



Web-Based Student Thesis Information System of Electrical Engineering Department Trunojoyo University Madura

Diana Rahmawati ^{a,1}, Muhammad Ilham Rasyidib ^{a,2,*}, Riza Alfita ^{a,3}, Miftachul Ulum ^{a,4}

^a Prodi Teknik elektro, Fakultas Teknik, Universitas Trunojoyo Madura, Jl. Raya Telang, Bangkalan 69162, Indonesia

¹ diana.rahmawati@trunojoyo.ac.id; ² ilham1rasyidi@gmail.com ^{*}; ³ riza.alfita@trunojoyo.ac.id;

⁴ miftachul.ulum@trunojoyo.ac.id;

^{*} corresponding author

ABSTRACT

Keywords

Information System

Thesis

Mini PC

Database

HTML

The management of student academic data in thesis files in the Electrical Engineering Department, Trunojoyo University Madura (UTM) is still manual, resulting in a waste of time and energy in delivering information. In this study, the current system flow in UTM electrical engineering is described, then carried out by designing an effective system. The system design consists of a database design process. The system design consists of the database design process, web-based user interface design, and HTML creation (HyperText Markup Language). Designing a web-based thesis information system is the purpose of this study. It is displayed through a 50" inch monitor using a mini PC to present thesis information, progress in thesis work, details of the load supervisors, facilities that support students, and admins in making thesis administrative completeness. Later the system is designed to have a valuable database for storing data and a web-based user interface to enter and retrieve the required data to be accessed anywhere, by several users en masse via an internet connection. The information presented is up to date.

1. Introduction

The development of information and communication technology positively impacts supporting governance. The result of computerization in management has made it easier and saves time to complete tasks that still use conventional systems [1]. The perceived impact of this development is that information technology tends to be in management and scheduling [2].

At the University of Trunojoyo Madura, the Electrical Engineering study program, thesis administration activities are still manual. This activity includes registration for proposal seminars and thesis sessions, as well as thesis archiving of students who have graduated. Some of the current difficulties are the administrator's negligence in proposing to support final year students in completing their thesis files, as well as the inefficiency of the lecturers in monitoring the students they serve. Another problem is the registration system for proposal seminars and thesis examinations that are manual and ineffective because student files are sometimes lost, and some are still incomplete.

2. Proposed Method / Algorithm

2.1. Thesis

"Scientific papers are part of higher education academic requirements and written by students. All undergraduate students are required to take a thesis course, to get a bachelor degree and complete their studies according to their scientific field" [3]. The thesis is a prerequisite of it all. Students who are writing thesis research must analyze the problems and study the analysis taken based on the proposals submitted during the proposal seminar.





2.2. Information Systems

"As the totality of the set of parts or subsystems that interact with each other and operate together to achieve a certain goal in an environment" [4]. The definition is to increase the knowledge of people who use data using a set of data that has been processed in such away. Another explanation is processing data to be changed for the recipient to make it more useful. So. It can be summarized into a system within the intended organization to obtain information, communication, process transactions, and use it in decision making.

2.3. Database

A database is a collection of several data connected from one data to another. Managed data is stored on computer hardware and collected using software to obtain essential data sets. The database itself is a vital component, one of which is in an information system, because it is the basis for providing information to users. "The database system is an information system that integrates collections of data that are interconnected with one another and make it available for various applications within an organization" [5].

Data sets that are interconnected are integrated by a database system, an information system that makes it available within the organization for various applications.

2.4. XAMPP

"XAMPP is a software that functions to run PHP-based website and uses a MySQL data processor on a local computer. XAMPP acts as a web server on a computer" [6]. "For Linux, the installation process uses the command line, while for Windows, the installation process uses a graphical interface so that it is easier to use XAMPP on Windows compared to Linux. In XAMPP, three main components are embedded: the Apache web server, PHP, and MySQL.

2.5. MySQL

"MySQL is a software SQL database management system known as DBMS (database management system). This database is multithread, multi-user. MySQL is built, distributed and supported by MySQL AB. MySQL AB is a commercial company financed by MySQL developers. Other than that, Another advantage of MySQL is that it uses the standard SQL (Structured Query Language) query language" [7]. SQL is a structured query language. SQL has been standardized for all database accessing programs such as Oracle, Postgres SQL, SQL Server, etc.

2.6. HTML

"HTML (HyperText Markup Language) is a standard programming language used to create and display web pages, which can then be accessed to display various information in an internet web browser (Browser)" [8]. HTML is used as a link between files on a site or a computer using localhost or links between locations on the internet.

2.7. CSS

"Cascading Style Sheet (CSS) is a language that works with HTML documents to define how the content of a web page is displayed or presented" [9]. This presentation includes the style or style of text, links, and page layout. With technology like this, we can sort or separate the code for web pages' content, and the code explicitly needed to handle the display.

