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Website-Based Administrative Governance Information System in Lubuk Semantung Village

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Abstract

Lubuk Semantung Village is optimizing administrative governance through the implementation of a new information system. This system was developed using agile methods to adapt to rapidly changing needs. With the integration of modules such as population data management, financial management, activity documentation, and reporting, this system aims to improve efficiency and transparency. Initial results from the implementation show a significant increase in the accessibility of information for residents and the accountability of the village government. This information system is expected to be a pilot model for other villages in improving the quality of administrative governance.

Keywords: *Information System, Administrative Governance, Agile Method*

1. Introduction

Lubuk Semantung Village, as one of the smallest government units, plays a crucial role in supporting development and providing services to the community. In carrying out its functions, village administrative governance often faces significant challenges. Manual administrative processes often result in slow service delivery and the potential for data errors. For example, delays in processing correspondence often result in dissatisfaction among the community. This creates a gap between community expectations and the actual service received. Currently, Lubuk Semantung Village is not equipped with a Village Information System, so correspondence management is not automatically updated by the computer system. Based on the aforementioned issues, the author will develop a website-based information system entitled "Website-Based Administrative Governance Information System in Lubuk Semantung Village."

2. Theoretical Basis

2.1. Understanding Systems

According to[1], a system is defined as a collection of various components that interact with each other. In their study of information systems, [2] define a system as a collection of interrelated information technology components, including hardware, software, data, and procedures used to manage and distribute information to support operational, managerial, and decision-making activities within an organization.

2.2. Understanding Information Systems

According to [3], an information system is a combination of people, technology, processes, and data that work together to collect, store, manage, transmit, and process information within an organization. According to [4], an information system is a system within an organization that meets the needs of daily transaction processing, supports operations, managerial and strategic activities of an organization, and provides certain external parties with necessary reports. Based on the definition above, it can be concluded that an information system is a system that integrates various technological and human components to collect, process, store, and distribute information used to support decision-making, coordination, control, analysis, and planning within an organization. An information system involves a combination of hardware, software, data, procedures, and people who interact with the system to achieve specific goals.

2.3. Understanding Websites

According to [4], a website is a collection of many connected pages used to display information, such as still or moving images, animations, and interconnected sounds. A website network is a collection of information pages provided via the internet, making it accessible worldwide as long as there is an internet connection. According to Rahman [5], in their book "Introduction to Web

Technology," a website is a means of connecting information in the form of text, images, videos, and other content, presented using HTML code and accessible through various internet-connected devices.

2.4. Understanding XAMPP

According to [4], XAMPP is an open-source software that is a development of LAMP (Linux, Apache, MySQL, PHP, and Perl), used as a tool to help develop PHP-based applications. With XAMPP, your work is greatly facilitated because it can install and configure several applications simultaneously and automatically.

2.5. Understanding PHP (Hypertext Preprocessor)

According to Rasmus Lerdorf (the creator of PHP), PHP is a scripting language used to create dynamic web applications. PHP allows developers to write server-side scripts that can access and manipulate databases and generate dynamic HTML pages. PHP is highly flexible and can be used for a wide range of web development projects, from simple websites to complex web applications. According to [6], PHP is classified as open source software regulated by the General Purpose License (GPL). The PHP programming language is well-suited for web development because PHP can be embedded within HTML scripts and vice versa. PHP is specifically designed for dynamic web development.

2.6. Understanding MySQL

According to [7], MySQL is a widely used database system for web application development due to its free nature, simple data management, and high level of data security. According to [8], MySQL is a popular database management system (DBMS) that functions as a relational database management system (RDBMS). Furthermore, MySQL software is an open-source application, and the MySQL database server offers fast, reliable, and easy-to-use performance, working with client-server or embedded system architectures.

2.1. Understanding Codeigniter

According to [9], Codeigniter is a framework created using the PHP programming language, designed to make it easier for programmers to create or develop web-based applications. According to [10], Codeigniter is an open-source web application framework used to build applications using the PHP programming language. Codeigniter utilizes the MVC (Model, View, Controller) model for developing dynamic web applications using PHP.

