Abstract — The Development of Portal Elektro Information System is carried out to create solutions for administrative problems related to Internship and Final Project, especially students, lecturers, and Electrical Engineering staff. Moreover it is an effort to improve the quality of the system to be more innovative and support the needs of Electrical Engineering study program. The System of Portal Elektro covers student needs to carry out internship or final project, starting from implementation guidelines, proposal writing, until becomes final report. This information system is developed with Rapid Application Development method, and use Laravel framework with the concept of MVC (Model, View, Controller) which can separate application based on application components, such as: manipulation data, controller, and user interface. With the RAD method and Laravel framework, application development can be done quickly and structured making it easier for further development in the future. The developed system has been successfully tested and applied in the Electrical Engineering study program at UNS and is planned to be implemented in several other study programs.

Keywords — Information system, Laravel, MVC, RAD

I. INTRODUCTION

An information system is a set of components that connect, collect, process, store, and distribute information to support decision making and monitoring in an organization. Currently, information systems cannot be separated from computer technology which is developing very rapidly along with increasingly complex human needs [1].

The use of a computerized system is expected to minimize errors made by humans and can streamline the time to complete work quickly and accurately [2]. In addition, a computerized system can function as a data manager to present interactive and communicative information. Do not miss the academic system of a university where the academic information system is very vital in a university, namely in the form of data information on students, lecturers, staff, list of grades, courses, etc.

The academic system can be implemented in the form of a web, so that students and lecturers can easily access it using a cellphone even if there is an internet connection. The web is created using the PHP programming language and SQL database which are open source programs and are very commonly used [3].

The current Information System can only be used for Internship administration, while for the Final Project using a blog made using the Google site, it is necessary to develop an information system that can handle Internship and Final Projects in one container so that the data used more efficient.

This Information System use Laravel framework with the MVC concept (Model, View, Controller) which can separate applications based on application components, such as manipulating data, controllers, and user interfaces. So that model components are easier to implement, test, and maintain, because all access to the model goes through these components. The main goal of developing using the Laravel framework is to help developers work on applications faster. In addition to using the Laravel framework, the development of this information system uses the Rapid Application Development (RAD) development method.

The development of the Information System is an effort to improve the quality of the system to be more innovative and can support the needs of the Electrical Engineering study program. This system consists of an administrative system Internship and Final Projects for Electrical Engineering students. This system covers student needs to carry out internship and final project, from implementation guidelines and proposal writing, to final report.

II. RESEARCH METHOD

A. Software Development Method

Internship and Final Project Management Information System is developed by using the Rapid Application Development (RAD) with the following steps:

1) Requirements Planning
   a. User and analyst meet to identify the purpose of the application or system
   b. Oriented to solving business process

2) Design Workshop
   a. Design and improvement phase
   b. Programmer and analyst create and present user interface design and user flowchart

3) Implementation
   a. Implementation and application system testing
B. Testing Method

Black Box is software testing method that is used to examine the external work of the system such as the input/output of the system, the expected results, and the user interface whether the system has been made according to the design [23].

Tabel 1. Black Box Test Form

<table>
<thead>
<tr>
<th>No</th>
<th>Function</th>
<th>Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Login Process</td>
<td>Entering the user’s email and password then checking the user data based on the input that has been entered</td>
</tr>
<tr>
<td>2</td>
<td>Internship Registration Process</td>
<td>Save data internship to the database</td>
</tr>
<tr>
<td>3</td>
<td>Internship Seminar Registration Process</td>
<td>Save data internship seminar to the database</td>
</tr>
<tr>
<td>4</td>
<td>Process of Displaying Data</td>
<td>Fetch and display data from the database to a web page</td>
</tr>
<tr>
<td>5</td>
<td>Process of Updating Data</td>
<td>Perform data updates</td>
</tr>
<tr>
<td>6</td>
<td>Final Project Registration Process</td>
<td>Save data final project to the database</td>
</tr>
<tr>
<td>7</td>
<td>Final Project Result Seminar Registration Process</td>
<td>Save data final project result seminar to the database</td>
</tr>
<tr>
<td>8</td>
<td>Thesis Defense Registration Process</td>
<td>Save data thesis defense to the database</td>
</tr>
<tr>
<td>9</td>
<td>Process Print Report</td>
<td>Display report</td>
</tr>
<tr>
<td>10</td>
<td>Logout Process</td>
<td>Delete user session and redirect to the dashboard page</td>
</tr>
</tbody>
</table>

III. RESULTS AND ANALYSIS

A. Design and Implementation of Internship and Final Project Management System

The implementation of the user interface in the Information System of Internship and Final Project Management is design-based that had been made by the user. Internship and Final Project can be accessed using many types of browsers on page https://si.ft.uns.ac.id/portalelektro.

B. Software Testing using Black Box Method

1) Login Process

Login Process is the process where the user enters/inputs the email and password into the Login modal and will be redirected to the dashboard page when the user enters the data correctly.

2) Internship Registration Process
3) Internship Seminar Registration Process

Process of Saving Data Internship Seminar to the database.

4) Process of Displaying Data

Process of Displaying Data is the process of retrieving data from the database and displaying it on a page on the website.

5) Process of Updating Data

Process of Updating Data is the process of changing data and saving it into a database.

6) Final Project Registration Process

Process of Saving Data Final Project Registration to the database.

7) Final Project Result Seminar Registration Process

Process of Saving Data Final Project Result Seminar to the database.

8) Thesis Defense Registration Process

Process of Saving Data Thesis Defense to the database.
9) Process Print Report

Fig 11. Print report

Process of Displaying report data.

10) Logout Process

Fig 12. Logout process

Logout Process is the process of leaving the current session, it will redirect the user to the dashboard page.

IV. CONCLUSION

The System of Internship and Final Project Management System is designed by the user and with several improvements to the system based on user request. The Information System of Internship and Final Project is implemented for real Internship and Final Project in the Electrical Engineering Study Program. The software testing result to the Information System of Internship and Final Project using Black Box Testing show that the function of the systems is working properly.

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REFERENCES