2.8. PHP

Hypertext Preprocessor is an open-source web server-side programming language. PHP is a script integrated with HTML on the server (server-side HTML embedded scripting). "PHP is a script that is used to create dynamic web pages. Dynamic means that the page to be displayed is created when the page is requested by the client" [10].



3. Method

3.1. ERD (Eternity Relationship Diagram)

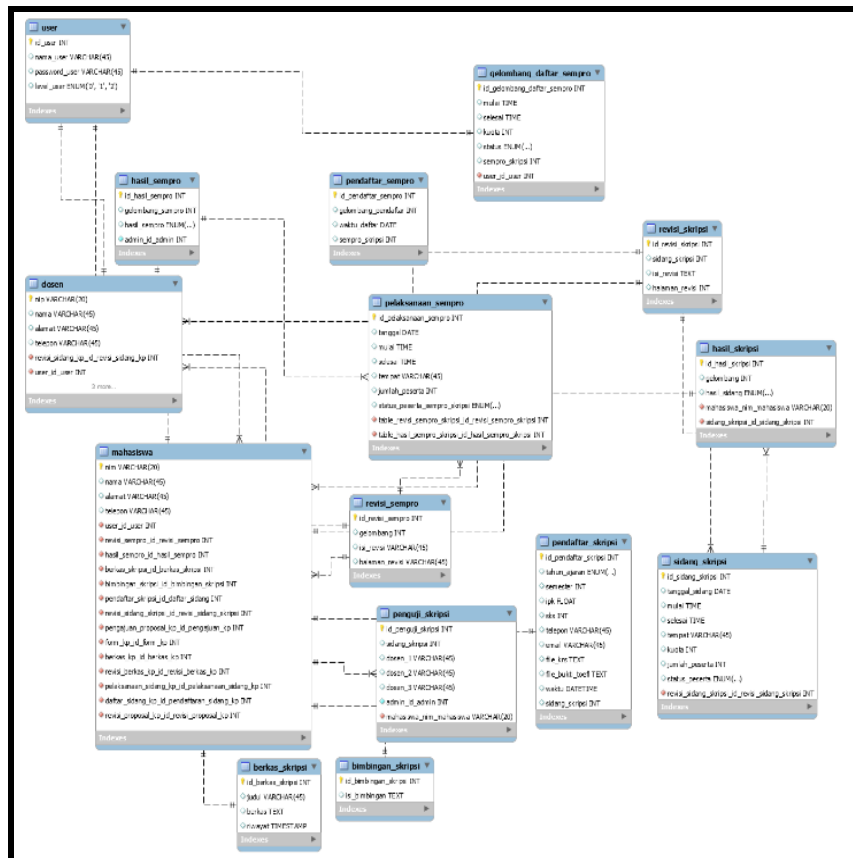


Fig. 1. ERD (Entity Relationship Diagram)

ERD (Entity Relationship Diagram) in this study is useful as a database on the web. Database design using ERD, this method presents data using Entity and Relationship.

1. Table User

Table 1. Tabel User

No.	Column Name	Data Type	Length	Information
1.	id	Varchar	20	Primary Key
2.	password	Varchar	20	-
3.	level	Enum	Admin, Dosen, Mahasiswa, Admin Fakultas, Admin Lab	-

Table Name : user
 Primary Key : id
 Foreign Key : -
 Function : Used to provide the level and password for each id

2. Student Table

Table 2. Student Table

No.	Column Name	Data Type	Length	Information
1	Id	Varchar	20	Primary Key
2	Name	Varchar	50	-
3	dosen_wali	Varchar	20	-



Table Name : Student
 Primary Key : id
 Foreign Key : -
 Function : Used to store student data

3. Lecturer Table

Table 3. Lecturer Table

No.	Column Name	Data Type	Length	Information
	id	Varchar	20	Primary Key
	Name	Varchar	50	-

Table Name : Lecturer
 Primary Key : id
 Foreign Key : -
 Function : Used to store Lecturer Data

3.2. WEB Design

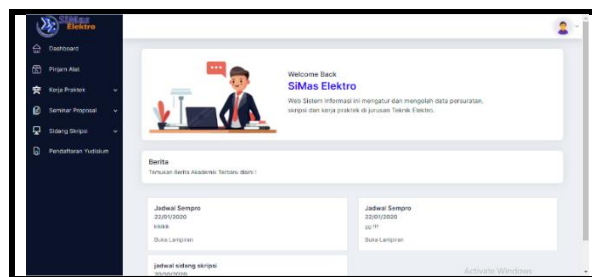


Fig. 2. WEB Design (Students)

There are headers, footers, menus, and contents on web pages in this web design. The Contents section of the Web Design Page contains updates to the system that each user will work on. The Menu section of the Web Design page for each user is different. Figure 2. is a screenshot of the student Web display.