3. Research Methods

According to [11], a research method is a planned, systematic, scientific, and rational way to gather facts. Based on certain criteria, there are four key words to consider: scientific method, data, objectives, and usefulness. The method used to compile this proposal is descriptive with a qualitative approach, namely a comprehensive, broad, and in-depth description, and data information in the form of verbal sentences, not symbols or numbers. According to [11], qualitative descriptive is a method used to discover knowledge or theories related to previous research through books, national, and international journals. In the review process, researchers look for similarities, identify differences, provide perspectives, summarize, and combine them into new ideas.

3.1. Data collection technique

According to [12], data collection techniques are the methods researchers use to obtain information or research data, and are also strategic steps in research methodology. The techniques used in data collection in this study are as follows:

1. Interview
   Interviews were conducted to collect data directly by conducting questions and answers with the informants. The research conducted interviews with Mr. Kopli as the Secretary of Lubuk Semantung Village regarding problems experienced in the data processing process and services to the village community.
2. Observation
   At this stage, the researcher conducted a direct survey at the Lubuk Semantung Village Office to collect data related to the administrative governance of Lubuk Semantung Village.
3. Library Research
   In this literature study, researchers collect data and information taken from various sources from books, journals, theses and documents related to the system to be built.

3.2. Data source

According to [13], data sources are subjects from which data can be obtained to support researchers in collecting data. The following are the data sources used by researchers in their thesis proposal research:

1. Primary Data
   The primary data source in this thesis is data obtained directly from the informant, namely Mr. Kopli, the village secretary of Lubuk Semantung.
2. Secondary Data
   Secondary data is data that supports primary information obtained from documents, reading materials, the internet, and observation.

4. Proposed Use Case Diagram

Use case is a description of the functionality of a system so that system users can understand and comprehend the usefulness of the system being built.

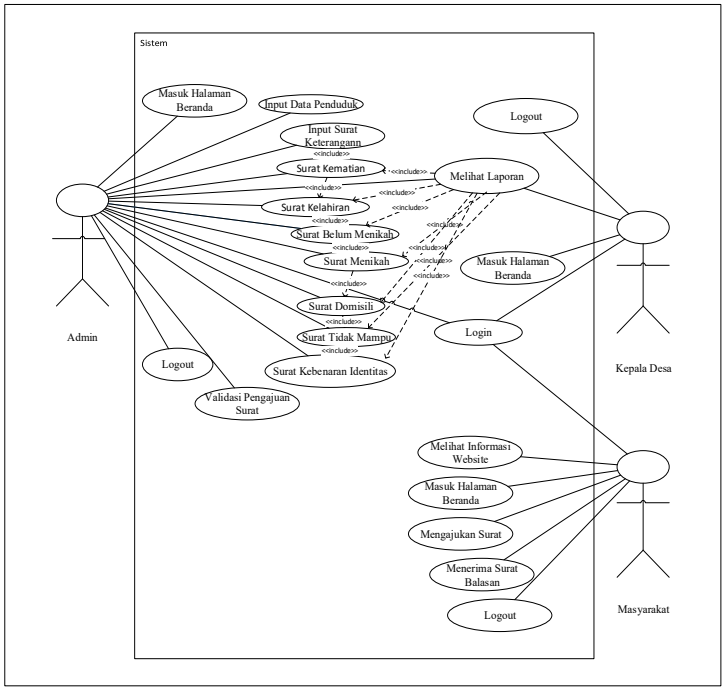

Fig. 1 : Proposed Use Case Diagram

This use case diagram of the governance information system illustrates where the admin must log in first to input resident data, input certificates, validate letter submissions, view reports, and the village head can view reports, and the community can log in, view information, submit letters, and receive letter replies.

5. System Implementation and Testing

5.1. Interface Implementation

Interface implementation is the implementation of the display that will be seen by the user. This is done by designing the interface on a form on the website. The interface implementation must be compatible with the object in question so that the program can be used immediately. The following is included in interface implementation.

