

Web-Based Management Information System for Pesantren Muhammadiyah

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Abstract: The Pesantren Muhammadiyah Development Institute (LP2M) is in charge of data management, licensing, and management of Pesantren Muhammadiyah, but it still manually processes Islamic boarding school databases. This often causes several problems, including time, process, and reporting. Data changes are relatively long, and the level of accuracy could be higher. One of the database management systems considered the most relevant is implementing a web-based management information system for Pesantren Muhammadiyah. The implementation of this website-based management information system can be accessed easily, quickly, and accurately. This implementation uses the development Life Cycle (SDLC) development methodology or the Waterfall model. The Waterfall method helps input Islamic boarding school data and makes it easier to register or change it quickly, efficiently, and accurately. PHP as a scripting language, Xampp web server, and MySql as a database are the tools needed to design this application. The results of this study were successfully presented with 85% usability. They provided convenience for LP2M in processing and managing the Pesantren Muhammadiyah database accurately, quickly, and precisely, making it easier to provide services and make decisions or improve data effectively and efficiently.

Introduction

The Pesantren Management System is an integral part of managing and controlling the growth and quality of Pesantren. Data collection and processing and data analysis are carried out to obtain fast and accurate information to be presented according to the essential needs to support decision-making (Jogiyanto, 2005). This is also useful in improving services and making searching, registering, or updating pesantren data easier. Data is valuable information for recipients in current and future decision-making (Ladjamudin, 2019). Therefore, a data processing system is needed that can produce accurate, efficient, and reliable information. In this regard, data and information play an essential role as raw input that underlies the preparation of Islamic boarding school programs and planning. A data management system and Islamic boarding school information are needed to support data processing into the required information.

The Muhammadiyah Central Leadership through the Pesantren Muhammadiyah Development Institute (LP2M) needs this Islamic Boarding School management data and information system. As an institution that oversees Pesantren Muhammadiyah, LP2M is obliged to develop and improve the quality of services and supervision related to systems, facilities and infrastructure, teaching staff, learning systems, budgets, and

educational assistance, including numbering (codification of Islamic boarding schools), updating, adding or changing Islamic boarding school data to the eligibility of the identity of Pesantren Muhammadiyah. With the increasing number of Pesantren Muhammadiyah, more data and information management are needed for Islamic boarding schools. Data redundancy can quickly occur because the system is still manual. Therefore, the increasing number of Islamic boarding schools, students, educators, and managers, budgets and assistance, and the increasingly complex implementation of Islamic Muhammadiyah Arabic and English (*ismubaris*), require an accurate and efficient Pesantren management information system.

This study designs a management information system for Pesantren Muhammadiyah that records, monitors, and processes data from Pesantren Muhammadiyah to support data collection related to the management of these schools. Data collection is managed effectively, and fast, accurate, and relevant reports can be generated to improve the quality of Islamic boarding schools. The goal is to solve the data processing problem in Pesantren Muhammadiyah to make it faster, more efficient, and more controlled.

In detail, the management information system for the Pesantren Muhammadiyah instrument can be developed from the guidelines and guides for the implementation of Pesantren Muhammadiyah that have been Tanfidz by continuing to adapt the components and instruments contained in the accreditation of schools and Islamic boarding schools as stated in the Muhammadiyah Central Leadership Guidelines number 01/PED/I.O/B/2018 concerning Muhammadiyah Elementary and Secondary Education. Thus, eight components can generally be determined as the minimum assessment standards for the Muhammadiyah Progressive Islamic Boarding School Management System based on the system: (1) Graduate Competency Standards. (2) Content Standards, (3) Process Standards, (4) Educator and Teaching Staff Standards, (5) Management and Financing Standards, (6) Facilities and Infrastructure Standards, (7) Education Assessment Standards, and (8) Muhammadiyah Islamic Standards, Arabic, English (*lshmubaris*) (Muhamamdiyah, 2018).

The above standards are also an accreditation instrument for Pesantren Muhammadiyah. This instrument will not only help Pesantren Muhammadiyah prepare themselves for external accreditation to obtain legal recognition from the government but also function as an instrument for sorting, selecting, and determining their eligibility. This instrument is the foundation for building and designing the implementation of the management information system for Pesantren Muhammadiyah. The current LP2M data and information management system is semi-conventional. Where data input still uses Microsoft Access. The limitations of Microsoft Access products are an obstacle for Islamic boarding schools and LP2M in the validation process or improving Islamic boarding school data.

Moreover, the development of Islamic boarding schools is increasing. Thus, it requires well-organized software that makes Islamic boarding school information and data easy to access and understand and contains all the data needed to make a decision or execute. Based on this topic, this study will create an application for implementing a web-based management information system for Pesantren Muhammadiyah.