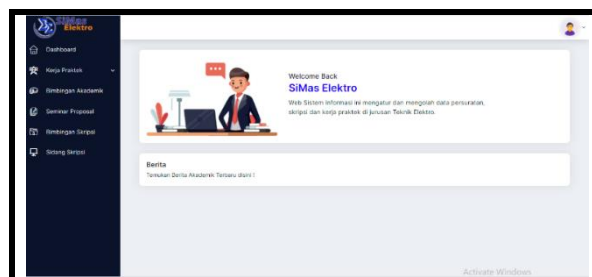


Fig. 3. Web Design (Lecturer)

The Web Design shows the Dashboard of the Lecturer User. On that page, a menu that is not in Student is shown.

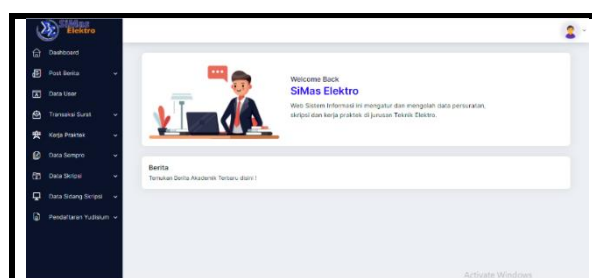


Fig. 4. Web Design (Admin)

The Web Design shows the Dashboard of the Admin User. A menu for adding users is displayed on that page, and the admin and students and lecturers can do several accesses.

4. Results and Discussions

In the results of hardware design in this study, there are several tools needed in this Electrical Engineering Information System:

4.1. Results of Software Design

1. Login

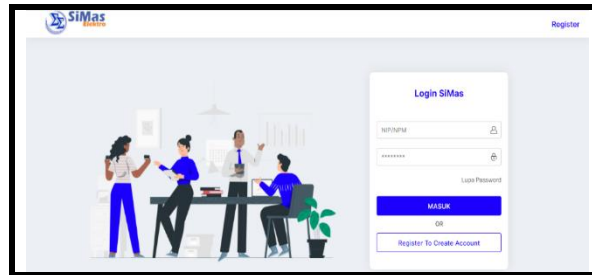


Fig. 5. Login

The user is required to enter the user ID and password that has been registered in the database by the Information System. If it is correct to enter data and want to do all activities, the user will be directed to the dashboard page.

2. Dashboard

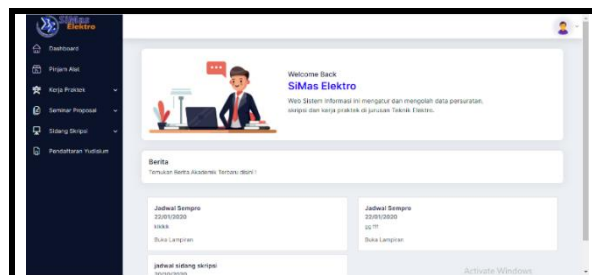


Fig. 6. Dashboard

After the user performs the login authentication process, the next will go to the dashboard page. The appearance on the page is still the same, but what distinguishes it is that the "Administration" menu has a *Dashboard* menu, guides, user data, letter transactions, seminar proposal data, thesis data, thesis trial data, experimental work data, an experimental work trial data. And Faculty Admins have Dashboard menus, guides and cover letters.

3. List of Seminar Proposal

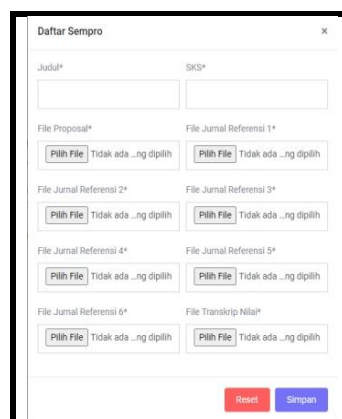


Fig. 7. List of Seminar Proposal

The list on this page is a page for registering for a seminar proposal on the condition that the seminar proposal registration is opened, a plagiarism check letter of at least 20%. The list can be accessed by students, lecturers, and admins. However, the list on this page is accessed by students.



