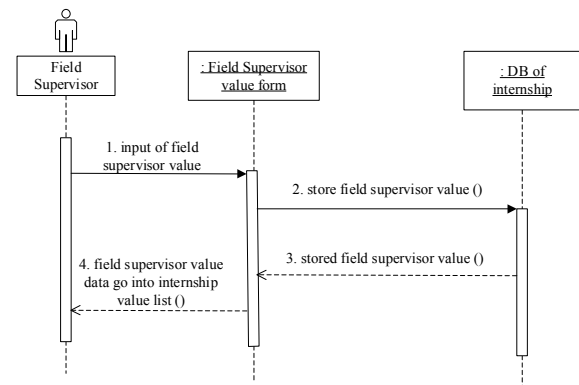
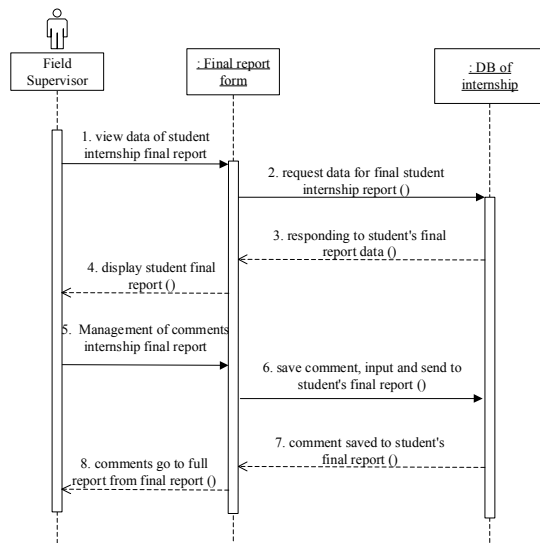Fig 11. Sequence Diagram Final Internship Report

Fig 12. Sequence Diagram Management Comment Final Report of Field Supervisor

Fig 13. Sequence Diagram Management Comment Final Report of Lecturer
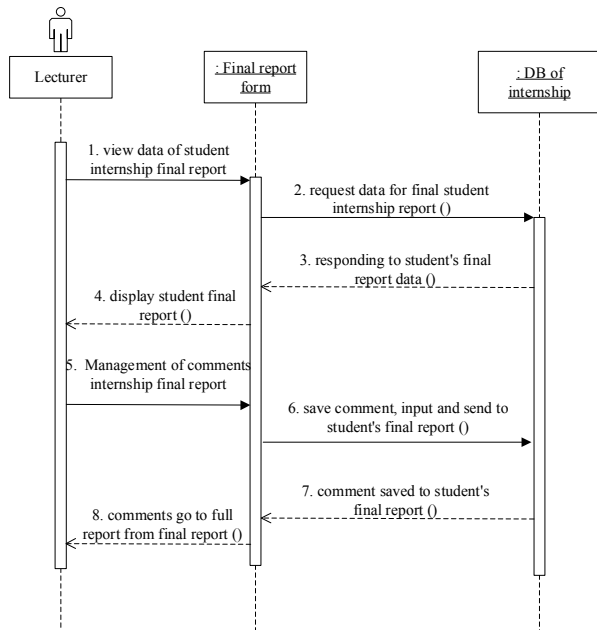