Method

Data collection methods are a set of procedures or techniques used to collect

information or data from the topic of investigation. The author collects data using various techniques. First, Observation. Observation is carried out by conducting direct and indirect observations of the object to be studied, namely the Muhammadiyah Regional Leadership of DKI Jakarta, in order to find out the workflow of the system that runs well, the data collection system, and the data management system of the Pesantren Muhammadiyah and the obstacles faced related to the theme discussed. When conducting observations, it was carried out in the data collection section of the Elementary and Secondary Education Desk of PWM DKI Jakarta to see the Islamic Boarding School data that was spread in the form of forms and collected again and to see Islamic boarding school data starting from general Islamic boarding school data, student data, Islamic boarding school staff data, facilities and infrastructure, and the *Ishmubaris* curriculum. In addition, see examples of Islamic boarding school data made in the form of reports recorded in the Pesantren Muhammadiyah statistics book.

Second, Interviews. Interviews are conducted by directly and indirectly exploring sources of information about an object being studied, the Muhammadiyah DKI Jakarta Regional Leadership. Interviews are conducted with the Leadership of the Muhammadiyah Elementary and Secondary Education Council, which oversees the Muhammadiyah DKI Jakarta Islamic Boarding School. I also worked as a data collection and management officer for the Muhammadiyah DKI Jakarta Regional Leadership Islamic Boarding School. With interviews, researchers are expected to be able to find out the flow of the data collection/data processing process and management of the Pesantren Muhammadiyah DKI Jakarta Database Management. Third, Literature Study. Literature study is conducted by utilizing books or journals to be studied and read to find data in the form of information related to the topics and problems in the research. This study presents system analysis and development using the Waterfall Model.

Result and Discussion

Result

Implementing the web-based management information system for Pesantren Muhammadiyah begins with logging in to the application with the username and password registered in the system. After successfully logging in, the main menu will appear which can be used to input data such as Islamic boarding school data, student data, teacher and manager data, facility and infrastructure data (facilities), financial data (assistance and costs), and *Ishmubaris* data. Islamic Boarding School data consists of Islamic Boarding School Standard Number (NSPP), name of Islamic boarding school, address, province, district, telephone number, email, website, level of education, Islamic boarding school organizer, year of establishment, Islamic boarding school vision, Islamic boarding school mission, name of the director, telephone number of the director, history of the Islamic boarding school.

Santri data consists of the number of resident and non-resident students as well as male and female students. Teacher data consists of mudir, vice mudir, number of *ustadz* and *ustadzah*, and the number of male and female TU. Facility or infrastructure data consists of land area, building area, teaching room area, study room, mosque, and dormitory. Financial data consists of education costs, student living costs, Islamic boarding school business, upos (parents of students), regional and central assistance, and fixed and non-fixed assistance. *Ishmubaris* data consists of implementing the *Kemuhammadiyahan* curriculum, *Al Qur'an* lessons, *Aqidah*, *Akhlas*, *Tahsin_Tahfiz*, *Fiqh*, *Tarikh*, Arabic, and English. After the data form is filled in and the evidence is uploaded,

the Islamic boarding school data report is stored in a database application. The Admin of the Islamic Boarding School Development Institute (LP2) of the Muhammadiyah Central Leadership then validates and modifies the Pesantren data. And then publishes it online or on the website.

System Design

Figure 1 shows the System Requirements for implementing the web-based management information system for Pesantren Muhammadiyah in this study.