4. Seminar Proposal Result

NIM	NAMA	JUDUL	TOOL
140431100001	Luoman Hardianto	Judul TA 001	[Buka] [Set Lolos] [Set Tidak Lolos]
140431100002	Mutara Hikmah	Judul TA 002	[Buka] [Set Lolos] [Set Tidak Lolos]
140431100003	Ainur Risal	Judul TA 003	[Buka] [Set Lolos] [Set Tidak Lolos]
140431100007	Anugerah Syahirdian	Judul	[Buka] [Set Lolos] [Set Tidak Lolos]
140431100008	Adyita Wahyu Pranata	Judul Semprompro	[Buka] [Set Lolos] [Set Tidak Lolos]

Fig. 8. Seminar Proposal Result

The results are a page to see the results of the proposal seminar held by students after registering for the seminar proposal and proposal exam. The results can be accessed by students, lecturers, and admins

5. The registrant of the Thesis Exam

WAKTU DAFTAR	NIM	NAMA	JUDUL	SEMESTER	GELOMBANG	TOOL
2020-03-28 14:04:16	140431100008	Adyita Wahyu Pranata	Judul Semprompro	genap (Semester ke-12)	3	[Buka] [Set Lolos]
2020-10-01 23:55:52	140431100007	Anugerah Syahirdian	Judul	ganjil (Semester ke-13)	3	[Buka] [Set Lolos]

Fig. 9. The registrant of the Thesis Exam

The list on this page is the page that is used to register for the Thesis Exam with the requirements of conducting guidance at least eight times to the supervisor, completing at least 80% of the thesis, obtaining approval to attend the trial from the two supervisors, having taken the TOEFL test with the acquisition of minimum score 450.

6. Thesis Exam Result

GELOMBANG	TOTAL PESERTA	PESERTA LOLOS	TOOL
Gelombang 1	0	0	[Buka] [Set Lolos]
Gelombang 2	0	0	[Buka] [Set Lolos]
Gelombang 3	2	-	[Buka] [Set Lolos]

Fig. 10. Thesis Exam Result

On this page, the results are the pages used in viewing the results of the thesis exam that students have carried out after conducting a list of trials and thesis trials, with the requirements of passing approval by the lecturer. The results can be accessed by students, lecturers, and admins.

5. Conclusions

- From the results of the design and application of the thesis information system that has been completed, the conclusion is that the purpose of the information system is to facilitate the management and students in the field of proposal seminars and thesis conferences. The system has four users, namely admin, lecturers and students who can be accessed by seminar proposal users and a thesis conversation information system logged in according to registration data;
- Then PHP programming and MySQL database build the system and run using a web browser.



References

- [1] K. Karmila, A. R. Tanjung, and E. Darlis, "Pengaruh Kapasitas Sumber Daya Manusia, Pemanfaatan Teknologi Informasi, Dan Pengendalian Intern Terhadap Keterandalan Pelaporan Keuangan Pemerintah Daerah (Studi Pada Pemerintah Provinsi Riau)," *Sorot*, vol. 9, no. 1, pp. 25–42, 2014.
- [2] D. Setiawan, "Dampak perkembangan teknologi informasi dan komunikasi terhadap budaya," *JURNAL SIMBOLIKA: Research and Learning in Communication Study (E-Journal)*, vol. 4, no. 1, pp. 62–72, 2018.
- [3] J. I. Maanari, R. Sengkey, H. Wowor, and Y. D. Y. Rindengan, "Perancangan Basis Data Perusahaan Distribusi dengan Menggunakan Oracle," *Jurnal Teknik Elektro dan Komputer*, vol. 2, no. 2, 2013.
- [4] R. Asmara, S. Kom, and M. Kom, "Sistem Informasi Pengolahan Data Penanggulangan Bencana Pada Kantor Badan Penanggulangan Bencana Daerah (BPBD) Kabupaten Padang Pariaman," *Jurnal J-Click*, vol. 3, no. 2, 2017.
- [5] B. Akiwate, A. Patel, T. Nabiwale, N. Naik, and S. Patil, "Web based student information management system using MEAN Stack," *Int. J. Adv. Res. Comput. Sci. Softw. Eng.*, vol. 6, no. 5, pp. 357–362, 2016.
- [6] P. Hidayatullah, "jauhari khairul kawistara. 2014. pemrograman web," *Bandung: informatika bandung*.
- [7] S. R. Bharamagoudar, R. B. Geeta, and S. G. Totad, "Web based student information management system," *International Journal of Advanced Research in Computer and Communication Engineering*, vol. 2, no. 6, pp. 2342–2348, 2013.
- [8] Z. Arifin, D. Rahmawati, and H. Sukri, "Rancang Bangun Sistem Informasi Perpustakaan Menggunakan Radio Frequency Identification Berbasis Internet of Thing," in *Seminar Nasional Fortei*, 2020, pp. 3–7.
- [9] S. Maharani, P. P. Widagdo, and H. R. Hatta, "Rancang Bangun Sistem Informasi Praktek Kerja Lapangan (PKL) di Fakultas Ilmu Komputer dan Teknologi Informasi Universitas Mulawarman," *Jurnal Ilmiah Ilmu Komputer*, vol. 13, no. 2, pp. 71–75, 2018.
- [10] I. Sidharta and M. Wati, "Perancangan Dan Implementasi Sistem Informasi Kependudukan Dan Surat-Menyurat," *J. Comput. Bisnis*, vol. 9, no. 2, pp. 95–107, 2015.





This Page Intentionally Left Blank