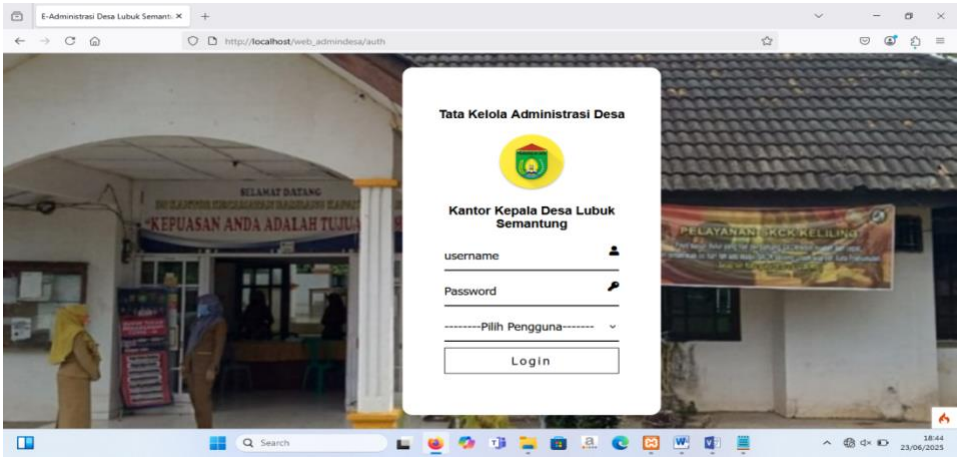

Fig. 2 : Implementation of the admin/village head login page

In the image above is a display of the login page which will later function for admins and village heads who want to enter and use the system, admins and village heads must log in first by filling in their username and password.

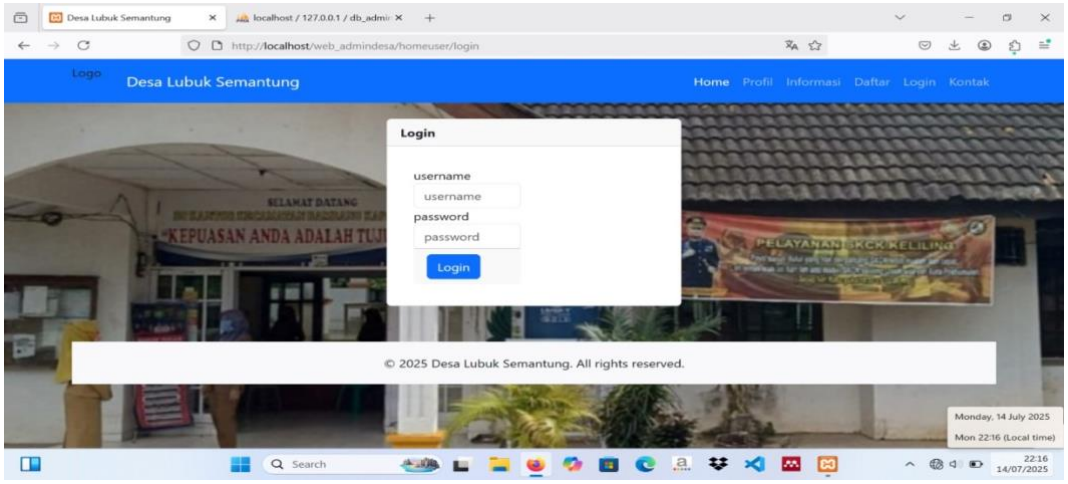

Fig. 3 : Implementation of Community Login Page

The image above shows the login page display which will later function for people who want to apply for a letter. People must first log in by filling in their username and password.