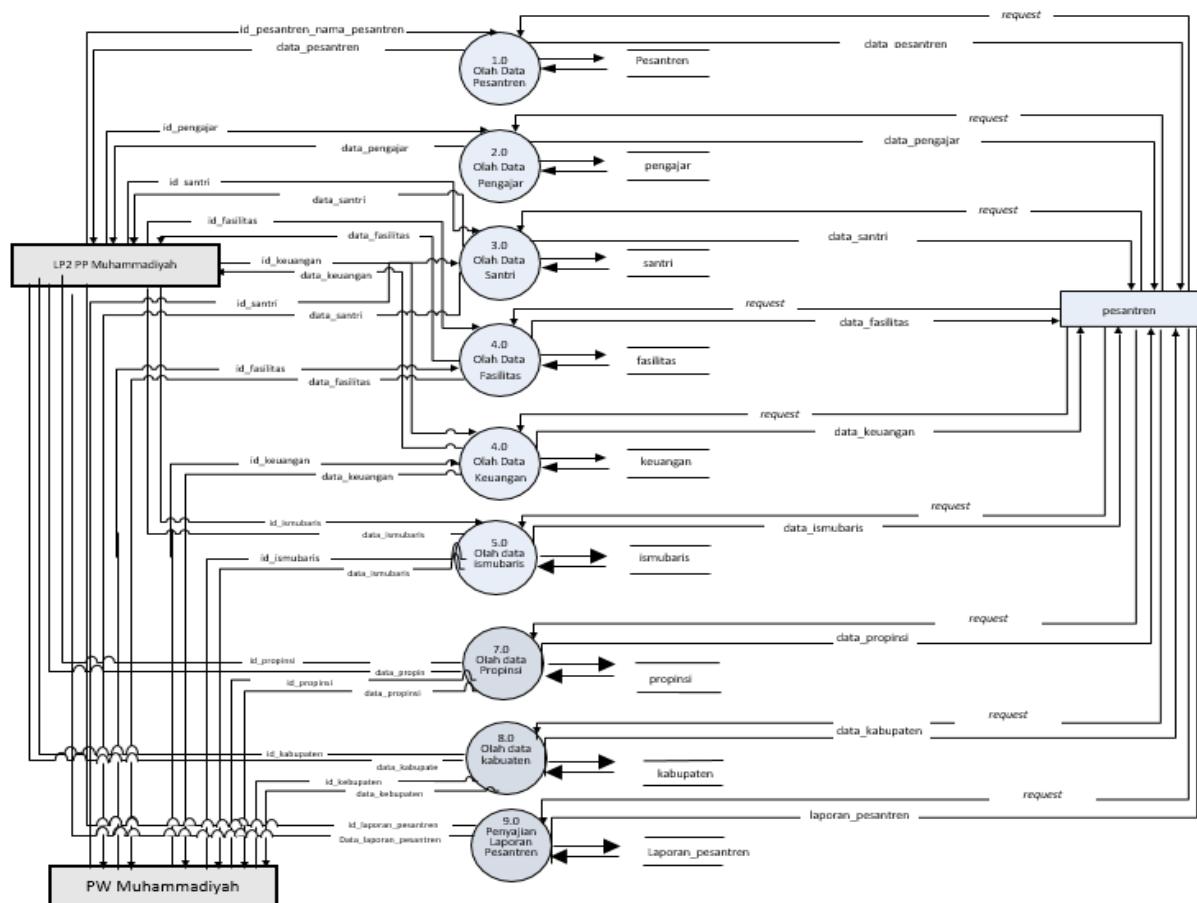


Figure 1. System Requirements for Implementing the Web-Based management information system for Pesantren Muhammadiyah.

Next, the Entity Relationship Diagram (ERD) can be seen in Figure 2.

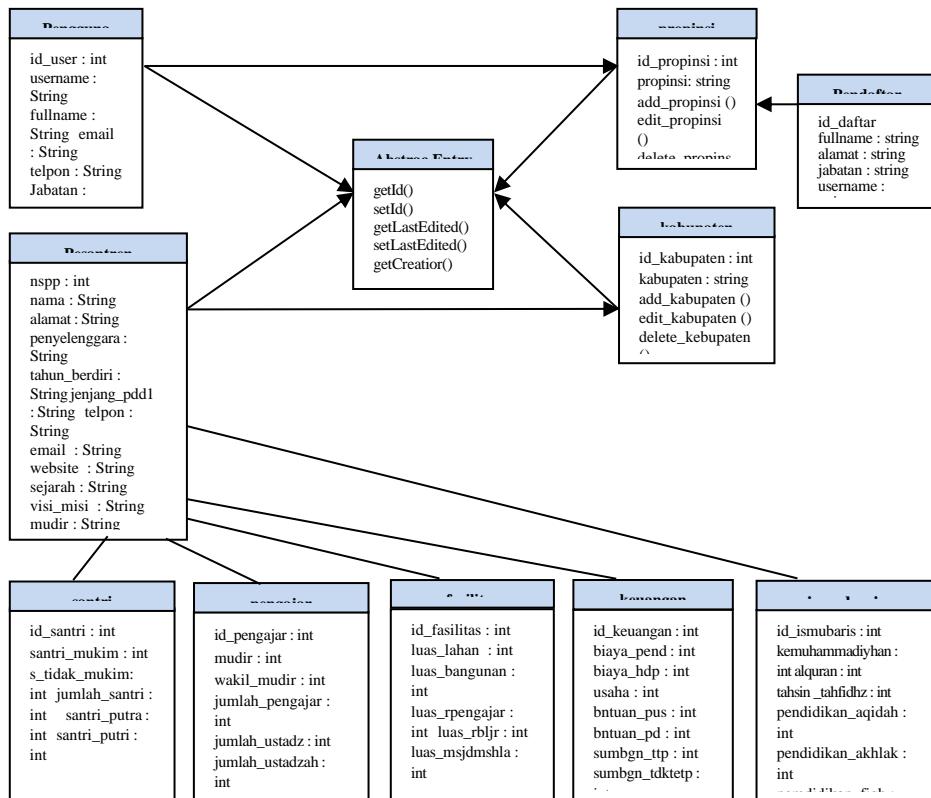


Figure 2. Entity Relationship Diagram (ERD)