Fig 14. Sequence Diagram Value of Field Supervisor
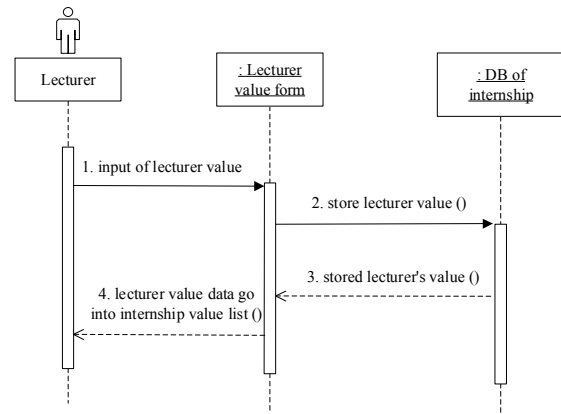
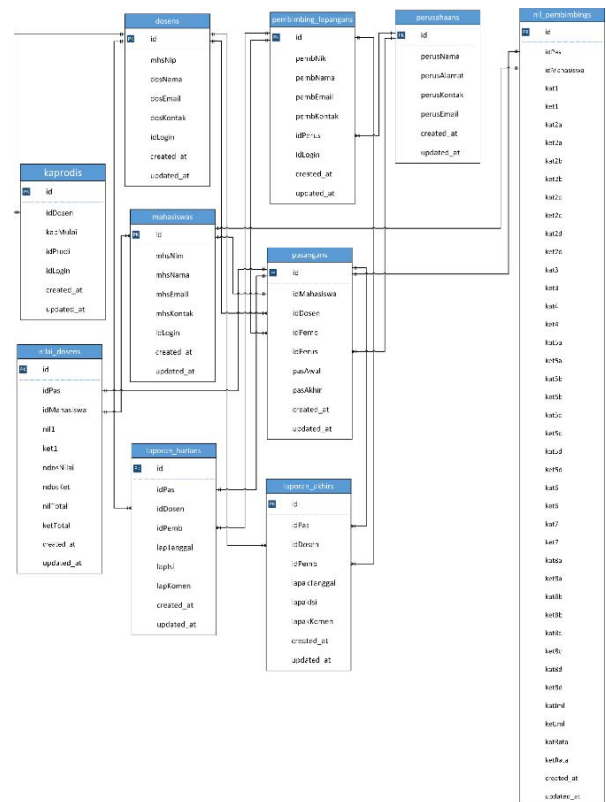Fig 15. Sequence Diagram Value of Lecturer

Fig 16. Entity Relationship Diagram Internship Monitoring System

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Fig. 5. is Data Flow Diagram describes the process of the data flow of each user to the internship monitoring system. Data stream at Head of the Study Program against the system are Head of the Study Program doing internship information management while from the system to Head of the Study Program are providing daily report recap, final report, monitoring and internship.

In Fig. 6. the process of the interaction object login form, login check and DB user in the form of the message against time on the login menu with the actor are the users. In Fig. 7., that is Sequence Diagram Internship Info Management show the process of interaction object form internship info, verify error and DB internship in the form of a message to the time on the internship info menu with the actors is Head of the Study Program.

Fig. 8. is Sequence Diagram Daily Internship Report show the process of interaction object daily report form and DB internship in the form of messages on time on the daily report menu with the actors are students. Sequence Diagram Management Comment Report Daily of Field Supervisor in Fig. 9. shows the process of interaction object daily report form and DB internship in the form of messages on time on the daily report menu with the actor is the field supervisor. Fig. 10. is Sequence Diagram Management Comment Report Daily of Lecturer show the process of interaction object daily report form and DB internship in the form of messages to the time on the daily report menu with the actor is a lecturer.

Sequence Diagram Final Internship Report In Fig. 11. shows the interaction process of the final report form object and the internship DB in the form of a message against time on the final report menu with the actor in the student. Fig. 12. is Sequence Diagram Management Comment Final Report of Field Supervisor Shows the interaction process of the final report form object and the DB internship in the form of a message against time on the final report menu with the actor is the field supervisor. Fig. 13. is on Sequence Diagram Management Comment Final Report of Lecturer shows the process of interaction object from the final report and the DB internship in the form of a message against time on the final report menu with the actor that is a lecturer.

Fig. 14. is Sequence Diagram Value of Field Supervisor show the process of interaction object from the value of supervisor and DB internship in the form of a message against time on the menu of the field supervisor with the field supervisor. Fig. 15. is Sequence Diagram Value of Lecturer show the process of interaction object form lecturer value and DB internship in the form of a message to the time on the lecturer's value menu with the lecturer actor. Relation Database Table of Fig. 16. describes the attributes on a single table that has a relationship with the attribute on the other table.

V. CONCLUSION

From the results and discussion on the design of the internship monitoring system, it can be concluded that the design can be used to assist the process of making information system of internship monitoring in the Telecommunication Engineering Study Program of the Politeknik Negeri Semarang. The design can overcome and meet the shortcomings that have occurred in the information system.

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