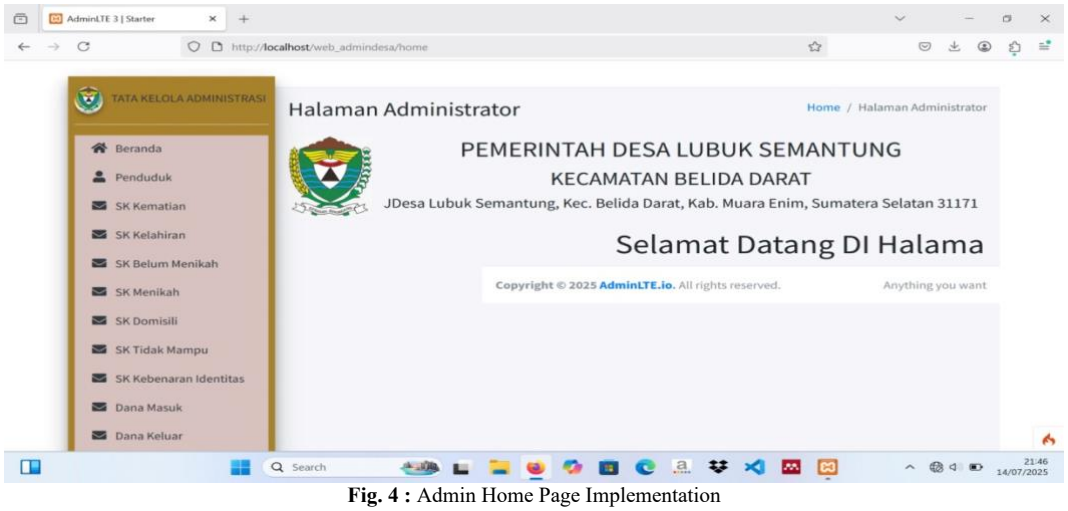

Fig. 4 : Admin Home Page Implementation

In the image above is the main page or homepage, all menus are on the main page so the admin can click on them via the main page.

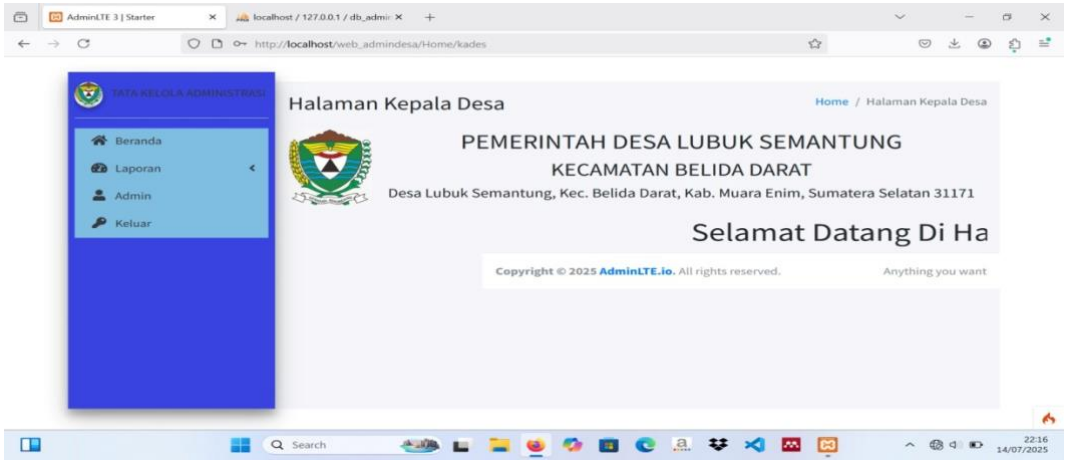

Fig. 5 : Implementation of the Village Head's Home Page

The image above is the village head's main page, which is used to view reports.

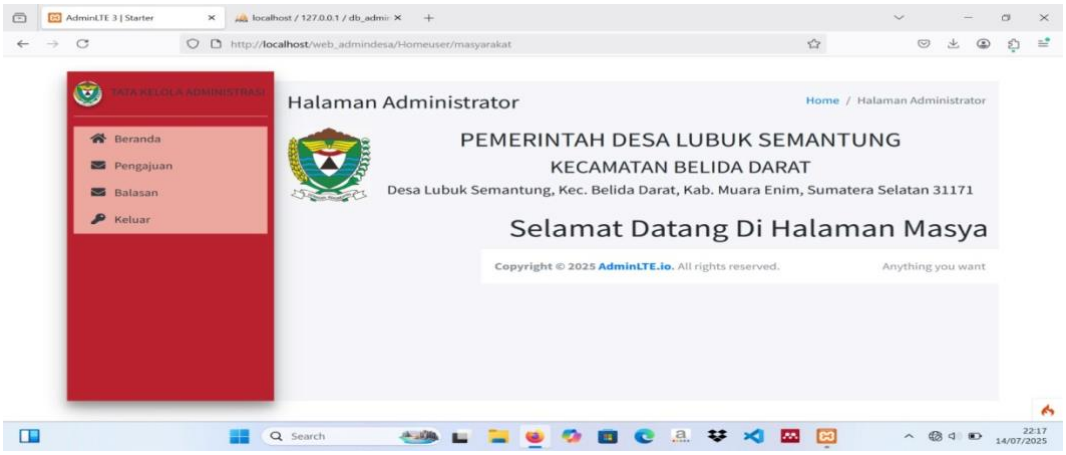

Fig. 6 : Community Home Page Implementation

The image above is the main page of the community, which is used to submit letters.