Then, Database Relation (Physical Database Schema) can be seen in Figure 3.

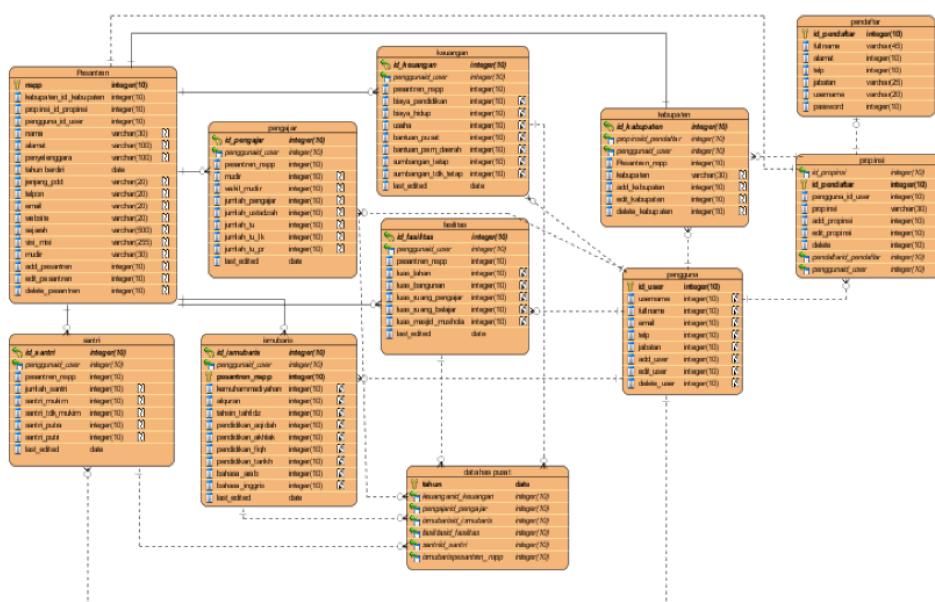


Figure 3. Database Relations (Physical Database Schema)

Next is HIPO in Figure 5.

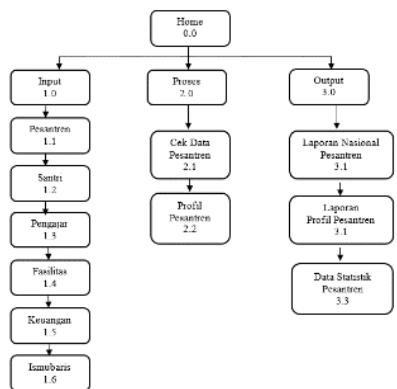


Figure 4. HIPO Structural Design Plan

Figure 6 shows the layer display.



Figure 5. Front Screen View



Figure 6. Login View

SIMTRENMU

HOME INPUT DATA CEK DATA ENTRY DATA

Input Data

Pesantren Santri Pengajar Fasilitas Keuangan Ismubaris

Input data pesantren

NSP
Alamat
Provinsi
Jek
Kabupaten
Jakarta Timur

Figure 7. Data Input Form

Figure 8. Display of Islamic Boarding School Data

Figure 9. Data Entry View

Conclusion

Implementing the web-based Pesantren Muhammadiyah Management System can facilitate and accelerate processing and management by creating, editing, updating, and deleting data, accelerating performance, facilitating data and information searches with data searching facilities, and storing Pesantren Muhammadiyah data. Implementing the web-based management information system for Pesantren Muhammadiyah can minimize the possibility of losing Pesantren Muhammadiyah's data because there is already a data collection system that uses a system implementation with database management, knowing the development of Pesantren Muhammadiyah. It can be used as a basis for improving the quality of service and supervision, both related to system equipment, facilities and infrastructure, teaching staff, learning systems, budgets, and educational assistance, including numbering (codification of Islamic boarding schools), updating, adding or changing Islamic boarding school data to the eligibility of the identity of Pesantren Muhammadiyah.

Acknowledgements

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