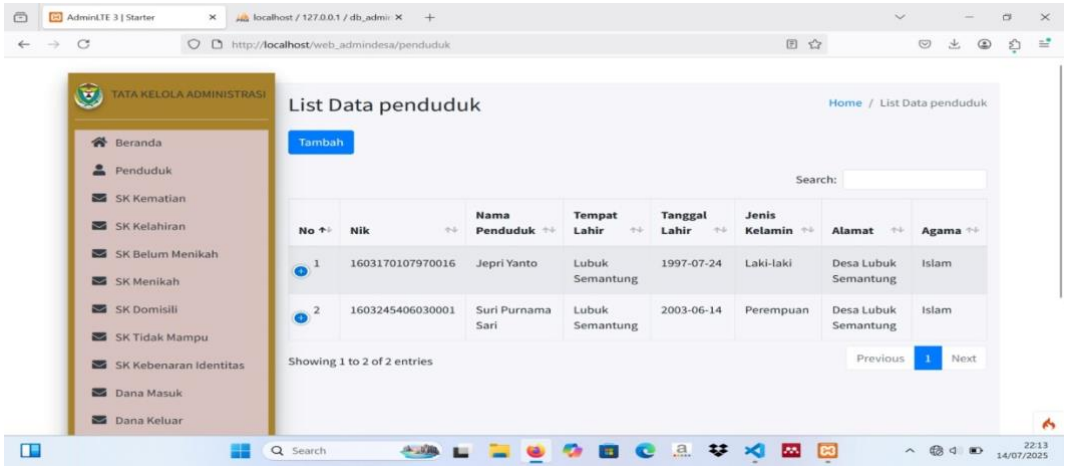

Fig. 7 : Implementation of Population Page

The image above shows the resident page display, so the admin can add, edit, and delete data.

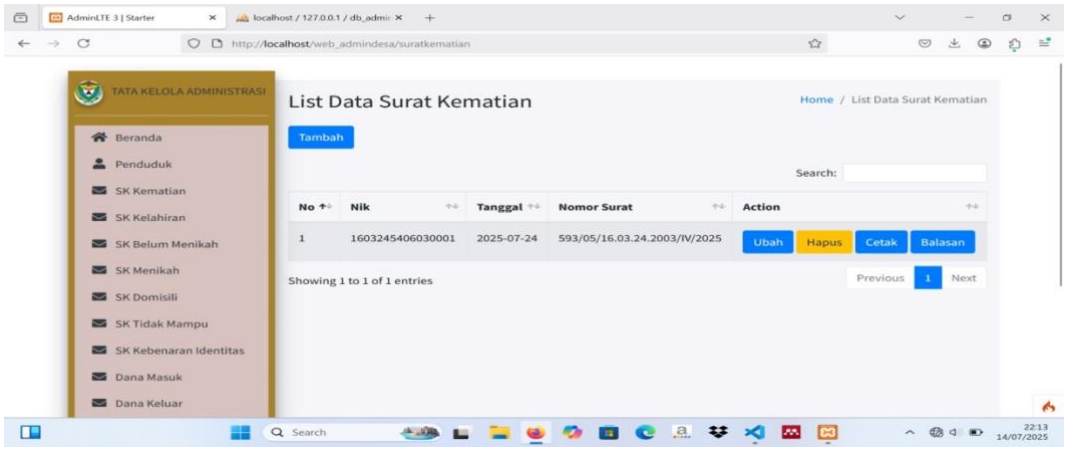

Fig. 8 : Implementation of Death Certificate Page

The image above shows the death certificate page, so the admin can add data, edit, delete, and reply to letters.

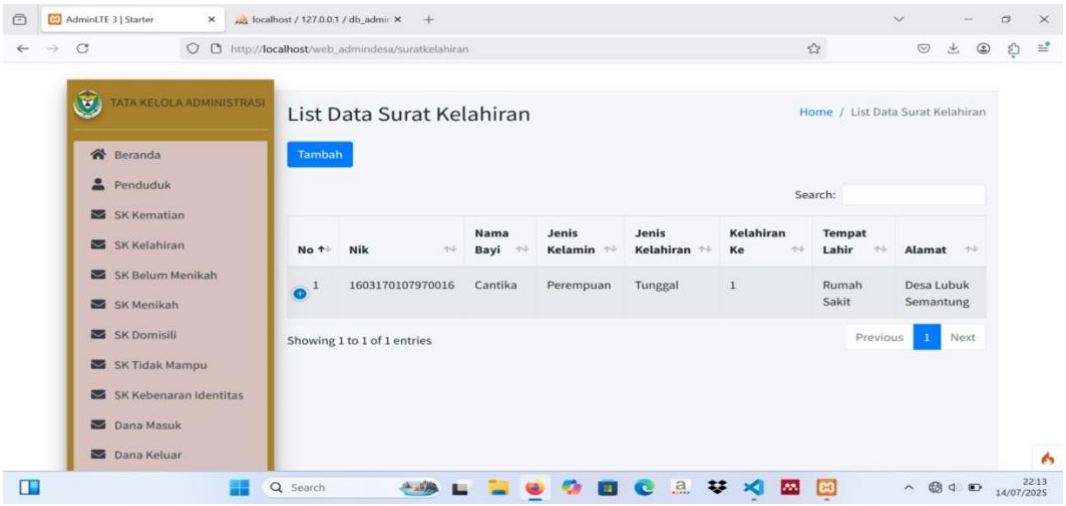

Fig. 9 : Implementation of Birth Certificate Page

The image above shows the birth certificate page, so the admin can add data, edit, delete, print, and reply to letters.

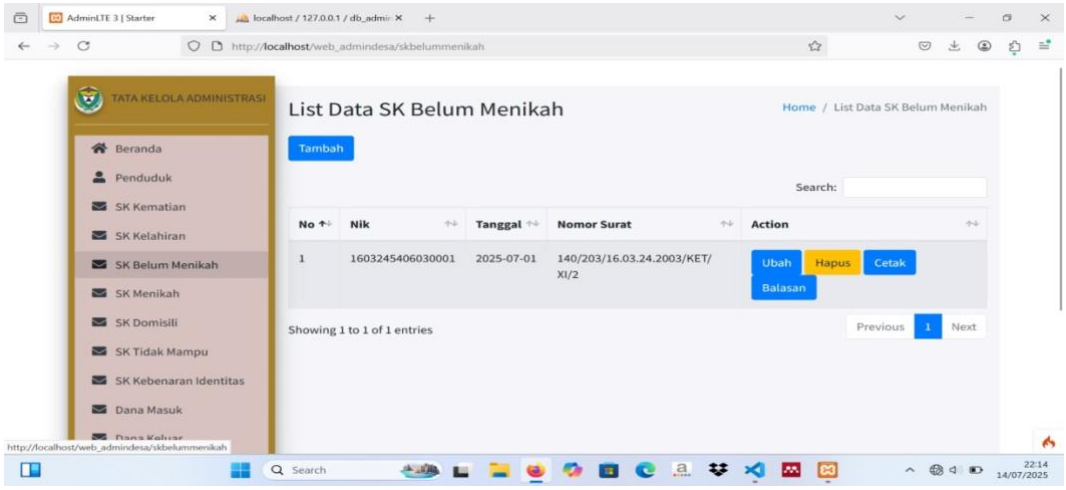

Fig. 10 : Implementation of the Unmarried Certificate Page

The image above shows the page display of the unmarried certificate, so the admin can add data, edit, delete, print, and reply to letters

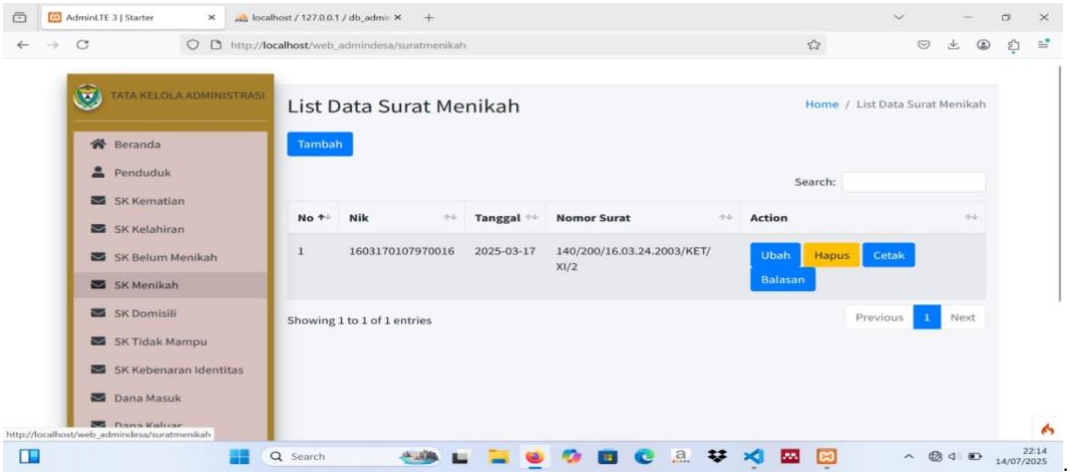

Fig. 11 : Implementation of Marriage Certificate Page

The image above shows the appearance of the marriage letter page, so the admin can add data, edit, delete, print, and reply to letters.

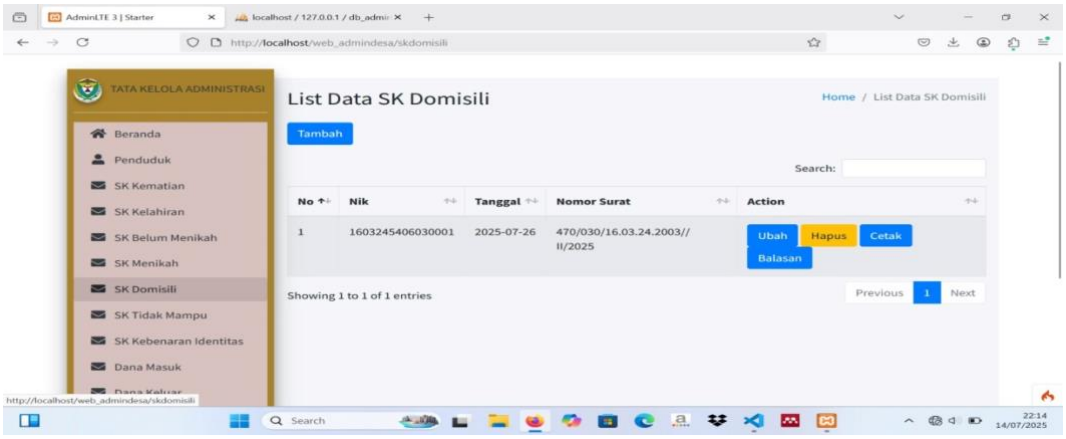

Fig. 12 : Implementation of the Domicile Certificate Page

The image above shows the domicile certificate page, so the admin can add data, edit, delete, print, and reply to letters.

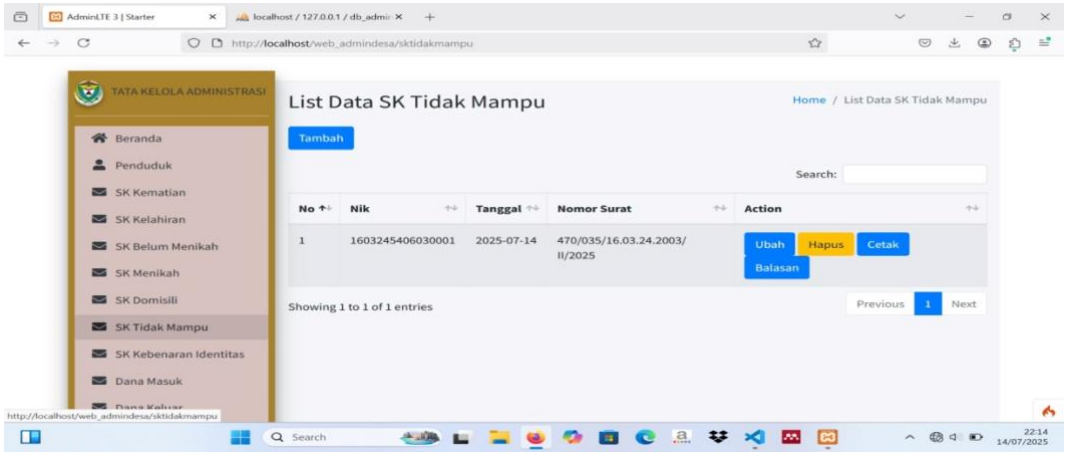

Fig. 13 : Implementation of the Certificate of Inability Page

The image above shows the page displaying the certificate of inability, so the admin can add data, edit, delete, print, and reply to the letter.

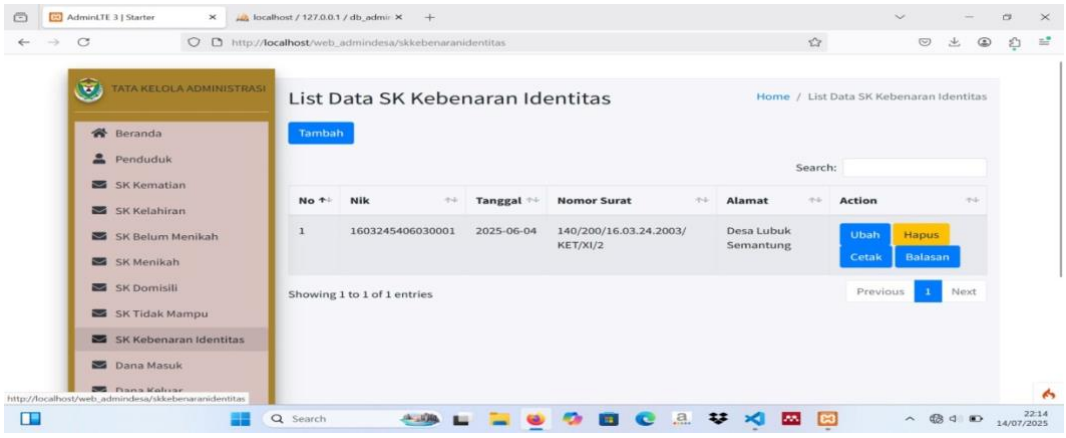

Fig. 14 : Implementation of the Identity Proof Certificate Page

The image above shows the page display for the identity verification letter, so the admin can add data, edit, delete, print, and reply to letters.

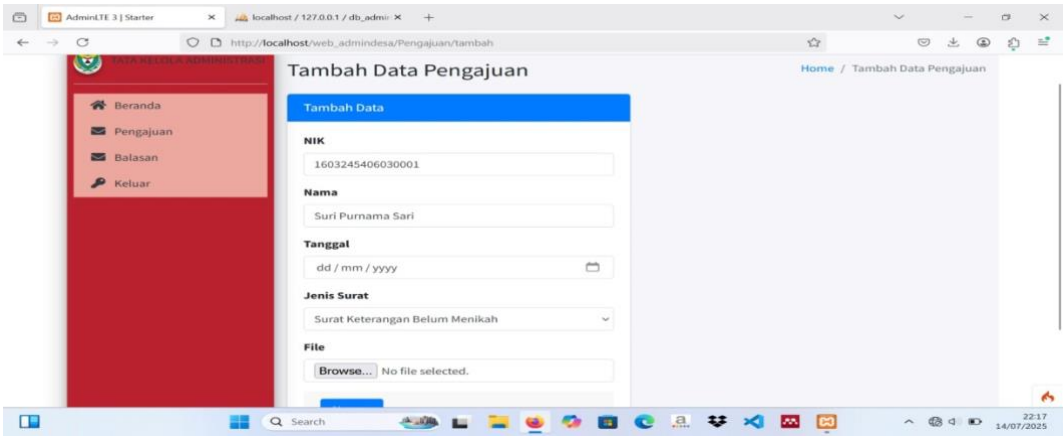

Fig. 15 : Implementation of Letter Submission Page

The image above shows the application form. Simply fill in your details on the form.

5.2. System Testing Conclusion

Based on the results of testing conducted by previous researchers, it can be concluded that the Administrative Governance Information application is valid.

6. Conclusion

Based on the research conducted, several conclusions can be drawn:

1. The development of an administrative governance information system in Lubuk Semantung village utilized agile methods with a Unified Modeling Language (UML) design model, supported by design tools such as use case diagrams, class diagrams, and activity diagrams. The programming language used was PHP and the MySQL database was used.
2. The website-based information system optimizes administrative governance processes.
3. The website-based administrative governance information system in Lubuk Semantung village can help optimize data management.

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